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The Journal

OF THE

American Medical Association



A MEDICAL JOURNAL CONTAINING

THE OFFICIAL RECORD OF THE PROCEEDINGS OF THE ASSOCIATION, AND THE PAPERS READ AT
THE ANNUAL SESSION, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

EDITED FOR THE ASSOCIATION UNDER THE DIRECTION OF THE BOARD OF TRUSTEES BY

GEORGE H. SIMMONS, M.D.

VOLUME LVI : : : : JANUARY—JUNE, 1911

AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1911

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The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 1

CHICAGO, ILLINOIS

JANUARY 7, 1911

THE INDICATIONS FOR AND TECHNIC OF VAGINAL CESAREAN SECTION IN ECLAMPSIA *

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It was my original intention to prepare for this session a paper on the different methods of rapid evacuation of the uterus in the various toxemias of pregnancy. The invitation to participate in this symposium on eclampsia has modified my plan and I shall confine my remarks to the indications and technic of vaginal Cesarean section in eclampsia.

INDICATIONS

Vaginal Cesarean section or vaginal hysterotomy, the incision of the pregnant uterus through the vagina, is indicated in eclampsia when, in the presence of a rigid cervix, the uterus has to be rapidly emptied. It would seem as if these indications were simple enough. When the cervix is easily dilated or when there is no need for haste, other methods of emptying the uterus may be employed. When a multipara is threatened with eclampsia and the condition of the patient does not demand haste, slower methods of emptying the uterus, such as the balloon, gauze packing or manual dilatation, may be employed. But when the cervix is rigid and haste is necessary, vaginal Cesarean section is much quicker and is the method of choice.

My position in regard to vaginal Cesarean section has been misunderstood, judging from the protests which have been raised against my contention that under certain conditions the operation should be performed by the general practitioner. But careful consideration will show, I believe, that my position is correct. My claim is that in the past the practitioner has been taught to perform and expected to do any obstetric procedure which stopped short of using the knife. He was taught, for example, the indications and contraindications of high forceps, an operation calling for far more judgment and skill than vaginal Cesarean section. He was taught and has practiced for years the difficult and slow manual dilatation of the parturient os, with all its attendant danger of laceration of the cervix, as well as sepsis from the carrying upward of septic material from below. Yet the minute the practitioner is advised in the presence of a rigid cervix which will not yield to manual dilatation, when haste is imperative, to perform a clean surgical operation requiring the use of the knife, the wise ones

shake their heads and speculate as to the harm that will result from such operations in unskilled hands. What operative procedure, may I ask, has not resulted in harm in certain hands, and, I may add, sometimes in supposedly skilled hands? It is not my purpose to advocate indiscriminate operating by anybody and everybody. Undoubtedly it would be better if surgery of every description could be limited to a select few in each community. Then the inexperienced operator would be heard of no more. The man who aspired to be one of those to perform surgery in a certain district would prepare himself by years of hospital work, serving a long apprenticeship under some older surgeon. Then this specialist would be ready to respond to the call of every practitioner and perform all his operations for him, obstetric as well as others. No doubt this would be an ideal condition of affairs, especially for the surgeon. But it needs no great argument to convince us that in this country, at least, such an ideal situation will not materialize in our lifetime. Even in the cities, where now it would be possible for such a condition of affairs to exist, the practitioner still persists in performing his obstetric surgery. In fact, it is about the only surgery in this age of specialism that has been left to him, or that he contends should remain his.

I am not referring to the city practitioner with the special obstetric surgeon within easy call. I am making a plea for the country practitioner, who must do the best he can, with the aid perhaps of a fellow practitioner no more skilled than himself. My contention is that less harm will be done when it becomes necessary to empty the uterus in eclampsia in the presence of a rigid cervix, by a clean-cut surgical procedure like vaginal Cesarean section, than by manual dilatation, the operation usually selected under these conditions.

My friend, Dr. Philander Harris, the originator of the only true scientific method of manual dilatation, a man of great gynecologic and obstetric experience, is able to accomplish dilatation in three-quarters of an hour even in difficult cases. Yet even he can not be entirely satisfied with the method, for recently he has brought forward a modification of Bossi's instrument, in which a powerful mechanical force takes the place of the fingers.

It is not a question of an hour's time in these difficult cases in which the cervix is rigid. The practitioner employs one hand until it is numb and useless. Then the other is substituted, each hand being inserted into the vagina and up to the cervix many times before dilatation is accomplished. Such manipulation means sepsis or a great chance of septic infection in every such operation. It is not uncommon for a physician to relate the history of a difficult case of eclampsia in which it required three or more hours before the cervix could be dilated, the patient being under the anesthetic all this time. For

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

my part I cannot see why obstetric surgery should not be as well done and according to as sound principles as other kinds of surgery. If practitioners are not familiar with the technic of this operation it is not an impossible task for them to acquire it.

THE TECHNIC

One assistant, besides the anesthetizer, is all that is absolutely necessary, although it is more convenient for

The vulva and vagina should be prepared as for any other obstetric operation, and the bladder carefully emptied. With the gloved hand, held in the shape of a cone, the vaginal orifice and the vaginal canal should now be completely dilated, in the same manner but more thoroughly than is customary when the hand is intro-

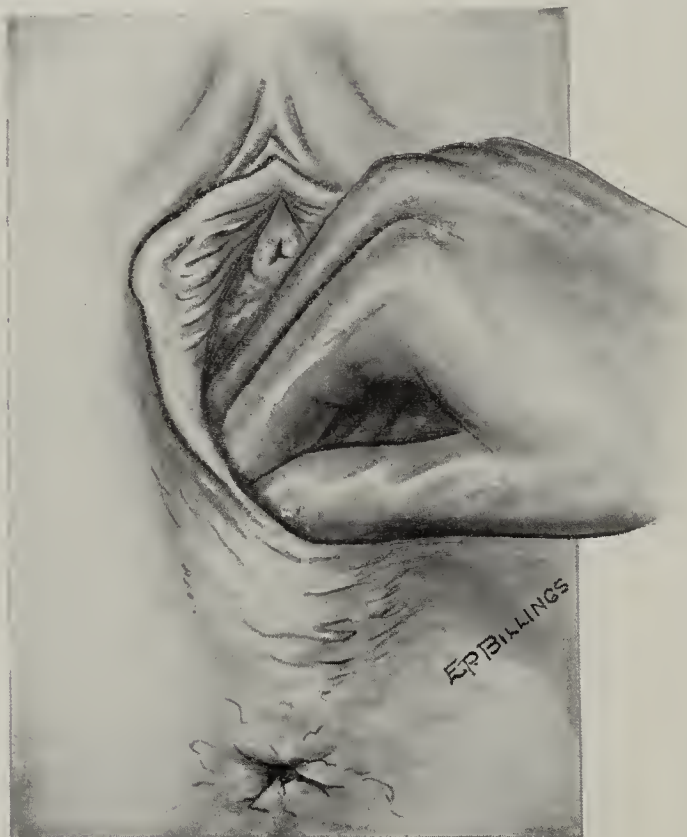


Fig. 1.—Vaginal orifice and vagina dilated with the gloved hand, held in the shape of a cone.

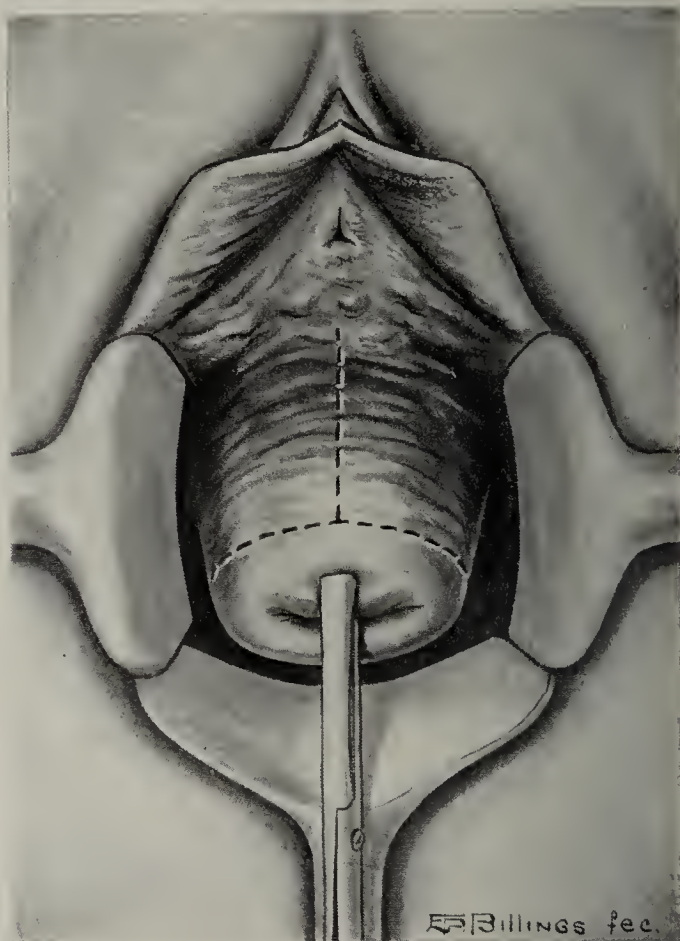


Fig. 3.—Additional longitudinal incision at times necessary to secure more room.

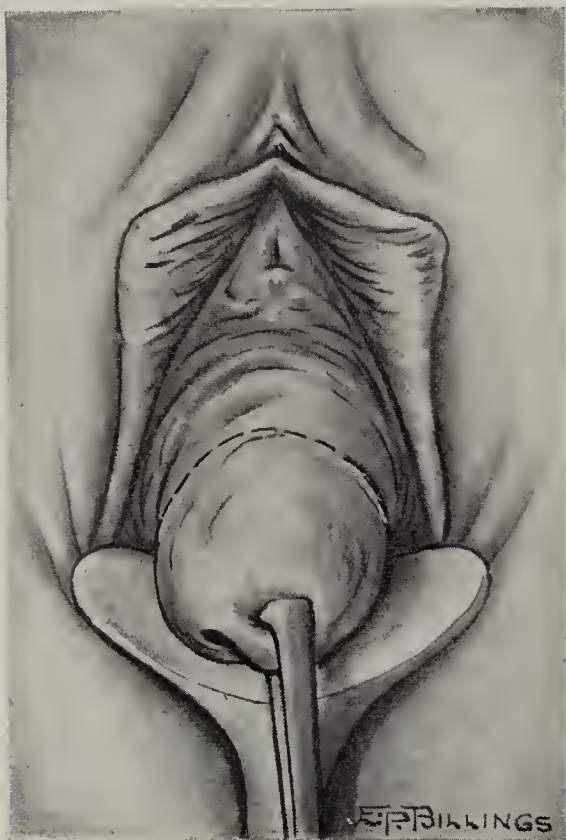


Fig. 2.—Cervix drawn forcibly downward by volsella forceps. Transverse incision through mucosa at vaginal juncture.



Fig. 4.—Vaginal and bladder walls dissected away from uterus by downward and upward strokes with sponge.

the operator to have an assistant at each leg of the patient. If only one assistant can be secured the patient's legs can be held in the lithotomy position by an ordinary obstetric leg-holder, or a sheet passed under the popliteal spaces and over one shoulder and under the other.

duced for the operation of manual dilatation (Fig. 1). It may be necessary with very small vaginas to employ the lateral incisions advocated by Schuehardt, but they are unnecessary in the large majority of cases, ample dilatation being secured through the use of the hand-

dilator as described above. However, it is essential that ample dilatation be secured, else the on-coming or after-coming head may either be arrested at the outlet or, if force be employed, tears of the perineum may result.

The perineum being depressed, the anterior lip of the cervix is seized and drawn downward to the vulva. Us-

essential that the anterior and posterior incisions be made aided by sight. A transverse incision long enough to take in nearly one-half the circumference of the cervix is now made through the vaginal mucosa at the vaginal juncture (Fig. 2). At times, with a small cervix, it may be necessary to add a longitudinal cut through the

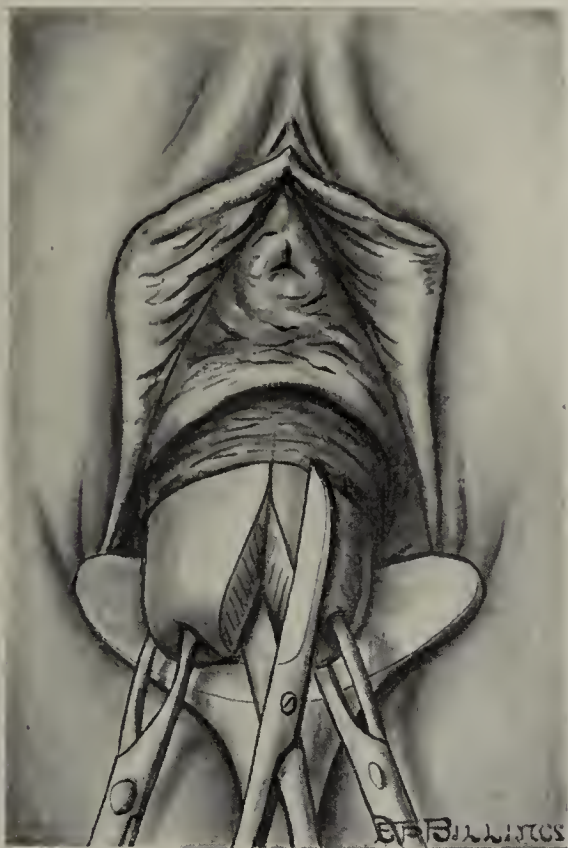


Fig. 5.—Cervix grasped at each side of median line by volsella forceps. Cervix split upward for about 9 cm. in median line by stout scissors, care being taken not to distort cervix.

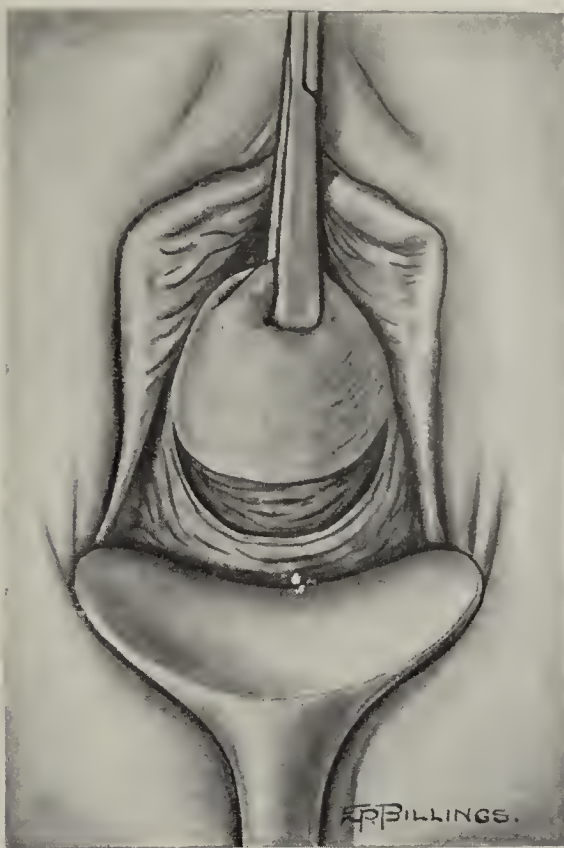


Fig. 7.—Transverse incision through posterior vaginal mucosa preparatory to splitting posterior cervical lip in median line. Through transverse incision rectum and peritoneum are pushed away from uterus by sponge.

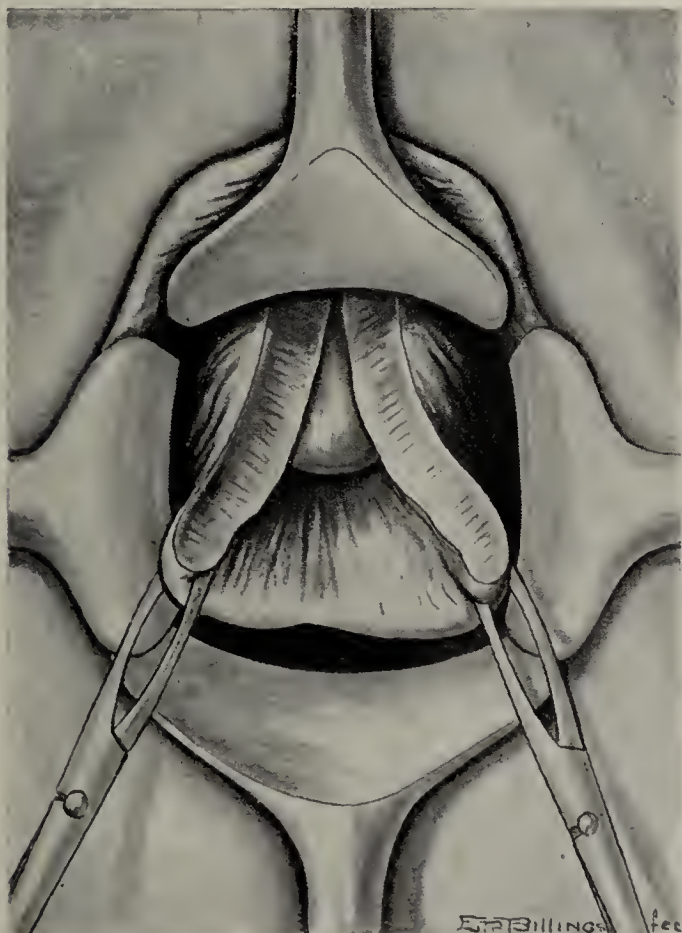


Fig. 6.—Bladder held away by retractor. Uterus split upward in median line. Scissors guided by fingers so as not to puncture bag of membranes.



Fig. 8.—Anterior and posterior uterine walls incised. Intact bag of membranes protruding.

ally this is easily accomplished, so that the anterior vaginal wall, the field of operation, is within easy reach. When, for any reason, the cervix cannot be so drawn down, the operation is contraindicated, as it is quite

vaginal mucosa, thereby making an inverted T-shaped incision (Fig. 3). Usually the first incision is sufficient to allow the pushing upward of the vaginal and bladder walls by a few strokes of the sponge (Fig. 4). Pressure

must be downward toward the uterus, at the same time upward; otherwise the bladder may be opened. On account of the vascularity of the tissues due to the pregnant state, no difficulty is experienced in separating the bladder, the tissues acting in a manner entirely differently from their behavior in the case of the non-pregnant

A retractor is next inserted between the uterus and bladder and pulled sharply upward, thus holding the bladder out of harm's way. Or the bladder can be forced upward against the pubes and held there by a small

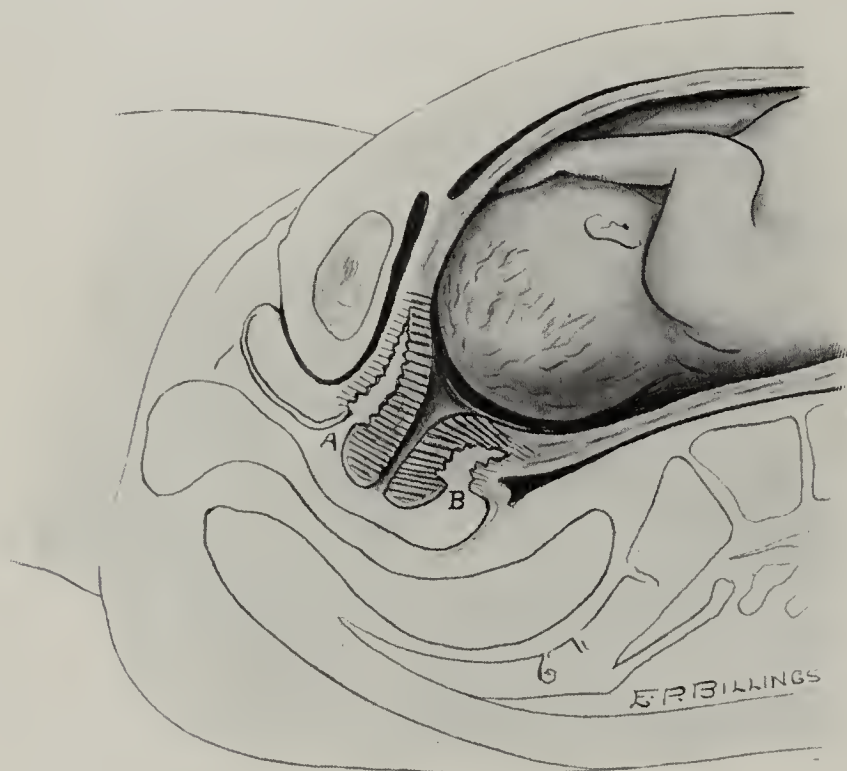


Fig. 9.—Cut showing extent to which anterior and posterior uterine walls can be incised. Peritoneum not opened. Ample space for passage of child.



Fig. 11.—Posterior incision closed by continuous chromicized catgut introduced from posterior surface down to but not through cervical mucosa. Anterior incision being sutured and upper portion of incision being drawn down to facilitate introduction of suture.

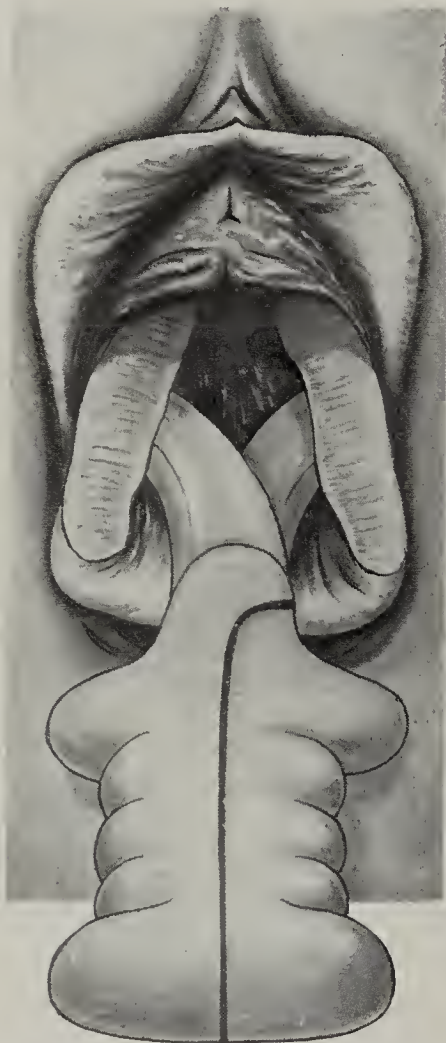


Fig. 10.—Showing forceps introduced through incision. In most cases version preferable to forceps. Volsella forceps should be removed from cervix before application of forceps or version.

uterus. If for any reason there be difficulty in pushing up the anterior wall, instead of using force, the tissues next to the cervix should be snipped with the scissors.

sponge. A volsella forceps is then placed at either side of the external os and the cervix and lower uterine segment split upward in the median line by stout scissors for about nine centimeters (Fig. 5). Care should be taken

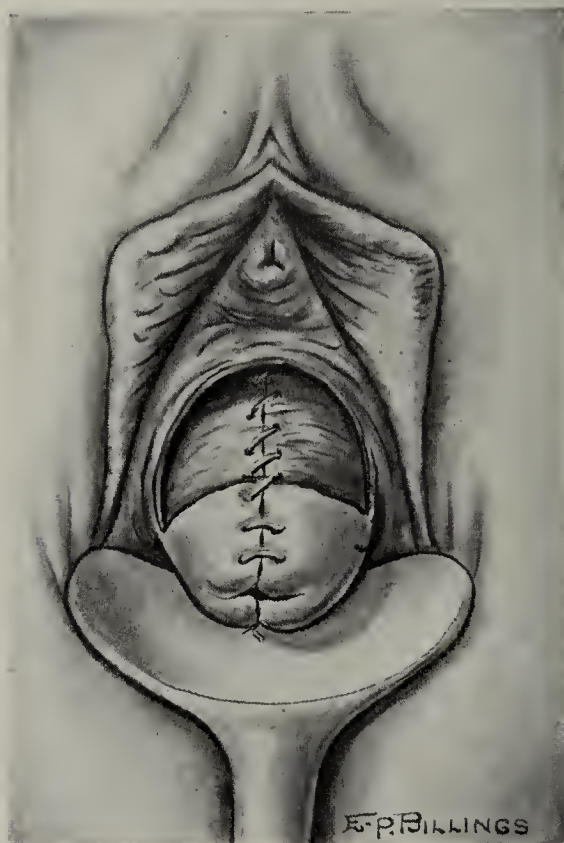


Fig. 12.—Suture of anterior and posterior incisions completed.

not to distort the cervix so that the incision can be made exactly in the median line, in which case there will be little or no hemorrhage. Also, if the point of the scissors be guided by the fingers, the cervix can be cut with-

out rupturing the membranes, a desirable thing, as usually the operation is completed by version (Fig. 6).

In case the operation is performed from the beginning of the ninth month to term, on account of the relatively large size of the child's head it is best to incise the posterior cervical lip as well. Otherwise, while there may be room enough for the passage of the hand upward where the anterior lip alone has been excised, there may not be room enough for the passage of the after-coming head, and a tear of the uterus may result; or there may be so much delay as to endanger the life of the child. A transverse incision about six or seven centimeters in length is made through the mucosa at the posterior vaginal juncture and the rectum and peritoneum pushed away by a sponge (Fig. 7). The posterior lip is then incised in the median line in the same manner as was the anterior lip and for about the same distance.

The split cervix is now exposed, as shown in Figure 8. If care has been taken the unbroken bag of membranes will be seen protruding through the opening.



Fig. 13.—Vaginal mucosa united by continuous catgut suture which should not be too tight for fear of oozing under flap. In some cases cigarette gauze drain can be placed temporarily at one angle of wound.

The extent of the anterior and posterior incisions and the space obtained for the passage of the child is illustrated by Figure 9.

The extraction of the child may be by forceps (Fig. 10) or by version. Usually the latter is preferable when haste is desirable. However, the forceps should always be at hand in case there be difficulty in extracting the after-coming head, delivery being easily accomplished by flexing the head over the perineum by means of the forceps. After the incisions have been made, and prior to the extraction of the child, the volsella forceps should be removed from the cervix, else the hand or the forceps, by pressure upward, may cause them to tear through the friable cervical tissues, thereby giving rise to ugly, ribbon-like tears.

The placenta can be removed manually or expressed by the Credé method. Usually there is no more bleeding than follows any operation which rapidly empties the uterus. Tamponade of the uterus is generally unneces-

sary, although it is indicated if there be postpartum hemorrhage.

The operation up to this point can be easily finished within ten minutes by one who has had experience with vaginal work, although this rapidity cannot be expected from inexperienced hands.

The incisions should be sutured with catgut, plain or chromicized, as one may prefer. To save time, continuous sutures should be employed, the needle going down to but not through the cervical mucosa (Fig. 11). When both anterior and posterior lips have been incised the latter should be sutured first (Fig. 11). Care should be taken to see that the upper point of the anterior incision is sutured; if necessary the uterine walls being pulled downward for this purpose by tenaculum forceps (Fig. 11), thus securing accurate coaptation of the cut cervical tissues (Fig. 12). Care should be taken not to suture too tightly the vaginal flap for fear of oozing and a collection beneath the flap (Fig. 13). In some cases it may be advisable to place a temporary gauze drain at one corner of and under the flap in order to secure drainage.

The after-treatment differs in no respect from an ordinary obstetric operative case. Vaginal douches are not necessary unless suppuration should occur. The cervical wounds usually heal and give very little trouble. A number of normal labors after this operation show that the cicatrices are strong enough to stand subsequent labor without rupture.

620 Forest Avenue.

THE TREATMENT OF ECLAMPSIA

INCLUDING A COMPARISON OF THE DANGERS OF CHLOROFORM AND ETHER IN THIS CONDITION

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AND

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NEW YORK

In all branches of medicine to-day the prophylactic treatment, or preventive medicine, receives foremost consideration. Hence it is that in the treatment of eclampsia the toxemia of pregnancy, which threatens and may, or may not, eventuate in an eclamptic seizure, demands our chief attention. Whatever the exact etiology may prove eventually to be, it is generally agreed that the symptoms and pathologic changes of the toxemia of pregnancy and the puerperium are caused by some toxin or toxins circulating through the system, and that with this there is associated some fault in the elimination of the products of metabolism.

Accepting this as a working basis of etiology, the obstetrician may well be guided in treatment of toxemia threatening eclampsia by these five principles:

1. The products of metabolism requiring elimination should be reduced.
2. Elimination of metabolic products should be favored.
3. High blood-pressure should be reduced.
4. If the toxemia of the patient, as shown by the urine, blood-pressure and general condition, does not markedly improve under the preceding principles of treatment, or if an eclamptic seizure occurs, the uterus should be emptied.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

5. In all methods of treatment that should be avoided which will either reduce the resistance of the patient, or seriously damage any of her organs.

Let us now consider these principles more in detail.

1. In reducing the products of metabolism requiring elimination the obstetrician is brought face to face with the problem of diet for the toxemic patient. As proteid metabolism is that most often at fault, it is generally

month of a normal pregnancy, to allow the ingestion of red meat only two or three times a week.

2. In favoring the elimination of products of metabolism, the three avenues, the skin, the urinary tract and the intestinal tract, should receive careful attention. Thus elimination through the skin by sweating, induced either by the hot-air bath or the hot wet pack, is a most useful measure in the treatment of toxemia. Elimina-



Fig. 1.—Liver of eclamptic patient.

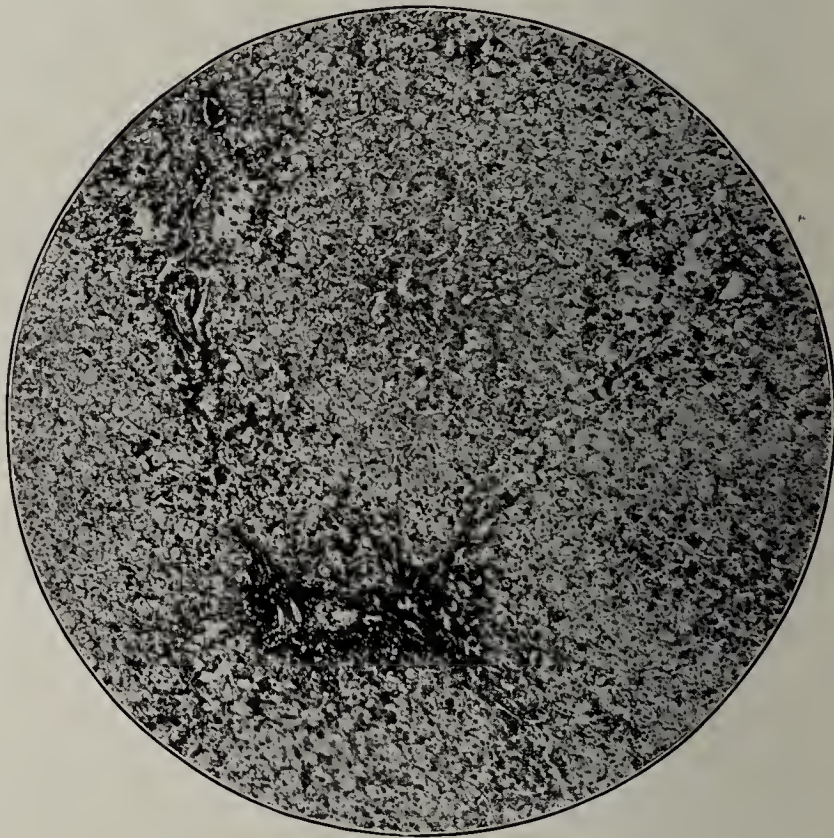


Fig. 3.—Liver of another eclamptic patient.

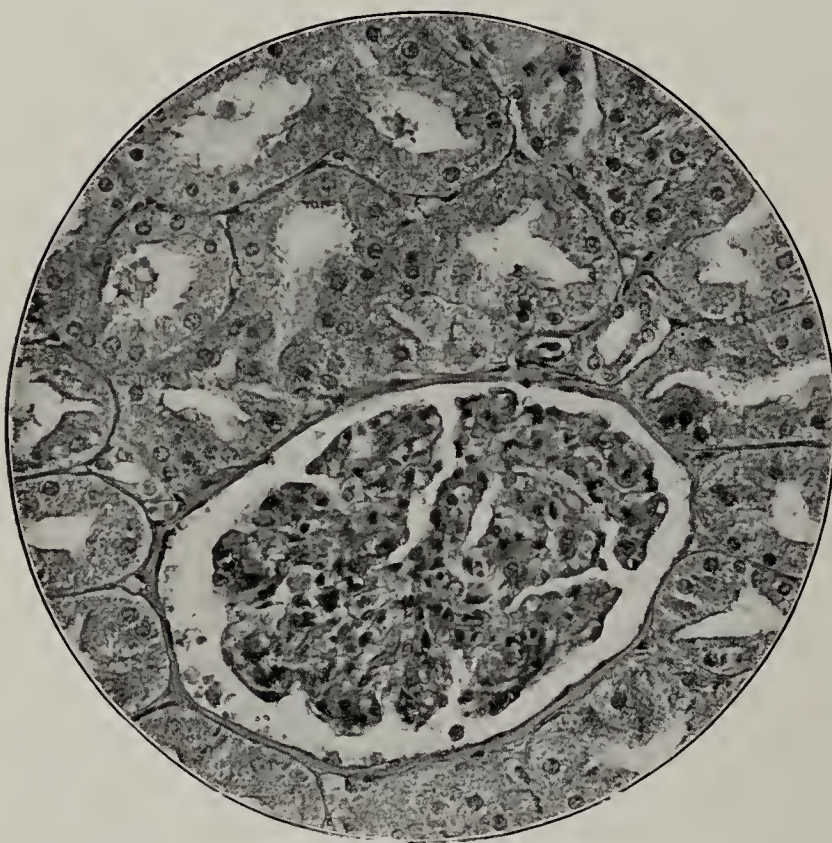


Fig. 2.—Kidney of eclamptic patient whose liver is shown in Figure 1.

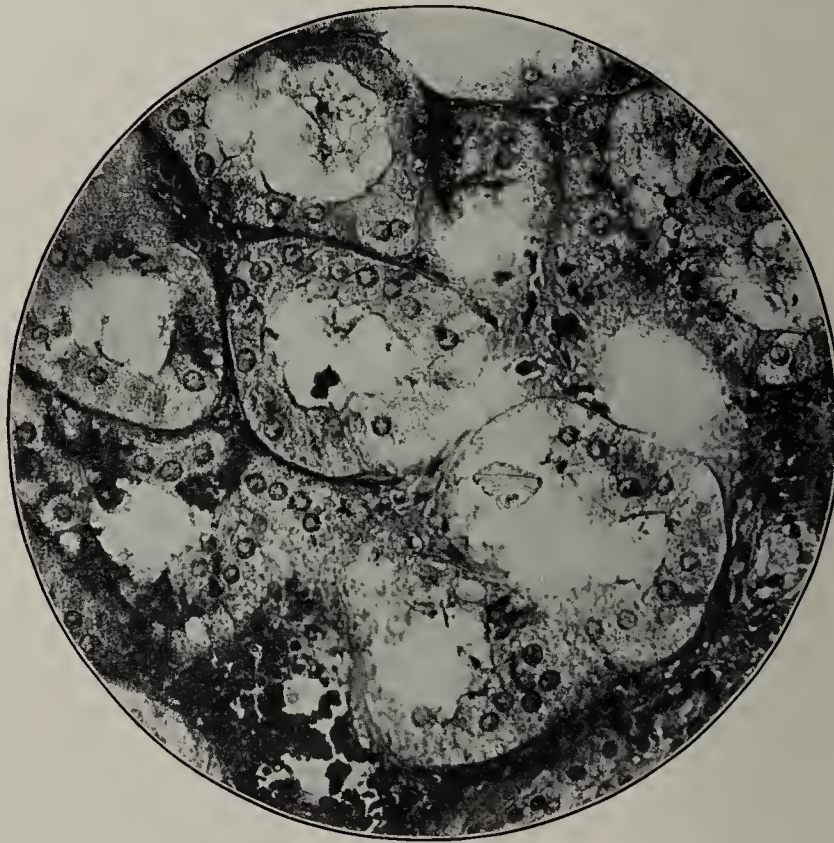


Fig. 4.—Kidney of eclamptic patient whose liver is shown in Figure 3.

agreed that red meats should be avoided in all forms of toxemia of pregnancy and the puerperium. Although in mild degrees of toxemia, chicken and fish may be allowed, in severe forms of the condition an exclusive milk diet with large draughts of water is the diet of choice, to which are added chicken broth, fruits and green vegetables, as the toxemia diminishes. As a prophylactic measure it is our custom, during the last

tion through the urinary tract, favored by the ingestion of large amounts of water, and elimination through the intestinal tract, favored by calomel and saline or other laxatives, and especially by colon irrigations with saline solution, are methods which are considered routine procedures in the treatment of this condition.

3. In the reduction of blood-pressure, while venesection is the choice of many obstetricians, and was formerly

quite extensively employed by one of us, its use has now been superseded at the Sloane Maternity by veratrum viride, nitroglycerin and chloral, and with better results.

Our method of using these drugs in toxemia threatening eclampsia is as follows: Chloral (30 grains) is administered per rectum as an initial dose and then repeated in doses of from 20 to 30 grains from every four hours to every six hours, according to the restless-

dermatically and watch the effect. As the frequency is usually reduced with the tension, it is our custom to be largely guided in repetition of the dose and in the size of the dose, by the frequency of the pulse, although the reduction in the tension is the object desired.

If at the expiration of from one to two hours the pulse has not been reduced in frequency to 100 or below and the tension correspondingly reduced, a second hypoder-

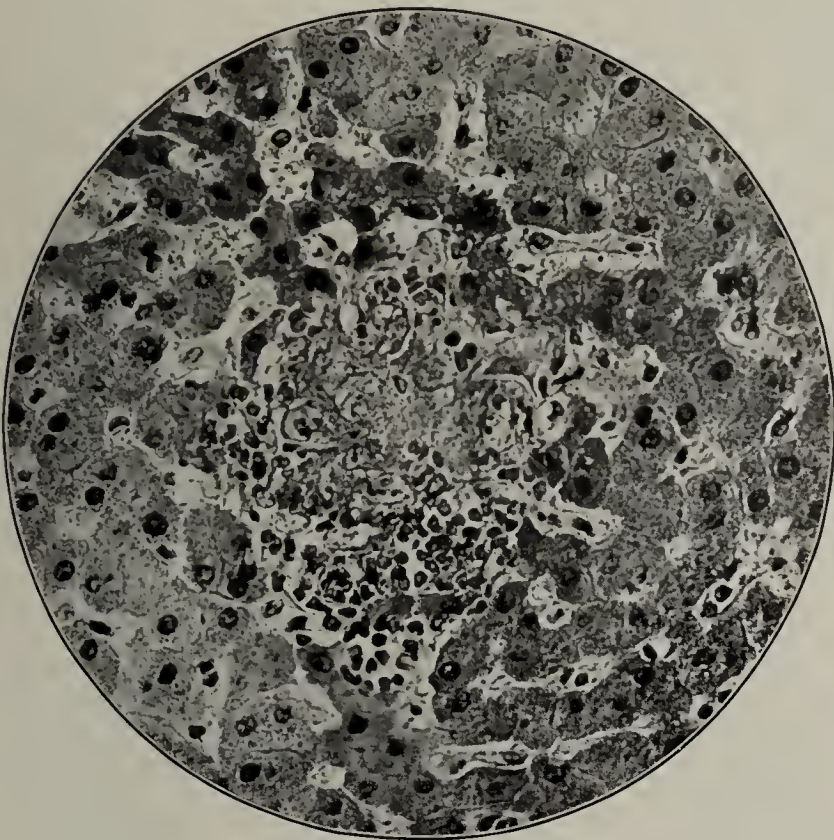


Fig. 5.—Liver of eclampsia, with hemorrhage.

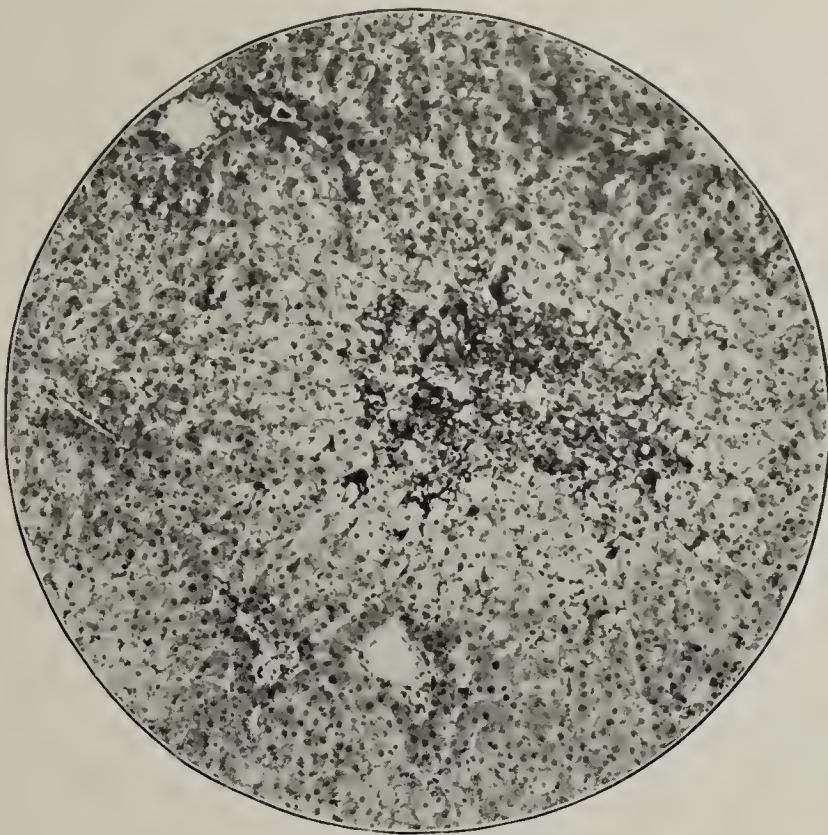


Fig. 7.—Liver of dog. One hour chloroform anesthesia.

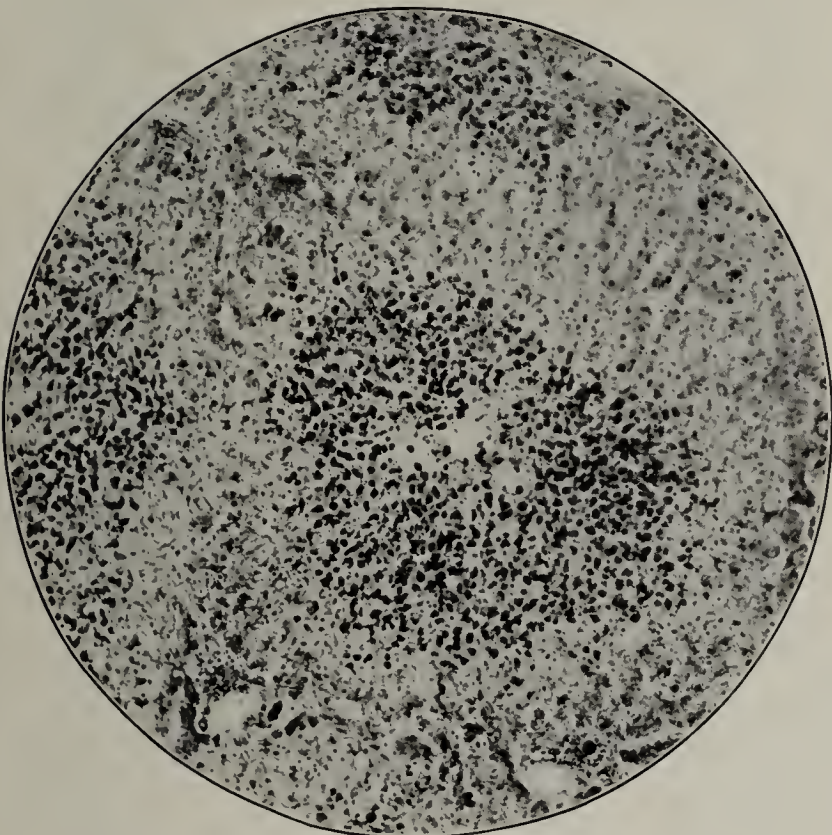


Fig. 6.—Liver. Delayed chloroform poisoning in man.

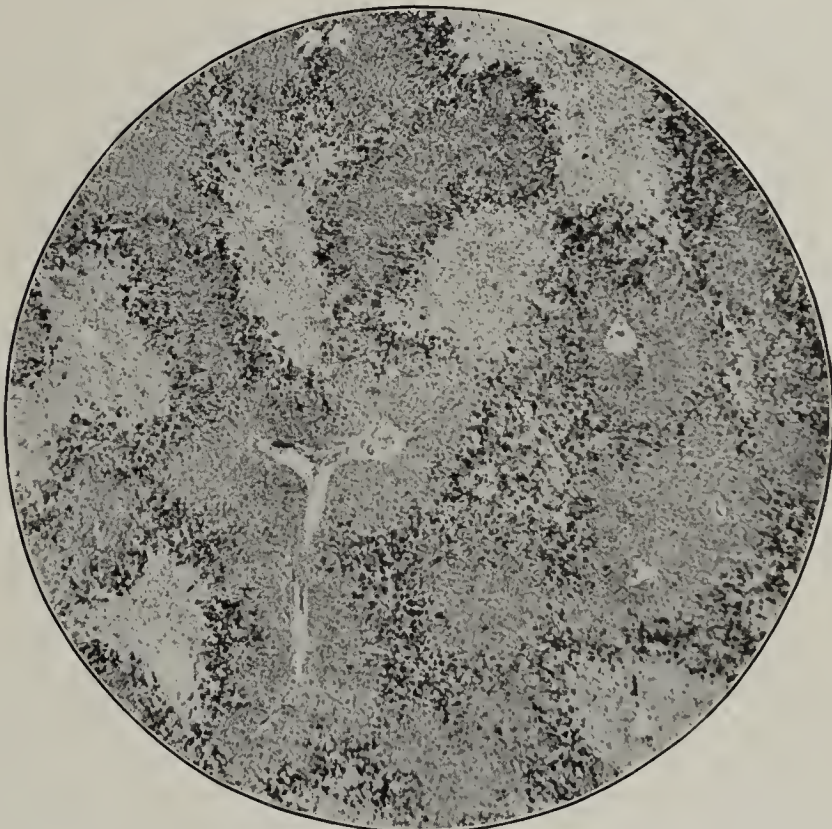


Fig. 8.—Liver of dog. Delayed poisoning after eight and one-half hours' chloroform anesthesia.

ness of the patient. Nitroglycerin gr. 1/50 to gr. 1/100 from every two hours to every four hours is given hypodermatically. If under the use of the larger doses of these drugs the tension still remains high we depend on the use of veratrum viride rather than venesection.

The preparation used has been Squibb's fluidextract of veratrum and the dose employed has scarcely ever exceeded 5 minims. Our rule is to give 5 minims hypo-

dermic injection of veratrum 1 to 3 minims is given. The tension of the pulse is then controlled, if not kept low by the continued use of the nitroglycerin, by repeated doses of veratrum 1 to 3 minims every four hours.

4. To repeat the fourth principle stated earlier in the paper, if the toxemia of the patient, as shown by the urine, blood-pressure and general condition, does not

markedly improve under the preceding principles of treatment, or if an eclamptic seizure occurs, the uterus should be emptied. At the Sloane Maternity Hospital some years ago a series of patients was treated on the palliative plan, favoring elimination without emptying the uterus, but the mortality was so much greater than when the fetus and its toxins were eliminated from the uterus and the system, that for the past ten years the

This principle has an important bearing on the method of emptying the uterus. Having decided that the fetus should be removed from the uterus, the next questions are, How? and When? If the cervix is soft and dilatable and the patient has had one or more convulsions, our own preference is manual dilatation and delivery usually by version.

If on the other hand the cervix is long and rigid we believe that the patient is better off, even if delivered several hours later, to have her cervix softened and dilated by the preliminary use of the elastic bag, or bags, rather than to be delivered by an immediate *accouchement forcé*, which leaves her in marked shock and with cervix deeply lacerated, perhaps to the vaginal junction. Our observation leads us to believe that pronounced shock and deep lacerations lessen both the resistance of the patient and her chances of recovery. In the cases of long rigid cervix, which do not readily dilate under the use of the elastic bag, the so-called vaginal Cesarean section has a distinct and valuable

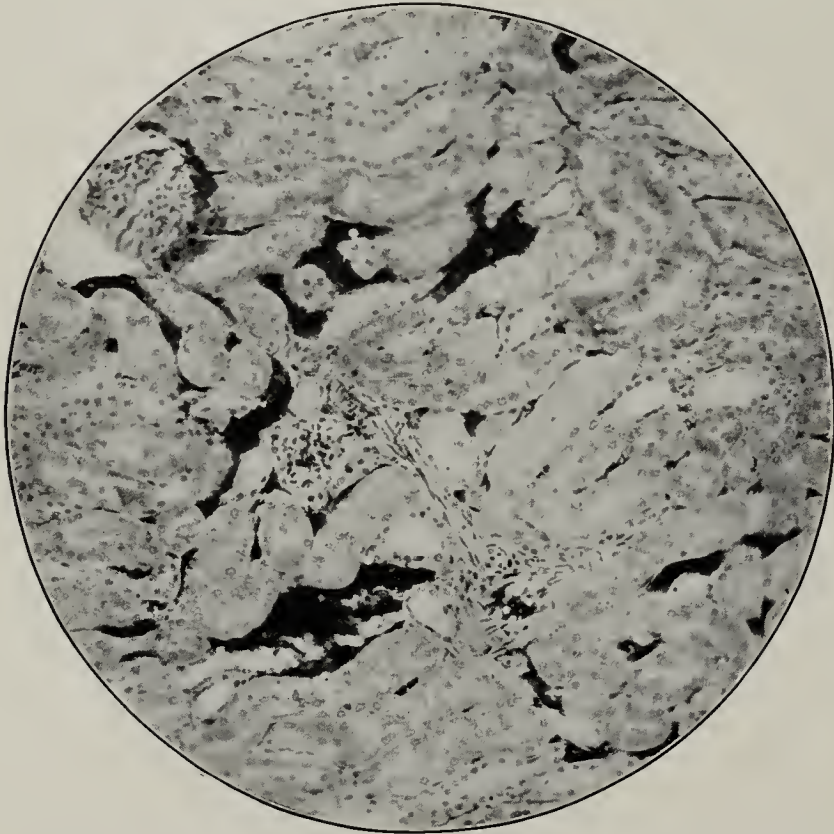


Fig. 9.—Kidney of dog. Delayed poisoning, after seven and one-half hours chloroform anesthesia.



Fig. 11.—Kidney of dog. Five hours ether anesthesia.

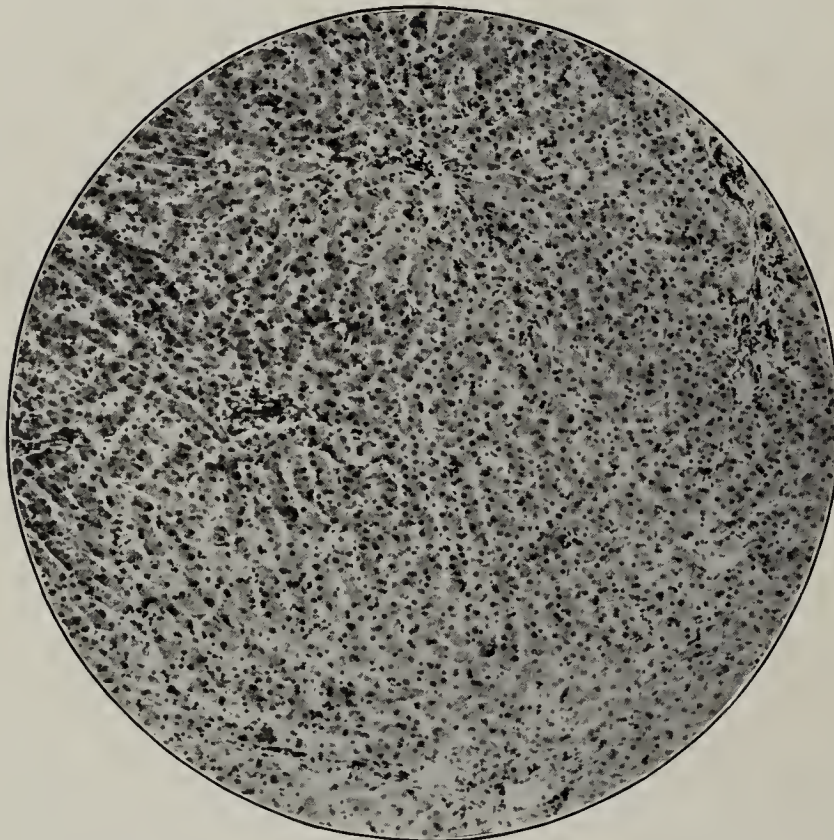


Fig. 10.—Liver of dog. Four and one-half hours ether anesthesia.

rule has been, given an eclamptic seizure, or a toxemia so severe as to strongly threaten eclampsia in spite of treatment, to proceed to empty the uterus.

In carrying out this rule the fifth principle of treatment deserves marked emphasis and will be restated here. *In all methods of treatment, that should be avoided which will either reduce the resistance of the patient or seriously damage any of her organs.*

field of usefulness. In a restricted class of these cases future experience may prove the abdominal Cesarean section to be the operation of choice.

SELECTION OF AN ANESTHETIC

In the treatment of eclampsia one of the most important questions is, What anesthetic shall be used and how shall it be employed? For many years at the Sloane Maternity Hospital, New York, it was our custom to administer chloroform to every patient suffering from eclampsia and to administer it to the patient each time she had a convulsion. This meant that often a physician or a nurse was detailed to sit beside a patient during a whole day, or a whole night, with a chloroform bottle and mask in hand and with instructions to administer chloroform at the first indication of a convulsion. This was done with the idea that the convulsions were in themselves an element of grave danger to the patient and should be controlled if possible. As we look back on the treatment now we appreciate that many patients were kept more or less under the influence of chloroform for many hours at a time.

Further, if the uterine had to be emptied for the toxemia of pregnancy, shown in the early months by pernicious vomiting, or in the later months by eclampsia, chloroform was the anesthetic usually employed.

In the light of our present knowledge concerning the effect of chloroform, the question arises: Does its use in puerperal toxemia and eclampsia conform to our fifth principle of treatment recommended above, viz.: "Harmful remedies should be avoided"? We believe that the question should be answered in the negative; and we propose to show that chloroform is dangerous in puerperal toxemia and eclampsia; that ether is safer and is to be recommended when anesthesia is required in this condition. Recent studies of the pathologic changes produced by eclampsia, delayed chloroform poisoning and chloroform anesthesia have shown a striking similarity in the findings in all three conditions.

The pathologic picture in each is that of congestion, hemorrhage, degeneration and necrosis. Our knowledge of the pathology of eclampsia is of comparatively recent date, but thanks to the work of Jurgens, Schmorl, Williams, Ewing, Welch and others the lesions are now well recognized and generally accepted.

The changes are mainly those of congestion, hemorrhage, parenchymatous degeneration and necrosis. The liver and kidneys are the organs chiefly involved. The lesions vary with the clinical type. Thus, in those cases characterized by vomiting, jaundice, a tendency to hemorrhage, with little edema and slight albuminuria, the liver is the organ most involved, as seen in Figures 1 and 2, which represent respectively the liver and kidney of the same patient. Here the liver is markedly involved and the kidney but little involved.

On the other hand in the cases characterized by headache, high tension pulse, marked disturbance of the nervous system, marked albuminuria and edema, the kidney changes are more marked as is seen in Figures 3 and 4, which represent the liver and kidney respectively of another patient. Here the liver changes are slight and the kidney changes very pronounced.

Although many border-line cases present themselves, still the two distinct types are easily recognized in every large maternity service. The lesions in the liver vary from granular and fatty degeneration, with congestion, to necrosis with almost complete dissolution of the liver parenchyma. This necrosis begins at the center of the lobule and extends towards the periphery, leaving only a mass of granular detritus surrounding the central vein, the nuclei and cell contents disappearing with only a reticular network in the place of the liver cells. Thromboses with hemorrhage occur throughout the lobule more often at the periphery (Figure 5). The organ may be swollen or diminished in size, according to the change in the parenchyma. It usually shows a yellowish color and may have hemorrhages under the capsule.

The kidneys are swollen, the cortex thickened, pale and congested, the markings less distinct, and the capsule not adherent. Microscopically the cells of the cortical tubules are swollen, in many places disintegrating. The vessels are injected and the tubules contain much granular material. Other changes described are moderate fatty degeneration of the heart; edema, congestion, and hemorrhages in the brain. The body often shows edema, subcutaneous hemorrhages and jaundice. The above are the pathologic changes found in the severe grades of toxemia of pregnancy and eclampsia.

Now what are the pathologic changes produced by chloroform, which until recently has been largely used in the toxemic condition?

Delayed chloroform poisoning as such has been frequently recognized and carefully studied both clinically and pathologically for the last twenty years. Many writers have reported series of fatal cases, all showing symptoms and lesions which are now recognized as typical of the condition. A number of these deaths occurred after only twenty or thirty minutes of anesthesia, untoward symptoms developing a few hours to a few days after the administration. The symptoms include progressive weakness, pallor or cyanosis, restlessness, vomiting, delirium, convulsions, stupor, coma and death. The organs principally affected are the liver and kidneys. The former is yellow and fatty, with hemorrhages often under the capsule and throughout its substance. The typical picture is that of a central necrosis (Figure 6). The cells about the central vein disappear, leaving only a mass of granular material which shows neither nuclei nor cell outline. Nearer the periphery of the lobule is a zone of swollen cells, which have undergone hyaline and fatty degeneration. A few normal liver cells may remain at the periphery. The kidneys are swollen, markedly congested, with occasional hemorrhages under the capsule, about the tubules, and in the pelvis. The cortex is thickened, the markings indistinct. Microscopically the cells of the tubules are greatly swollen, granular, and loaded with fat. The lumen is filled with granular material, fat globules and coagulated serum. The heart muscle often shows some fatty degeneration. The changes are generally considered to be more profound in the liver, though some observers have found the kidney degeneration even more marked.

The reports of these cases of delayed chloroform poisoning with their pathologic findings led naturally to a study of the lesions produced by chloroform anesthesia. Many animals were used in these experiments, most often dogs, rabbits and guinea-pigs. These studies were exhaustive and include the work of Lengemann, Ostertag, Stiles and McDonald, Ståssman and others, together with the more recent work of Höwland and Whipple. The most striking result of these studies was the extent of the degeneration and necrosis found in the liver and kidney after chloroform anesthesia of a short duration.

It has been found that characteristic lesions are regularly produced, varying in degree with the duration and depth of anesthesia and also with idiosyncrasy. Thus after thirty minutes to one hour anesthesia with chloroform, the centers of the lobules of the liver show congestion with granular and fatty degeneration, the innermost cells being necrotic, their nuclei not taking the stain and the protoplasm being deeply stained pink with eosin (Figure 7). With more prolonged action the changes approach those found in delayed chloroform poisoning in man. The liver appears yellow and fatty with scattered hemorrhages. The cells about the centers of the lobules are entirely necrotic, a granular mass remaining. Outside of this is an area of cells which have undergone hyaline and fatty degeneration, with normal cells at the periphery. In some cases the liver cells have almost entirely disappeared with only a few scattered living cells in the portal spaces (Figure 8). In the kidney, chloroform anesthesia causes a marked congestion with a cloudy swelling and occasionally hemorrhages into the parenchyma. The cells of the tubules are swollen and granular, occluding most of the lumen; in other places they have disappeared entirely. Fatty degeneration is present and in many cases pronounced (Figure 9). The heart muscle may be pale and show

fat droplets in its fibers. Hemorrhages occur throughout the body, particularly in the serous membranes, and in the intestinal and stomach mucosa.

Howland and others were able, almost at will, by continuing the anesthesia to produce delayed chloroform poisoning in dogs, with symptoms and lesions corresponding in detail with those of delayed chloroform poisoning in man. Thus we find in these three conditions, eclampsia, delayed chloroform poisoning in man and chloroform anesthesia in animals, many similarities. Pathologically there is central necrosis, parenchymatous and fatty degeneration in the liver; congestion, parenchymatous and fatty degeneration in the tubules of the kidney and a tendency to hemorrhages throughout the body. Clinically in delayed chloroform poisoning and in eclampsia there are vomiting, jaundice, delirium, convulsions and coma. With these facts before us, showing that chloroform acts as a poison to the liver and kidney, it certainly seems that its use in toxemia of pregnancy and eclampsia would still further impair these organs already damaged.

In turning to ether as a substitute, the question naturally arises, Does ether produce lesions in the liver and kidney similar to chloroform? Some work has already been done along this line, notably by Bandler, Lengeman and Leppmann, and it was partly to confirm scattered observations on this subject that a further study of ether anesthesia was undertaken.

In our experiments six mongrel dogs of medium size were given ether by inhalation from an open cone. They were killed with ether forty-eight hours after the last anesthesia and autopsied at once.

Tissues were fixed with Müller's fluid and 10 per cent. liquor formaldehydi equal parts, and stained with hematoxylin and eosin. Fat was stained with Altman's fluid, Scharlach R. as control. Sufficient ether was given to produce complete muscular relaxation with loss of corneal reflex.

Dog 1. Given ether for 3 successive hours.

Dog 2 and 3. Given ether 2 hours each on 2 successive days.

Dog 4. Given ether for 2½ hours on 2 successive days.

Dog 5. Given ether for 3 hours on 2 successive days.

Dog 6. Given ether for 2½ hours on 3 successive days.

With Dogs 3, 4 and 6 a section of liver and kidney was taken at the beginning of the first anesthesia for control. The dogs all took the anesthesia well and appeared bright and active throughout the experiments with the exception of Dog 3. This dog required artificial respiration twice, had a slight cough on the first day, which became more marked on the following days. It showed no pneumonia on autopsy.

In none of these animals could any necrosis in any of the parenchyma be found. In the lungs occasional small areas of a deeper red than the surrounding substance, containing an increase in amount of blood on section, showed congestion. The heart muscle in each dog was found to be of normal color, striations distinct, no apparent increase in fat.

There were no hemorrhages in the mucosa of the stomach and intestines.

The livers were of a good color throughout, the vessels in a few places standing out a brighter red than the surrounding structure. The yellow appearance was entirely lacking, the cells throughout preserved their outlines with contents intact (Fig. 10). There was no suggestion of necrosis at any point. The protoplasm was somewhat granular and small droplets of fat were found in

the cells about the central veins and in the portal spaces. This fat was only slightly in excess of that in the controls.

The kidneys were of normal size, capsule not adherent, cortex not thickened, markings distinct. Microscopically the cells of the tubules were well preserved throughout; their outlines were distinct, the nuclei staining sharply, the protoplasm granular, the tubules containing in some places some granular material. Fat globules were present in a few of the straight tubules and in the lining cells. This condition seemed no more than is normally found and no more marked than in the controls taken. The condition is well shown in Figure 11.

No pathologic changes could be found in any of the sections of pancreas and spleen. These facts seem to demonstrate that in animals, at least, ether produces practically little effect on the liver and kidney as compared with the very marked changes in these organs produced by chloroform, and, while it may be argued that this comparison has been demonstrated only in animals, the similarity between the lesions of delayed chloroform poisoning in man and chloroform anesthesia in animals makes it appear more than probable that reasoning as to the effect of ether on the liver and kidney of man, from the lesions produced by ether in animals, is entirely justified.

Impressed with the above facts, one of us in his service at the Sloane Maternity Hospital has abandoned entirely the use of chloroform during the past year, in all cases of toxemia of pregnancy or eclampsia, either for operative procedure or for the control of convulsions, and has employed ether in these conditions whenever an anesthetic was required.

During this period, aside from numerous cases of toxemia, there have been 20 cases of true eclampsia, *i. e.*, toxemia with convulsions varying in number from one to thirty-one. In the treatment of these patients no attempt has been made to control the convulsions by means of the anesthetic. This end has been sought through lowering the blood-pressure and quieting the nervous system by the use of veratrum, chloral and nitroglycerin. Ether has been used whenever an anesthetic has been required during the delivery. Former experiences with attempts to control the convulsions by chloroform proved that it was practically impossible. Recent experiences without attempts to control the convulsions by an anesthetic have given results which compare favorably with those of former methods. Of these twenty patients only one died, and she was practically moribund when brought to the hospital, with jaundice, vomiting, scanty and bloody urine and with the liver necrotic. This gives a mortality of 5 per cent. In the last twenty cases of eclampsia in which chloroform was used there were five deaths, a mortality of 25 per cent.

In a series of 20,000 deliveries previous to this last year there were 251 cases of eclampsia, with a mortality of 71, *i. e.*, 28 per cent.

It may be asked whether or not the twenty patients in the recent series were as seriously ill as those of the previous series. Not only did it seem to us that they were as seriously ill at the beginning of treatment, one of the nineteen who recovered having thirty-one convulsions, but it also seemed that others having toxemia were perhaps spared eclamptic seizures by the avoidance of the use of chloroform in this condition. It is freely admitted that a series of only twenty cases of eclampsia is a small number from which to draw positive conclusions, but the marked effect of chloroform on the organs

usually involved in eclampsia and the slight effect of ether on these organs makes the use of chloroform in this condition seem irrational and the use of ether rational.

For the loan of the specimens from which the photographs of Figures 7, 8 and 9 were taken we are indebted to Dr. John Howland of New York.

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THE ETIOLOGY OF ECLAMPSIA *

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ECLAMPSIA A DISTINCT DISEASE

The most recent conception of eclampsia is that it is the culmination of toxemia of varied origin. Its crises are manifested by convulsions; explosions of pain, cerebral or substernal; gastric and intestinal irritation; blood or blood-vessel dyscrasia, producing pernicious anemia and hemorrhages, retinal, of mucous membranes, retroplacental, cerebral or general; or as an acute degenerative process of the liver or other organs. We wish to develop this idea to prove that eclampsia is a distinct disease, with a definite pathologic picture, that at times convulsions prove the constant feature, but not invariably so.

We may have eclampsia with a typical picture without convulsions. In such cases the eclamptic seizure is manifested (1) by a headache of agonizing, blinding type, in which the patient may become unconscious from the pain; or (2) perhaps as a burning substernal pain, which is, in our experience, an almost constant feature of the preeclamptic stage, and may also accompany the convulsive type; (3) as a form of blood disintegration in which the poison may produce an anemia, as marked as pernicious anemia, and giving the same blood picture and physical signs, perhaps somewhat more rapid in its course; (4) as an irritant poison to the blood-vessels, as well as to the blood, a condition in which the blood contains various unformed principles or such an excess of normal principles as to produce irritation and even disease and disintegration of blood-vessel walls, which conditions result in sharp hemorrhage from any of the mucous membranes, from the placental site either before or especially after delivery, and into the retina or brain substances; and (5) as a type of acute degeneration of liver substance, simulating acute yellow atrophy; under such conditions other organs may also share in the degenerative process, but not so markedly as the liver.

We then believe that any one of the foregoing conditions may exist as a type of eclamptic seizure, that such patients may have associated with these other types the convulsive effort also, but that a certain percentage of them may become unconscious and die from these causes without at any time having convulsions, and would then have died of eclampsia.

THE TOXEMIA OF PREGNANCY

Any inquiry into the etiology of eclampsia includes a study of the toxemia of pregnancy, particularly that developing after the twelfth to sixteenth week of gestation.

As a constant factor in all forms of eclampsia is found some form of toxemia of longer or shorter duration. This must be thoroughly understood in order to grasp the cause of the disease.

We have been called to see a private patient whom we had not known to be either pregnant or ill and found her in the last efforts of a severe and overwhelming convulsion from which she died in less than twenty minutes. This patient had been talking cheerfully to her mother within the hour, had walked up stairs to her room and on hearing her fall the family sent for a physician. On inquiry we found that she was about four and a half months pregnant, that she was excessively constipated and had had a severe headache the evening previously. This was a toxemia of severe grade and of short duration, but nevertheless, a toxemia.

Toxemia as an intermediary step between the ultimate cause and the critical manifestation, is the result of some acute or chronic disturbance of a vital organ, either excretory or secretory. Such disturbance may be purely functional or may be constant, the latter as the result of permanent pathologic changes. Toxemia may be classified from the organ showing the greatest amount of disturbance as gastro-intestinal, hepatic, nephritic, thyroid or parathyroid, placental and fetal.

Whether this disturbance is due to the fact that some perverted metabolism in that particular organ is a primary cause for the toxemia remains to be proven. The study of the pathology and the chemistry of the pathology of these organs and their secretions or excretions, however, must give us further light on the ultimate cause. In succession studies were made of the sulphates, creatinin, the chlorids, lactic acid, acetone bodies, indican, urea and of the nitrogenous principles, in order to discover a chemical cause or defect in metabolism evidenced by some chemical changes in excretions, our inability to study thoroughly all of the excretions being the handicap in this direction. With the exception of urea and the protein principles, these studies and theories have thrown little, if any, light on the etiology.

The work of Zweifel,¹ Ewing and Wolf,² Williams and others has, however, in the past few years fixed firmly some facts in regard to the nitrogenous excretion in the urine of utmost value in the study of eclampsia.

By tracing the nitrogen in the urine back to its source it was found that the normal excretion in health according to Folin, is as follows:

Total N in 24 hours.....	15.8 gm.
Urea	N 87.7 per cent.
Ammonia	N 3.3 per cent.
Creatinin	N 2.7 per cent.
Uric Acid	N 0.7 per cent.
Purin Bodies	N 0.7 per cent.
Undetermined	N 5.6 per cent.

It was found that in eclamptic patients the urea nitrogen is persistently lowered sometimes even to below 50 per cent. of the total, while usually the ammonia nitrogen is above normal, although it may be below. But as a constant factor the undetermined nitrogen is high, taking up much of the lowered urea content.

From these variations we deduce the fact that somewhere in the organism there is a deficient changing of ammonia and amino-acids into urea. This has been called "deficient desamidation" by Ewing, who asserts

1. Zweifel: Arch. f. Gynäk., 1904, lxxii, 1905, lxxvi; Zentralbl. f. Gynäk., 1909, No. 26.

2. Ewing and Wolf: Jour. Med. Sc., May, 1906; Am. Jour. Obst., March, 1907.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

that the process is more than an oxidation. This work is in a great measure performed by the liver, and therefore we are not surprised to find the liver most severely involved. We should be misled however, if we considered any condition of the liver as a primary cause, for the process of "desamidation" is complex, so complex that no one organ can be responsible.

Though we are forced to admit that these studies give no definite light as to the etiology of eclampsia, yet they have proved of value in treatment and in prognosis. We have found that in those cases in which the nitrogen ratio was disturbed the greater liver involvement occurred, producing the most severe eclampsia and usually at some time, unless corrected, ending in convulsions.

Studies have also been pursued along the line of thyroid secretion. We know that normally during pregnancy the thyroid is enlarged, and its function evidently increased, and from a purely theoretical standpoint we were led to suppose that in this internal secretion was found something to help the blood and body organism combat syncytial invasion. In a certain type of cases manifested by a high grade of toxemia we find hemorrhages from the mucous membrane of the bowel, stomach and mouth and an anemia showing marked blood disintegration and leading finally to eclampsia and perhaps death of the fetus. We have found that the careful administration of thyroid extract in small doses throughout the pregnancy has in future pregnancies after several disasters produced healthy children and that the mothers are even able to nurse the babies. In this type of cases also, the nitrogen partition is markedly altered, the alteration pursuing the same general type of eclamptic urine.

In past years the kidneys were blamed for much of this trouble. We now know that the cases are few in which the breakdown of the kidney in any way acts as a primary factor. The kidneys are secondarily involved in nearly all of the cases, but they may not be so even in the course of the most severe eclampsia. When the kidneys are the primary cause, we usually find widespread arterial changes and albumin and casts in the urine. There may or may not be a change in the nitrogen ratio. And we believe that such a change of undetermined nitrogen is, under these circumstances evidence of the present status of liver involvement over and above the kidney disease. The crisis of this type may assume the form of general severe hemorrhages.

There then remains the placenta and fetus to which we can ascribe a primary cause. Eclampsia occurs only in pregnancy and is a disease developing invariably after the time of placental formation. So we find in the past few years that the papers written on placental or syncytial cause of eclampsia are legion. From an exhaustive study of these theories we believe that no one has been proved, the most plausible being that based on the work of Bergell and Liepmann³ (1905) and Savare⁴ (1907) on the ferments, and the papers of Dryfuss,⁵ Mathes,⁶ etc., on autolysis. The normal placenta is rich in ferments.

1. Those acting on carbohydrates.
2. Glycolytic ferments (a question).
3. Proteolytic ferments.
4. Blood-coagulating ferments (Savare).

Any perversion of these useful ferments produces widespread disaster, namely, multiple hemorrhage and changes in the entire placental functions causing, by the retention in the mother's body of unchanged principles, an excess in her blood of principles normally changed into innocuous food for the fetus, and even autolysis of the placenta itself. When we ask, however, what causes the perversion of these normal ferments, we find no answer.

Let us quote from Holland's⁷ summary of these theories:

From the foregoing account, it is obvious that, during the past six years, a number of valuable facts as to the etiology of eclampsia have been discovered. It is equally obvious that a number of worthless theories have been propounded, many of which have been disproved, but which, nevertheless, have served the good purpose of paving the way for better work. As far as it is possible to draw conclusions, the following are suggested:

1. There is no special eclamptic toxin.
2. Chemical discoveries have shown that eclampsia is an auto-intoxication, in which a profound disturbance of protein metabolism plays a chief part, the nature of which now rests on a firm basis.
3. The chief toxic substances are the products of the disintegration of protein.
4. In eclampsia, intracellular ferments, especially proteolytic, are raised in activity throughout the body, causing autolysis of cells and production of the above toxic substances.
5. The primary cause of eclampsia is to be sought in the placenta.
6. As regards the connection of the placenta with eclampsia:
 - I. The "specific placental theory" of Veit⁸ must be considered dead; the various specific placental reactions (syncytiolysis, precipitins, etc.), whether produced naturally or experimentally in animals, do not exist.
 - II. Placental extracts possess no special toxicity for animals, beyond causing coagulation of the blood and death from extensive thrombosis.
 - III. The eclamptic placenta has no special toxicity.
 - IV. The intracellular ferments of the placenta are increased in activity in eclampsia. In the light of present knowledge, the most probable theory of the cause of eclampsia is an intoxication of the body by the passage of ferments and autolytic products from the placenta into the circulation, the principal effect of which is increased coagulability of the blood and the activation of autolytic ferments in other parts of the body.

THE PATHOLOGY OF ECLAMPSIA

In the study of the effects of eclamptic toxins on the different organs, we find that so definite are the changes that a diagnosis can now be made post mortem without the clinical history. There are usually edema and hemorrhages in the brain. The kidneys show, in over 95 per cent. of cases, active degeneration of the parenchyma, principally the epithelium of the convoluted tubules. Even in severe cases, however, the changes may be slight. The heart shows cloudy swelling and fatty degeneration, perhaps hemorrhages and necrosis. There may be general thrombosis and hemorrhages into other organs.

We are principally concerned with the picture in the liver. The best work in this has been reported by Konstantinowitsch,⁹ who asserts that the diagnosis may be made from the liver alone. This is a progressive change which first manifests itself by a degeneration of liver

3. Bergell and Liepmann: München. med. Wchnschr., 1905, No. 46.

4. Savare: Zur Kenntnis der Fermente der Placenta, Beitr. z. chem. Physiol. u. Path. (Hofmeister), ix, 141.

5. Dryfuss: Chemische Untersuchungen über die Aetiologie der Eklampsie, Biochem. Ztschr., 1908, vii.

6. Mathes: Ueber Autolyse der Placenta, Zentraltl. f. Gynäk., 1901, No. 51.

7. Jour. Obst. and Gynec. Brit. Emp., December, 1909, p. 398.

8. Veit and Scholten: Syncytiolyse und Hämolysse, Ztschr. f. Geburtsh. u. Gynäk., xlix; Zur placentaren Theorie der Eklampsie Aetiologie, Arch. f. Gynäk., lxxxvii; Ueber die Aetiologie der Eklampsie, Ztschr. f. Gynäk., l.

9. Konstantinowitsch: Beiträge zur Kenntnis d. Leberveränderungen bei Eklampsie, Beitr. z. Path. Anat. u. z. Allg. Path. (Ziegler), xl.

cells in the portal spaces at the periphery of the lobule, by fibrin formation and by hemorrhages, then by necrosis and extension of the process to larger areas of liver cells progressively toward the center of lobule from the periphery.

METHODS OF DIAGNOSIS

We should leave this review unfinished should we omit the methods by which we make a diagnosis of toxemia and eclampsia. Normal physiologic pregnancy is not an uncomfortable process. The deviations may begin with a slight lassitude, even hebetude, stupor and coma, or again, with melancholia, or even mania, which are all manifestations of toxemia. Usually there are progressive headache, disturbance of the stomach, disturbance of vision and constipation. The skin is dry and harsh, the lips cracked, the mucous membranes of mouth parched and dry without fever. There may be swelling of the ankles, emaciation, or perhaps a general puffiness of the skin over the entire body or only over the ankles, hands or face; there may be epigastric or substernal pain, perhaps an exaggeration of some latent nervous phenomena, as for example chorea or insomnia.

In preeclamptic toxemia and in eclampsia the blood-pressure is usually higher than normal for that patient, ranging from 170 to 180 or even 200 mm. of mercury. In the severer forms this persists, in spite of treatment, and tends to grow more marked, until convulsions or some other crisis appears. A study of the blood-pressure record should be part of the routine investigation of every pregnant patient early in the pregnancy or better still when not pregnant, a record of the patient's normal pressure should be secured; should the patient become toxic, one of the earliest signs of toxicity is this increased blood-vessel tension.

Since the first point noticed about the urinary findings is that there is usually a markedly decreased total daily output, we would urge increased study of this point in all pregnant patients. At times the only defect may be the lowered total daily output of an apparently normal urine. The specific gravity varies, in the inverse ratio to the quantity excreted. The next point noted is the progressive decrease in the daily output of solids. This may be studied approximately by investigating the total output of urea. We have found, however, that, up to the present time, the most definite indication of any toxic disturbance, earlier than can be secured by any other method, is found in a study of the partition of the different forms of nitrogen found in the urine. Earlier in the paper we gave the normal ratio. The average daily output varies in pregnancy from 10 to 20 gm. per day of nitrogen excreted. It seems to be not so much the lowered output of total nitrogen within a certain range, as the definite change in the relations of the different forms. A lowering of the urea nitrogen, an increase of undetermined nitrogen, and some change in the ammonia nitrogen shows a beginning toxemia. With the tendency for these changes to persist or grow worse, we find evidence of oncoming eclampsia. Albumin is present in the advanced stages of the disease. It is entirely misleading, however, to base the diagnosis entirely on albumin, since very often it is not present in severe grades of toxemia. The presence of sugar, of acetone bodies, of an excess of indican or of peptone is an indication of faulty metabolism requiring careful watching. The presence of granular epithelial or fatty casts is positive evidence of kidney breakdown.

An early examination of the retina is of importance in all toxic cases. We recall several patients who came to us, because some defect in vision led to an eye-ground examination and the advice from the ophthalmologist to seek relief for a kidney condition. The findings are those of arterial degeneration of the retinal vessels and hemorrhages into the substance of the retina.

A careful examination of the blood of toxic patients proves of some value. In preeclamptic toxemia and in eclampsia we find a reduction of the hemoglobin and red cells with a moderate leukocytosis, the latter, on making a differential count, showing little variation from the normal.

SUMMARY

Those ideas which will prove of value from this study are as follows:

1. Eclampsia is a distinct disease with varied manifestations and a definite pathologic picture.
2. There is some relation between the fact that an altered nitrogen ratio is found in the excretions and the fact that the liver is the organ most seriously involved.
3. A study of this progressive nitrogen disturbance may prove a guide as to the point beyond which the liver involvement cannot go and allow regeneration and recovery.
4. While no placental theory has yet been proved, the most plausible theory is that some ferment from the placenta may prove responsible as a primary cause for the condition because of deficient or deranged action.
5. Any preexisting permanent pathologic condition may prove an exciting cause and still perhaps act by disturbing placental function.
6. Eclampsia should be a rare condition in the hands of a skilful, thorough investigator.

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THE SURGICAL TREATMENT OF ECLAMPSIA*

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There seems, at this time, to be hardly any question but that women suffering from eclampsia do better if the uterus is emptied promptly on the appearance of convulsions. Carl Braun emphasized the fact that the convulsions ceased or became less severe after delivery. Dührssen showed that in 93.75 per cent., and Olshausen that in 85 per cent. such a result followed. Seitz, in a very large collection of statistics, proves it conclusively. If further proof were needed, Winter brought it, in 1909, at the congress in Budapest, where he showed that of twenty patients delivered before they had had six convulsions not one died, and in thirty-two cases, only three women were lost, while by a waiting policy, the mortalities were much greater, as follows:

Eclamptics treated expectantly with spontaneous labor, 8; mortality, 40 per cent.

Eclamptics, with expectancy till os was fully dilated, 19; mortality, 30 per cent.

Eclamptics, with mild measures used for hastening labor, (metreuryesis, incisions, etc.), 32; mortality, 25 per cent.

Eclamptics with vaginal Cesarean section, 34; mortality, 9 per cent.

Eclamptics with vaginal Cesarean section immediately after first attack, 22; mortality, 0 per cent.

Bossi dilator used, number not given; mortality, 36 per cent.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

In the discussion which followed, Bossi reported 395 cases in which his instrument had been employed with a death-rate of only 9.45 per cent. In the Berlin Charité during the years from 1904 to 1909 the mortality of the cases delivered within the first six hours was only 3.8 per cent.

THE OLD AND THE NEW VIEWS

I have always taken a skeptical stand as to the usefulness of statistics and usually discard them unless they cover a long period of time and comprise very large numbers. The individual opinion of those competent to judge is much more valuable. There seems to be a trend of the formerly most conservative obstetricians, toward a more and more early operative delivery. Jaggard taught the expectant or medical treatment and this, therefore, was my own practice for many years, but added experience has convinced me that the women do better if the uterus is emptied at once. The convulsions cease more often, or grow less violent, and at longer intervals, consciousness returns earlier and convalescence is sooner established. While no special record has been kept, it seems to me that the pathologic findings in the urine disappear earlier than with older methods of treatment. One of the strongest arguments for early delivery is the immense improvement of the child's chances for life, various statistics showing that twice, and even three times as many children are saved by early delivery. Much depends on the time in pregnancy of the outbreak of the convulsions and on the method of delivery.

THE PROBLEM TO BE MET

Since it is the best policy to empty the uterus early, a discussion of the treatment of eclampsia before delivery resolves itself into the consideration of the methods to be employed in individual cases. Since removal of the child is opposed mainly by the soft parts, the subject of treatment is narrowed down to a discussion of how best to prepare a way for the child through the cervix and vulva. The method of effecting delivery depends on the period of pregnancy, the environment of the patient, the state of the cervix, the skill of the operator, and the extraneous complications such as contracted pelvis, placenta prævia, heart disease, infection, etc.

Before the seventh month, the fetus always dies, either during or soon after delivery, and it is, therefore, necessary only to obtain sufficient dilatation of the cervix for the performance of craniotomy and extraction. After the period of viability, one must try to save the infant also.

If the patient is in a well-equipped maternity hospital and a man capable of his task is at hand, immediate delivery is practiced, overcoming by operation, the resistance of the cervix and perineum. If the patient is in a private house, and the obstetrician is without skilled assistance, reliance must be placed on medical treatment and on less active surgical measures. Here, puncture of the membranes, the use of the colpeurynter, and, when the cervix is almost completely dilated, manual dilatation of the balance, with episiotomy and forceps delivery or version and extraction depending on the conditions.

THE CONDITION OF THE CERVIX

The state of the cervix is the all-governing condition so far as the choice of method of rapid delivery is concerned. If the cervix is fully dilated, or effaced and the os has a diameter of 8 cm. (about 3 in.) delivery may safely be effected at once by forceps if the head

is engaged, by version and extraction if the head is movable above the inlet. In primiparæ, I prefer to force the head down into the pelvis and then apply forceps rather than do a version.

If the cervix is effaced, that is, shortened, or taken up, or obliterated, but the os not sufficiently dilated, one may easily procure sufficient enlargement of the opening by manual dilatation, or stretching the os by means of one of the mechanical dilators about which there was such a furore several years ago. Hydrostatic bags may also be used for this purpose or the thin partition between the uterus and the vagina may be incised. —Dührssen's incisions. Manual dilatation is the method of choice in this particular class of cases, then episiotomy (in primiparæ) to overcome the resistance of the perineum, followed by forceps delivery.

The greatest discussion has arisen as to how to deliver in those cases—and they are the most frequently met—in which the cervix is uneffaced, tightly closed, and not admitting even the tip of the finger. Manual dilatation, metreuryesis, Dührssen's incisions, vaginal Cesarean section, abdominal Cesarean section, each has adherents. I have had experience with all these methods and in the following will give my own opinion of each.

MANUAL DILATATION

Manual dilatation of the closed cervix with delivery is an operation, which, in the olden time, was called *accouchement forcé*. It requires from one to three hours and is often painfully tiring to the fingers and hands. It is invariably attended by lacerations of the cervix, and these tears are often deep, sometimes even of the importance of a rupture of the uterus, opening the peritoneal cavity, causing death, from hemorrhage or from sepsis. In multiparæ, the lacerations are usually somewhat less extensive. In all cases, the cervix is bruised and battered, and sepsis, even in the hands of the cleanest obstetrician is sometimes unavoidable.

Philander Harris and a few other authors, take a different view of this operation, but my own experience makes me oppose it, and in this, I am supported by all the German authorities. The latter demand the following prerequisites for the operation:

1. Cervix effaced.
2. Pelvis normal.
3. Child not too large.
4. Normal presentation, position and attitude, or one that can be produced.
5. Dilatable vagina.

In a few cases I found the parts so soft and dilatable that it was possible to stretch the uterus open sufficiently for safe delivery, but these are so rare as to be truly exceptional.

METREURYSIS

By putting a colpeurynter in the lower uterine segment and exerting traction on it, two things are accomplished—uterine action is set up and strengthened and the cervix is mechanically dilated from above downward, the bag acting like a fluid wedge. In cases in which no urgency exists, metreuryesis is the ideal method of opening the uterus, because it imitates most closely the natural process. In favorable cases, that is, soft cervix and large vagina (conditions rarely found in primiparæ) it is possible under anesthesia, to dilate the cervix completely in from one to two hours, but if the cervix is rigid, and tightly closed, an attempt to force it open by means of bags in this time would fail, if it did not

rupture the uterine. Unfortunately rigid cervix is a frequent complication of eclampsia, since this condition is commoner in primiparae and women of advanced years. Contraindications to metreuryesis in eclampsia are, scars of the cervix, abnormal rigidity, complete closure of the cervix in a primipara, edema of the paracervical tissues, local infection, great urgency.

One may, in selected cases, procure partial opening of the womb with the bags, and then complete the dilatation by incisions or the vaginal Cesarean section. A word of warning to those using the bags for cervical dilatation. If too much water is put into them, or too much traction put on the tube, the uterus is stimulated to over-violent action and may rupture. This is especially likely to occur in placenta praevia. I use a large Voorhees bag in preference to all others.

INSTRUMENTAL DILATORS

Bossi introduced his branched dilator in 1887, but it received no general recognition until 1898 when Leopold, of Dresden, reported seventeen cases of eclampsia treated with it. It was then very extensively employed and many modifications of the instrument invented. Bossi used it when the cervix was closed, as did many others. Now, most authors have discarded it, and Bossi, himself, at the Budapest congress, said it should be used only when the cervix is effaced. Bossi reported 395 cases of eclampsia treated by rapid dilatation with a mortality of 9.45 per cent.

In a multipara, with a soft cervix, the instrumental dilator may occasionally accomplish the purpose without laceration or with negligible injuries. In other cases more or less deep tears are inevitable and the frequency of serious injury has relegated the instrument to a very subsidiary place. I would deny its usefulness in the class of cases under consideration and agree with Pfannenstiel that, in the clinic, the dilator is superfluous; in private practice, dangerous.

DÜHRSEN'S INCISIONS

In the class of cases being discussed, the cervical incisions are contraindicated. Only when the cervix is effaced, shortened or fully taken up, when there is but a thin partition between the uterus and the vagina, are such incisions justifiable. Before this time, the large blood-vessels have not yet been retracted upward out of reach of the cut, the peritoneum has not been pulled up, the connective tissue of the broad ligaments is still in the pelvis. If one cuts the thick cervix now, there is danger of severe, perhaps uncontrollable hemorrhage. The incision is easily torn into the peritoneal cavity, and further, the attempt to draw the fetus through the pelvis will disrupt the whole connective tissue framework of the pelvis. Dührssen's incisions are also contraindicated if the child is large or presents abnormally.

VAGINAL CESAREAN SECTION

As was indicated at the beginning of this paper, this operation has given the best results of any yet obtained, especially when it is performed immediately after the first convulsion. It is considered by Dr. H. D. Fry in one of the papers of this symposium.

ABDOMINAL CESAREAN SECTION

This operation, proposed by Halbertsma in 1889, has not obtained the recognition it deserves. The statistics collected showing 30 to 60 per cent. maternal mortality, surely give too dark a picture, for it must be remem-

bered that only the worst cases are submitted to the operation. Newell condemns the section, but Olshausen recommends it. It saves more infants than any other method of delivery, and is to be preferred when these complications coexist: contracted pelvis, placenta praevia, marked edema of the vulva, vagina and parametrium, scars or extreme rigidity of the cervix and perineum, unusual brittleness of the cervix, enormous varicosities of the genitals, large child, abnormal presentation. In the latter cases, the vaginal section often meets with insurmountable difficulties. A less skillful operator may be able to do the classical section when he would hesitate to operate from below.

With the extra-peritoneal Cesarean section, a resurrection of the laparo-elytrotomy of the last century. I have had no experience, but am inclined to believe that the advantages claimed for it are somewhat overdrawn. The technic is more difficult than that of the classical section; hemorrhage from the incision is sometimes dangerous; the Trendelenburg posture is needed and this increases the danger of air embolism and cerebral thrombosis already exaggerated in eclampsia; extraction of the child is harder and is oftener fatal to the infant; in 21 per cent. of the 65 cases reported by Pfannenstiel, Latzko and Fraipont the peritoneal cavity was opened, and in three, the bladder was injured; sometimes the bladder cannot be safely removed from the uterus and the transperitoneal route must be taken; the labor must have progressed till the uterus has drawn the peritoneum upward and unfolded the anterior plica—this is impossible in eclampsia, which demands instant delivery; the danger of infection of the immense connective tissue spaces is probably as great as that of the peritoneum, at least suppuration has been frequently reported (Rubeska, Franz), and hernia is just as possible, Franz having already found one with the bladder and another with the cervix in it; the danger of rupture of the uterus in subsequent labor is greater than with the classic operation because the scar is in the thinned dilated portion, and further, a second Cesarean section would be very difficult through the scarred cavity of Retzius; Latzko collected 137 cases which showed a maternal mortality of 7.3 per cent., while this is considered a high figure for the classical section.

Subjects of kidney and liver disease are generally considered poor subjects for laparotomy, and the danger comes mainly from the anesthetic. By means of nitrous oxid and oxygen anesthesia, this element may be reduced to an almost negligible minimum. Given a primipara, at or near term, with a long closed cervix and living child, the patient being in a good maternity hospital, I would strongly incline to abdominal Cesarean section.

RIGIDITY OF VAGINA AND PELVIC FLOOR

In the discussion of operative delivery, the resistance opposed by the cervix only has been mentioned, but the vagina and pelvic floor must by all means be considered. Rigidity of these structures is one of the strongest arguments against vaginal Cesarean section, because even if we do the deep perineotomy advised by Dührssen, it is not always possible to avoid extensive lacerations of the vagina, the pelvic floor, the perineum, the anus and the bases of the broad ligaments.

In performing episiotomy, one should not be afraid of cutting deeply into the levator ani muscle, because this can be accurately sutured, whereas, if brute force in delivery is used, the muscle may be torn from the bony attachments—an irremediable injury. Where only

slightly more room is needed, this may be obtained by stretching the muscle with the fingers or fist, but I have seen deep lacerations of the parts produced thus as well as by the head. I recommend the medio-lateral episiotomy and am not sparing with the incision.

A strong distinction must be made between hospital cases with an obstetric surgeon in charge and private practice by a general practitioner. For the latter, slower methods of treatment are to be recommended, first rupture of the membranes, then hastening the delivery as much as is safe, by metreuryesis, manual dilatation, and, when the cervix is thoroughly effaced, incisions if necessary.

SURGICAL MEASURES

Venesection is a surgical procedure, but will probably be spoken of under the heading "medical measures," as also will saline solution administered hypodermically. Care should be taken with the dosage of saline solution, as edema of the lungs may be superinduced. Newell in one case transfused human blood.

Of the surgical measures special mention is to be made of decapsulation of the kidneys, first proposed by Edebohls. Chirié, in June, 1909, collected thirty-three cases of renal decapsulation, and finds that in only one-half of the patients do the convulsions cease after the operation, but many authors note that they are less severe. Unanimous accord exists regarding the postoperative diuresis—the amount of urine almost always increases, and there is decrease of the albumin casts, etc., and augmentation of the urea and solids. The edema subsides rapidly and consciousness returns quicker. The wounds heal well if due attention is paid to asepsis, but several instances are noted of suppuration due to dislocation of the dressings during convulsions and restlessness—one fatal case of infection and one fatal case of iodoform poisoning from gauze used in packing. In the one case in which I was consulted, the convulsions ceased, diuresis improved, but the woman died in coma three days after operation. It is impossible at the present time to pass judgment on this procedure, and also on the advisability of nephrotomy in addition to decapsulation. Sippel and a few German authors perform and recommend it. It is occasionally done in England and America. It has not had a fair trial since only cases that prove refractory to all other methods are submitted. Considering what we know of the causation of eclampsia, the operation is not rational, but it is perhaps as reasonable as any one of our other "specific" remedies. Chirié, in his thirty-three cases, found sixteen deaths, which is not encouraging. The literature will be found in Chirié's article, *Obstétrique*, June, 1909, and in the *Edinburgh Medical Journal*, May, 1909. Johnsen, in the *Deutsche medizinische Wochenschrift*, January, 1910, says that forty-two cases are on record with eighteen deaths. The general mortality of eclampsia is not as high as this.

ANESTHETICS

Early in my practice I learned two facts: one, that morphin given to eclamptics killed many of the babies and prolonged the postpartum coma, and the other, that chloroform is a very dangerous drug in eclampsia. It causes acute yellow atrophy of the liver and cardiac paralysis, acute and chronic. Whereas, I formerly advised anesthesia for every vaginal examination or manipulation to prevent a convulsion resulting from the local irritation, I now restrict anesthetics and narcotics to an irreducible minimum. For the operative delivery, I have used ether, but for Cesarean section I

employ nitrous oxid and oxygen, because the child is delivered so rapidly that the preliminary asphyxia is of no moment. Cragin and Ewing also have emphasized the dangers of chloroform.

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VAGINAL CESAREAN SECTION *

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The history of vaginal Cesarean section is recorded in the last decade of obstetric literature. To Dührssen belongs the credit of having introduced the operation to the notice of the profession, while he and his German confrères have done much to elucidate the indications and technic of the operation. The result secured by them in the treatment of eclampsia by vaginal Cesarean section has reduced the maternal death-rate to a lower figure than that obtained by any other line of treatment. Fully nine-tenths of the literature on the subject is published in the German language. The United States comes second. A few articles are found in the French, Spanish and Italian languages.

In 1903 J. M. M. Kerr¹ published a report of a case of vaginal Cesarean section. Impressed with the value of the operation in the treatment of eclampsia, N. T. Brewis determined to employ the method in the next suitable case, and three years later reported to the same society six operations.

NOT IN GENERAL FAVOR

Stamm, of Fremont, Ohio, was the first to bring it to the attention of the profession in this country. Since then papers have been published by sixteen authors in the United States, who, with one or two exceptions, have endorsed the operation and recognized its value. In the discussions that have occurred on these various papers in our medical societies the general tone of debate has been against the operation. As a rule one will notice that the objections are based on theoretical grounds and the objectors have had little or no experience with the operation. In spite of opposition, however, favorable reports continue to appear and new advocates of the operation recognize and advise its performance. Palmer Findley prophesies that it will remain in general favor with only a few obstetricians and that, in the light of reported cases, the scope of the operation will be limited and vaginal Cesarean section will be little practiced.

He compares vaginal Cesarean section unfavorably with abdominal Cesarean section in eclampsia, on the ground that the latter is time-saving and the dangers less to the infant. The saving of time is questionable. It may take two or three minutes more to deliver the infant by vaginal Cesarean section, but the completion of the operation can usually be accomplished as soon as or more quickly than abdominal Cesarean section. When the mother is suffering from eclampsia the infant is already toxemic and generally is born dead, or dies soon after delivery. The difference of a few minutes in favor of delivery by abdominal Cesarean section will change the result for the infant too little to counterbalance the increased maternal mortality of the latter operation. The shock of abdominal Cesarean section

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Kerr, J. M. M.: Tr. Edinb. Obst. Soc., 1903.

added to the dangers of the operation on toxemic patients will give a higher maternal death-rate than when performed for other indications. Consequently we should not consider the favorable maternal death-rate of abdominal Cesarean section performed for different conditions as applicable to the situation presented when the mother is suffering from eclampsia. Edgar and Hirst quote the statistics of Charpentier for abdominal Cesarean section performed for eclampsia with a maternal mortality of 36.26 per cent. Hillman collected data on 40 operations with a mortality of 50 per cent. for the mothers and 45 per cent. for the infants. Olshansen has a mortality of 33.3 per cent.

INDICATIONS FOR THE OPERATION

The indications for vaginal Cesarean section presupposes a rigid os and undilatable cervix, and it is a valuable operation under the circumstances when the conditions point to the rapid evacuation of the pregnant uterus in the later half of gestation. Exceptionally it may be called for before that period, but it then is performed in the interest of the mother alone. The prompt termination of pregnancy may be required in the interest of the mother, or of the infant, or of both. The life of the unborn infant is so dependent on the welfare of the mother that disease compromising her life is liable to destroy the former. When toxemia has reached a degree that endangers the mother's life the same intoxication threatens to destroy the infant; when the loss of blood from accidental hemorrhage, or when advanced organic disease of the heart, with failure of compensation, threatens the life of the mother primarily it jeopardizes that of the offspring secondarily. Labor complicated by an undilatable condition of the os and cervix, physiologic or pathologic, endangers the infant primarily and the mother secondarily. Labor complicated by prolapse of the funis through a cervical canal unprepared for prompt dilatation compromises the safety of the infant and not that of the mother.

The indications under consideration for the employment of vaginal Cesarean section are restricted to its use in the treatment of eclampsia. These indications are viewed from the standpoint of the obstetrician and of the obstetric surgeon. Two years ago I read a paper in Chicago, before this Section of the American Medical Association, in which I presented my reasons for advocating prompt delivery in the treatment of eclampsia. This phase of the subject is presented to you to-day by other participants in the symposium, so my line of thought will take up for consideration the indications for vaginal Cesarean section from the standpoint of the obstetric surgeon.

To accomplish rapid evacuation of the pregnant uterus in the latter months, or at the expiration, of gestation we must recognize two important, cardinal steps in the operation: first, the dilatation of the cervix; second, the delivery of the infant.

The methods of delivery of the infant, whether by forceps or version, belong to the domain of the obstetrician. The consideration of the indications for vaginal Cesarean section from the standpoint of the obstetric surgeon presupposes that we have to deal with an intact and undilatable cervix. The cases are represented usually by primiparae in the latter months of pregnancy and constitute that difficult class of patients in whom the obstetrician recognizes the complications to be met in the quick artificial dilatation of the cervix. Before considering artificial methods of rapid dilatation let us study briefly the natural method.

NATURAL METHOD OF CERVICAL DILATATION

Nature has one way to accomplish this purpose, and it is not done rapidly, but slowly, gradually, gently and without danger to the integrity of the soft parts. The intermittent force of the uterine contractions drives the bag of water against the point of least resistance, the center of the lower segment of the uterus represented by the internal os. Hydrostatic pressure from above, aided by the antagonistic action of the uterosacral and uterovesical ligaments, exerted antero-posteriorly, constitute the dilating mechanical forces.

Physiologic changes of great importance are the progressive thinning of the lower segment and the softening and dilatability of the tissues produced by engorgement of the pelvic blood-vessels and the transudation of serum between the muscular fibers of the lower segment of the uterus and cervix. As resistance to the dilating forces is diminished the internal os opens wider; the cervix is effaced; the external os is dilated, and finally the canalization of the cervix is completed. Dilatation begins by obliteration of the canal from above downward. A funnel-shaped depression beginning at the site of the internal os increases in diameter and depth until the cervix has disappeared and the uterine cavity is separated from the vagina only by the external os.

ARTIFICIAL METHODS OF CERVICAL DILATATION

No method of artificial dilatation can be instituted that will meet the conditions mentioned in the natural method. Formerly manual dilatation was the only resource of the obstetrician and the result could not be accomplished by this method gradually, gently and without danger to the integrity of the soft parts. The very first requirement *viz.*, that of quick dilatation in the treatment of eclampsia is contrary to the laws of Nature; but these must be sacrificed. Dilatation by the manual method cannot be accomplished quickly in these cases, as its advocates admit that from forty minutes to an hour or longer is necessary to accomplish the purpose.

The Bossi dilator was introduced because the force obtained by the hand was insufficient. By the aid of this powerful instrumental dilator time is saved and the canal is quickly opened. Not only is the integrity of the soft parts endangered by the forcible manual or instrumental dilatation of unprepared tissue, but the life of the eclamptic patient is further jeopardized. The unfavorable results of *accouchement forcé* in the treatment of eclampsia are largely due to the aggravation of the disease by the reflex influence of forcible stretching of the cervix.

We must admit that every effort to effect quick dilatation and the termination of pregnancy opposes the laws of Nature. But disease is opposition to those laws and we must fight eclampsia by illegitimate means. These means are, first, the termination of pregnancy which is furnishing the source of the toxemia; second, the rapid dilatation of the cervical canal; third, the rapid extraction of the infant. The prompt termination of the first stage of labor is the principal difficulty to be overcome, and we have seen that manual and instrumental dilatation are objectionable.

How then can we quickly dilate an intact, unprepared cervix without subjecting the patient to the injurious influences of forced mechanical stretching? Manual and instrumental dilatation will not accomplish that result. Vaginal Cesarean section fulfils the indications better than any other method. The unprepared

tissues are cut and the wound opened without danger to the integrity of the soft parts. The cervical canal is dilated without forcible stretching and the eclamptic patient is saved from injurious reflex disturbances. A clean-cut surgical wound is left to be repaired instead of bruised and torn tissues.

THE VALUE OF VAGINAL CESAREAN SECTION

The objections to the operation are based on faulty technic and may be overcome. Sepsis, injury to the bladder, opening the peritoneal cavity anteriorly or posteriorly, extension of the incision by tearing, and hemorrhage cannot be placed to the discredit of the operation, but to that of the operator. The danger of infection is no greater in this operation than in any other performed on the birth canal of the pregnant woman, and no greater than that encountered in forcible manual and instrumental dilatation.

Injury to the bladder can be avoided by careful separation of the organ from the cervix. The connective tissue binding the bladder to the cervix is softened and loosely attached during the latter months of pregnancy except in the median line. The closer attachment in the median line is the uterovesical ligament. By cutting this central attachment and carefully working beneath the tissue and close to the cervix, danger of injury to the viscus is obviated.

Opening the peritoneal cavity in front or behind can result only from the careless extension of the incision beyond the needs of the case. Extension of the incision by tearing is due to one of two causes: either the incision is not carried up through the internal os and the wound opened sufficiently before delivery by forceps or version, or the extraction of a large infant at or about full term with only the anterior incision of the cervix, which alone is sufficient in premature cases.

Very little hemorrhage follows the separation of the bladder and still less from the incisions of the cervical tissue. Post-partum hemorrhage is prevented or controlled by the hot sterile douche and gauze tamponade of the uterine cavity. I have experienced one complication of the operation not heretofore mentioned. I performed vaginal Cesarean section on a primipara at the thirty-fourth week of gestation. Active treatment for pre-eclamptic toxemia had been instituted for eight days when the patient was seized with a convulsion. She was immediately removed to the operating-room and vaginal Cesarean section was performed, the anterior incision of the cervix only being required. The infant was born alive and lived three months. The mother remained in coma for ten hours and afterward was making a satisfactory convalescence when, on the seventh day, she had a most severe secondary hemorrhage. A large quantity of coagulated blood was removed from between the bladder and cervix and the cavity irrigated with hot sterile salt solution and packed with gauze. No fever followed and healing of the surfaces was complete. Objections to vaginal Cesarean section on the ground that rupture of the uterus may occur in subsequent labor conjure up an imaginary danger that has never been realized yet.

WHO SHOULD OPERATE?

By whom should vaginal Cesarean section be performed? I am led to take cognizance of this question because advice has been given that the general practitioner should be familiarized with the technic of the operation and be taught to perform it when necessary.

It goes without saying that no one should attempt the operation without being familiar with the technic, and yet in this day of brilliant surgery the temptation is so great that "fools rush in where angels fear to tread." It needs little or no encouragement to transport the twentieth century physician from his graduating exercises to the operating-room. Men who practice general medicine and use the pen more than the knife are only too prone to undertake all manner of surgical work. I have been informed of four or five instances—and two of them came under my personal knowledge—of men who had attempted the operation and abandoned it because they were not familiar with the procedure. I recognize the fact that throughout the length and breadth of this great land of ours there are many self-reliant men, often indeed pioneers in surgical work, who are practicing the profession in sparsely settled country districts. Necessity makes them surgeons as well as physicians and against such men undertaking vaginal Cesarean section I raise no dissenting voice provided they have surgical skill and know how to do the operation. The difficulties of the operation are not great to any one who is familiar with the anatomy and surgery of the pelvic organs, but it should not be performed by the general practitioner unless he is experienced in surgery, otherwise more lives will be saved and less invalidism result by adhering to the older methods of treating eclampsia.

1909 Q Street, Northwest.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DAVIS AND FOULKROD, CRAGIN AND HULL, FRY, PETERSON AND DE LEE, CONSTITUTING A SYMPOSIUM ON ECLAMPSIA

DR. HENRY SCHWARZ, St. Louis: The report on the changes caused in the liver of dogs by chloroform narcosis is of great interest and will make us hesitate to use chloroform in cases of eclampsia, for fear of lowering the resisting power of our patient. We all agree that we should try to prevent eclampsia rather than to cure it. I am sure that in the case of women who place themselves under medical supervision early in pregnancy, the frequency of eclampsia has been much reduced. A great many women in city and country are delivered by midwives; much would be gained if the medical profession could educate the public so that these women would learn the necessity of placing themselves under medical supervision during pregnancy, even if they continue to be delivered by midwives. Great good would be accomplished if the urine were examined once a month during the first half, and twice a month during the second half of pregnancy. All organs of elimination, the skin, the kidneys and the bowels, should be kept in perfect working order; pregnant women should learn to live on mixed diet. Plenty of vegetables, plenty of fruit, plenty of cereals, little meat and plenty of pure water will do a great deal to prevent eclampsia.

DR. ERNST G. ZINKE, Cincinnati: The pathology of eclampsia has been well presented; but the problem still remains unsolved. It is also a serious question which mode of treatment has contributed most to the reduction of the maternal—and fetal—mortality of this frightful obstetric complication. In my own opinion prophylaxis is of the greatest importance; and intelligent medical treatment, when convulsions supervene, has contributed more to the reduction of the maternal—and fetal—mortality than all the surgical interventions designed for emptying the uterus. In this view I am well supported by authors and practitioners at home and abroad. He who has had years of experience in the practice of obstetrics, will readily admit that many patients with puerperal convulsions have recovered when left alone. In some instances spontaneous delivery has occurred, even with the child living. These cases are not at all isolated. I can portray to you a

picture which I observed in one of the European hospitals nineteen years ago. The impression it made on me has never been obliterated from my mind. This particular patient was left to herself in bed, with only a nurse at her side who saw to it that the patient did not hurt herself as she went from one convulsion into another. The attacks exceeded 100 within three days; and yet, she delivered herself spontaneously and recovered. When I witnessed this performance I thought to myself, that the man who would pursue this mode of treatment of puerperal eclampsia in this country would run the risk of being tarred and feathered. And still it teaches a lesson not to be regarded lightly. Some of you, no doubt, have seen cases of puerperal eclampsia, occurring in the seventh or eighth month, from which the patient recovered, after several seizures, under medical treatment, the pregnancy remaining undisturbed until term, and terminating spontaneously and favorably for both mother and child. This is the other side of the picture, and I merely present it to call attention to the fact, that surgical intervention, though necessary at times, is not the prime factor in the treatment of puerperal eclampsia, and that, if there is a reduction in the mortality of this disease between the present and the past, surgery has contributed little or nothing to it.

DR. J. H. CARSTENS, Detroit: We all admit that we know nothing about convulsions either in children or in adults; that one patient will have one convulsion and die, another will have a hundred and recover, and that another will die after ten or fifteen. We know that with one convulsion the patient may become paralyzed, or may lose one of her senses. We must know that the sooner we stop the convulsion the less liable is the patient to be injured. Now, the fact that my friend from Cincinnati has seen an isolated case in which they left the poor woman for three days and she recovered does not relieve us from the guilt of bad practice when we fold our hands and roll our eyes to heaven and say, "The Lord's will be done." What in the name of heaven are we here for? What is to cure the toxemia? The quickest way is to deliver the woman. Ninety-five per cent. will not have any convulsions after delivery, and those few cases that do occur after delivery simply point to the rule that the convulsion is stopped when the woman is delivered. The quickest method of delivery is the best. If we decide that the method which Dr. Peterson has so beautifully described is the proper one, it is up to everybody to learn that. Every one of us who has had much experience will only be too delighted to show the general practitioner the technique of the operation. We all cut into the bladder once in a while even now with all our experience, and if the poor general practitioner will save that woman's life I will forgive him, if he does the same, for a live woman is better than one that is buried six feet under the ground.

DR. F. J. PLONDKKE, St. Paul: It is true that after delivery in the majority of cases the convulsions cease. There are, however, a certain number of cases in which they continue, and in still others they do not develop until after delivery has taken place. We have heard to-day that, while we do not know the exact nature of the toxins causing puerperal eclampsia, we do know that they are found in, and are distributed by, the blood-current, and that sooner or later they cause irritation of the liver and kidney cells. Taking this for granted the indication for treatment, whether the convulsions develop before or after delivery, are the same; viz., to eliminate as much of the poison as possible, and neutralize, by dilution or otherwise, what remains. I have met these indications in a number of cases during the past two years by opening a vein and inserting a glass cannula in the distal end, through which blood is allowed to flow away; through the same opening, but into the proximal end, another cannula is inserted through which physiologic salt solution is carried into the vein. The amount of blood withdrawn, ranging from 15 to 30 ounces, depending on indications (usually about 10 ounces), was allowed to flow away before the introduction of salt solution was begun; from 1 to 2 quarts of salt solution was used in each case.

I have used this treatment in ten cases; seven puerperal and three of convulsions in chronic nephritis, with the result that in each case the convulsions ceased at once and in no case did they reappear.

I realize that these are only a few cases from which to draw a conclusion, but the results have convinced me that the treatment merits further trial.

DR. T. M. BURNS, Denver: I wish to make a few remarks on the lack of danger in the use of Cesarean section for eclampsia. During the last five months I assisted at one operation and performed the operation nine times. Only two of the operations were for eclampsia, but in both of these we had excellent results. The operation of Cesarean section *per se* is without any shock whatever. The immediate results are perfect. We get a living child and the mother is just as good after the operation as before. The patient gets up in better condition than from any other abdominal operation. Even in the infected cases hysterectomy is unnecessary. Skilled assistants are essential, especially in giving the anesthetic and taking care of the baby.

DR. M. I. ROSENTHAL, Fort Wayne: From the standpoint of the gynecologist this operation presents another advantage which I believe will bear emphasis. Lacerations of the cervix frequently do not amount to anything, are easily repaired and are not of serious significance. A deep laceration laterally in the cervix extending up into the vault of the vagina, making a tear into the broad ligament, is a very serious thing, however. You have formed a fibrous tissue in the broad ligament, and chronic invalidism is produced which you are not able to reach by plastic operation. Such a tear in the broad ligament produces a very serious condition. This operation fixes the trauma in the cervix at a point where it is rather an immaterial affair, so that if it does not heal it can be repaired or left as it is.

DR. C. A. RITTER, Kansas City, Mo.: Among the most important questions requiring attention and demanding a rational answer is, Where, when, and how are we first to detect the danger-signals of eclampsia, and what are the prophylactic measures best calculated to furnish protection to the pregnant woman? In order that the greatest safety may be given her, she should be placed under the care of a physician from the earliest weeks of gestation to the close of the puerperium. It is our duty as physicians to educate the public, showing the necessity of more extended time and attention being given the prospective patient as she travels along the border line between health and disease. By early placing her under the care of an attendant, many of the worst complications of eclampsia may be prevented. We assert that the symptomatology of eclampsia is shot through and through with danger signals of sufficient importance to enable the close observer and intelligent physician to institute prophylactic treatment, and thereby modify or cut short the severity and dangers of the eclamptic storm. As to preventive treatment, diet and elimination, the latter by the way of skin, kidneys and bowels, is of greatest importance. I have received benefits from doses of veratrum, using six to ten drops hypodermatically. In the above dosage, we reduce arterial tension, securing the full physiologic benefits in the way of diuretic, diaphoretic, and antipyretic action. I have had good results in withdrawing from 10 to 20 ounces of blood, replacing the same with similar amount of physiologic saline solution. The choice of operation depends on the character of the individual case. It is impossible to lay down any hard or fast rules. Manual dilatation, with delivery of child by version or forceps extraction, great care being exercised to reduce shock and traumatism to the minimum, is the operation largely employed in the private practice, while vaginal or abdominal Cesarean section is more frequently adopted in hospital work.

DR. C. FOULKROD, Philadelphia: Dr. Carstens spoke of the expectant treatment. We have the records of the Stroganoff method in which the patients are put in a quiet room, the bowels kept open and good results are obtained. Then there is the argument advanced that if a toxemic patient is taken early enough, put to bed, given a milk or peptonized milk diet, she will not have convulsions. I have seen patients

treated in this way come back almost from the grave. Stroganoff says that if we let the patient alone Nature will take care of the separation and the delivery of the baby by the cutting off of the placental circulation. I am inclined to deliver because I think my results have been better. If bleeding is needed I find the results are better if this is done after delivery.

DR. E. T. HULL, New York: Bleeding used to be done at the Sloane as a routine. Since then better results have been obtained by the use of veratrum viride and nitroglycerin as outlined, repeating the dosage if necessary to get the desired result. It is well recognized that once the blood-pressure is down and once the pulse is slow, convulsions will no longer occur. If we were not able to bring about this condition by medication, then bleeding might be done, but that is very rarely necessary. In the third stage, bleeding may be allowed from the uterus with the idea of getting rid of toxins. As far as introducing salt solution is concerned I think that has to be done cautiously. With an overwatery condition of the blood one of the dangers is increased, that of edema of the lungs.

DR. H. D. FRY, Washington, D. C.: When these cases have reached the point of eclampsia they have gone too far to talk about preventive treatment. In regard to the let-alone plan of treatment the statistics have shown that surgery does a great deal of good in these desperate cases; that the mortality has been reduced by immediately emptying the uterus by surgical means and not using the expectant treatment. The mortality under the expectant treatment is between 30 and 40 per cent., and by immediate delivery, between 3 and 7 per cent. I was much surprised last month to hear Dr. Hirst read a paper advocating medical means in preference to emptying the uterus. He is the only obstetrician whom I have known to recently bring out such a view.

This sleight-of-hand technic described by Dr. Peterson, in which now you see the bladder and now you don't, is very alluring. It is easy with a piece of gauze to push the bladder out of the way, but you cannot ignore the uterovesical ligament. Dr. Bandler in his paper this morning brought out an important point in this connection showing how to avoid injury to the bladder. An important step when taking off the forceps is to pass a heavy ligature to hold the bladder back, and to act as a guide in bringing the cervix down.

I always drain, putting in gauze. In regard to chloroform, I saw a case some time ago which emphasized the dangers of using this anesthetic. The woman was delivered with forceps in the right occipitoposterior position, chloroform being the anesthetic. The lacerations were afterward repaired and the patient got along beautifully until the third day. She had had no symptoms of toxemia and the urine was perfectly clear. In thirty-six hours she was dead. The urine had been examined repeatedly without finding albumin or casts or the slightest trace of trouble with the kidneys. It was a plain case of liver poisoning from the use of chloroform and that case taught me a valuable lesson.

In a case of eclampsia with the woman undelivered the best way to bring down the blood-pressure is to empty the uterus. The blood-pressure may be brought down by bleeding, by giving veratrum viride or by rupturing the membranes; but the quickest way is to empty the uterus.

Double Pregnancy in a Uterus Didelphys.—An instance of a double pregnancy in a uterus didelphys is reported by M. Rochard (*Progrès méd.*, Nov. 5, 1910): The woman was admitted to the hospital with symptoms of an imminent abortion. On examination the vulva, vagina and colon were found to be normal, but the uterus was much enlarged, especially laterally. In Douglas' pouch was found a soft painful mass which was thought to be a swollen tube. An urgent laparotomy showed a uterus didelphys with a six weeks' pregnancy in each corpus. Each uterus communicated with a single opening and had a single ovary. On account of the probability of serious accidents in such cases if left to go to term it was deemed prudent to do a hysterectomy, which was followed by rapid recovery.

THE PREVENTION OF INFANT MORTALITY *

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The importance of preventing sickness and death in infancy has been generally recognized during the last decade by many European countries. In our country this problem has been growing, and when carefully analyzed is found to be really of greater magnitude than the problem of preventing tuberculosis, when considered from the standpoint of deaths involved. The organization of the American Association for the Study and Prevention of Infant Mortality, in November, 1909, has resulted in a more general recognition of conditions in this country, and has been followed by efforts to deal with the existing conditions, together with their causes.

Sanitarians hold that the infant mortality rate is a test of real sanitary accomplishment. Sir John Simon pointed out that a high infant mortality rate indicates the existence of evil conditions in the homes of the people. George Newman, in the preface of his recent treatise on this subject, concludes that the loss of infant life is in some way intimately related to the social life of the people.

The young of all animals are more susceptible than the adult to the influences of unfavorable circumstances in the environment. With advancement in civilization, the infant death-rate should become less. Man has succeeded in guarding judiciously against the death of the young in his domestic animals, but has not succeeded equally well with his own race. Comprehensive statistics are not available on the death-rate of young cows and horses, but we feel safe in making the assertion that the rate is lower than the infant mortality rate. In the registration area of the United States nearly one-fifth of all deaths is of infants under one year, and one-fourth of the total mortality is contributed by deaths of children under 5 years of age.

In Chicago the total deaths during 1909 were 31,300; of this number 9,368 were in children under 5 years, and 6,357 in children under 1 year of age. Thus the deaths in children under 5 years constituted approximately one-third of all deaths.

STUDY OF INFANT MORTALITY STATISTICS

That the cause must be known before a remedy can be applied is a well-established rule in medical practice. Sociologic problems have to be dealt with in the same manner. Thus before suggesting preventive measures, it behooves us to make a survey of the existing conditions and study them in relation to prevailing etiologic influences.

The general death-rate from all causes in this country and nearly all other civilized countries has been steadily declining, while the infant mortality rate has remained stationary, or at least has shown no material reduction.

For purposes of comparison Table 1 from Newman, contrasting the birth-rate, death-rate and infant

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-First Annual Meeting, held at St. Louis, June, 1910.

mortality rate of the principal European countries during the last and previous decade, is useful.

Table 2 shows the infant mortality in Chicago, compared with other American and European cities.

The studies of Newman on the distribution of infant mortality show that the rate is higher in cities than in rural communities. The diagram (Fig. 1) from Devine contrasts the infant mortality rates in the city and country.

TABLE 1.—BIRTH-RATE, DEATH-RATE AND INFANT MORTALITY RATE OF PRINCIPAL EUROPEAN COUNTRIES

	Birth Rate		Death Rate		Inf. Mort. Rate		
	1883-92	1893-02	1883-02	1893-02	1883-92	1893-02	03
England and Wales.....	31.9	29.3	18.9	17.6	144	152	132
Scotland	31.8	29.9	19.2	18.0	120	127	...
Denmark	31.6	29.9	18.7	16.5	135	133	...
Russia	48.4	48.8	34.6	32.9	270	272	...
Germany	36.6	36.9	24.7	21.5	...	195	...
Prussia	37.2	36.5	24.2	21.2	207	199	194
Austria	37.7	37.2	29.1	25.9	...	227	...
Hungary	45.5	39.9	32.3	26.3	...	224	212
Netherlands	33.7	32.3	20.9	18.5	176	152	135
Belgium	29.8	28.9	20.7	18.3	161	157	155
France	23.4	22.0	22.2	20.8	167	158	...
Spain	36.0	34.7	31.9	28.7	...	190	...
Switzerland	27.8	28.2	20.3	18.5	160	145	133
Italy	37.5	34.2	26.9	23.3	209	173	...

TABLE 2.—PROPORTION OF INFANTS WHO DIE BEFORE REACHING THE AGE OF ONE YEAR. DATA FOR CERTAIN LARGE CITIES FOR THE DECADE 1898-1907

Cities	Births	Deaths Infant	Per cent.
Buenos Aires	335,654	33,305	9.9
Paris	539,372	61,084	11.3
Chicago	457,604*	55,564	12.2
Amsterdam	149,922	18,483	12.3
Rome	119,674	15,786	13.2
London	1,195,668	187,593	14.5
New York (M. & B.)...	610,360	98,661	16.1
Brussels	41,751	6,954	16.7
Hamburg	204,467	35,499	17.4
Vienna	509,918	92,964	18.2
Warsaw	247,135	45,243	18.3
Venice	39,725	7,307	18.2
Berlin	496,702	100,033	20.1
St. Petersburg.....	382,270	98,317	25.7
Moscow	380,727	131,605	34.6

*Estimated for intercensal years.

TABLE 3.—CAUSES OF DEATH AMONG CHILDREN UNDER ONE YEAR OF AGE FOR THE FIVE-YEAR PERIOD, 1904-1908

	Total	Per cent. of total under one year
Diarrheal disease group.....	12,176	39.8
Diarrheal diseases*.....	9,709	31.7
Convulsions	2,019	6.6
Gastritis	448	1.5
Congenital defects and accidents....	7,362	24.0
Premature birth	2,474	8.1
Congenital debility	2,307	7.5
Injuries at birth.....	409	1.3
Other congenital defects	2,172	7.1
Impure-air disease group	6,298	20.6
Pneumonia	4,308	14.1
Bronchitis	1,896	6.2
Influenza	94	0.3
Four chief acute contagious diseases	993	3.2
Whooping-cough	541	1.8
Measles	195	0.6
Diphtheria	161	0.5
Scarlet fever	96	0.3
Meningitis (simple)	722	2.4
Tuberculosis (total)	486	1.6
Meningeal	195	0.6
Pulmonary	183	0.6
Other	108	0.4
Venereal disease	386	1.3
Syphilis	368	1.2
Gonorrhea	18	0.1
Violence (total)		
Sunstroke and heat prostration...	27	0.09
Suffocations (overlying, etc.)....	75	0.25
Other accidents	84	0.27
Homicide	107	0.35
Diseases of urinary system.....	146	0.6
Nephritis (acute)	146	0.5
Other urinary diseases	47	0.1
Rickets	146	0.5
Tetanus and trismus nascentium....	100	0.3

Total deaths under one year of age 30,598

* Diarrheal diseases include cholera infantum, summer complaint, dysentery, diarrhea, gastro-enteritis, enteritis, etc.

An analysis of infant mortality in Chicago, as to the causes, distribution and relation to environmental conditions, is given in Table 3.

An analysis of the age distribution of children who die before completing the first year of life shows that approximately 7 per cent. die in less than twenty-four hours after birth, at an average age of 4 hours, 41 minutes; 14 per cent. in from one to seven days, at an average age of 2 days, 17 hours; 53 per cent. in from seven days to six months, at an average age of 2 months and 10 days; and 26 per cent. when between 6 months and one year of age, at an average age of 8 months and 15 days. The average age of those dying before reaching the age of one year was 3 months and 19 days.

Out of an approximate total of 152,500 born in Chicago in the three years 1907-1909, 1,447, or 9.5 per thousand, died in less than twenty-four hours after birth; 4,354, or 28.5 per thousand, died in less than seven days; 14,479, or 96.8 per thousand, died in less than six months; 20,012, or 131 per thousand, died before completing the first year of life. Chicago's record is much the same as other large American cities.

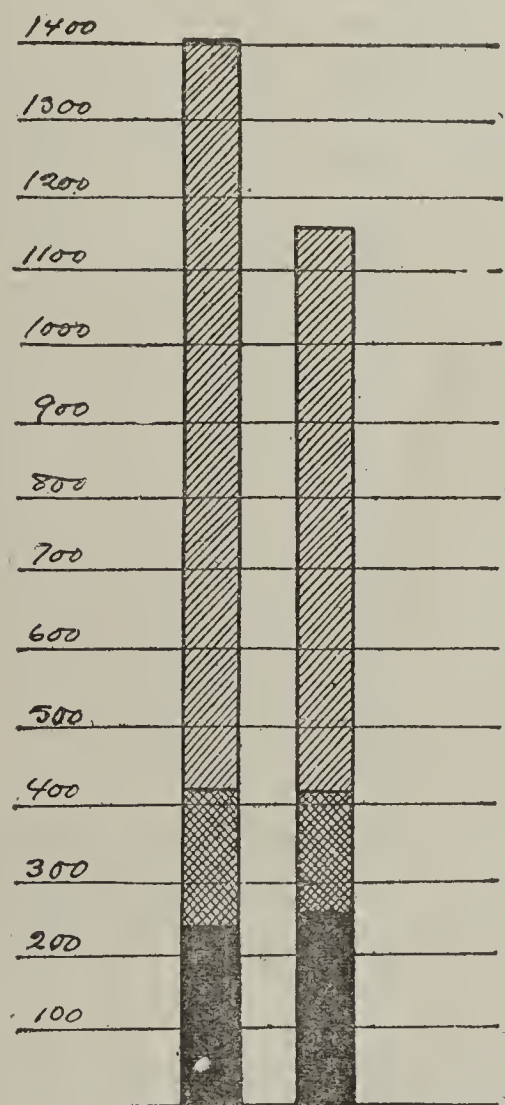


Fig. 1.—Infant mortality rates per 10,000 births in 1902.

Under 1 year, London, 1,403.0; rural counties, 1,158.8
Under 1 month, " 417.5; " 414.6
Under 1 week, " 240.5; " 258.8

The effects of population congestion, nationality, sanitary conditions and other environmental influences affecting infant life, are portrayed in a striking manner by the spot maps and diagrams of the Chicago Health Department which are herewith presented.

On the outline ward map of Chicago (Fig. 3) are shown the location of 1,570 infant deaths by means of spots. These spots are thickest in the areas of greatest density of population, and out of all reasonable proportion to the number of inhabitants or to the number of births occurring in these areas. They are thickest where the Lithuanians, Poles, Bohemians and Italian people are present in large numbers. They are thickest where the sanitary conditions are bad, where poverty and ignorance are most prevalent, where factories, in which many of the mothers or expectant mothers are employed, crowd close on the homes.

A study of the infant mortality statistics with relation to the nationality of mothers shows some startling conditions: Children of Lithuanian, Polish, Hungarian,

with increasing vigor during the last ten years, is shown in condensed form in Figure 5.

We have progressed more in our fights against small-pox, malaria, diphtheria and typhoid than we have against the chief cause of infant mortality—the diarrheal diseases.

If we may count deaths from premature birth and injuries at birth as preventable—and surely a very large percentage of them are—there would be marked increases to show on the debit side of this sanitary ledger.

MILK AS A FACTOR

The general improvement of the market milk-supply, which began fifteen or twenty years ago, was followed by some slight lowering of the diarrheal disease deaths,

not by any decided decrease. But the general improvement in market milk does not give us a milk-supply suitable for young infants, this being proved by the average bacterial count of all large cities, taken from the Hygienic Laboratory Bulletin, No. 56, and given in Table 4.

That a further reduction in the bacterial content will result in a lowering of infant mortality can be seen from (1) the statistics of infant mortality in New York before and after the establishment of the Straus milk stations; (2) from the mortality at the infant asylum at Randall's Island before and after the use of pasteurized milk; (3) the lowering of infant mortality in Chicago after the pasteurization of 60 per cent. of the market milk, and (4) comparison of infant mortality statistics in cities with good and ordinary milk-supply.

Infant Mortality in New York City.—Pasteurized milk was first made available for infants in general in New York City in 1893, in which year Nathan Straus dispensed 34,400 bottles of milk so prepared from one depot. In 1894, 339,494 bottles were issued, in 1895, 666,622, and in 1896, 666,941. In 1905, 2,668,397 bottles were dispensed and 1,016,731 glasses of pasteurized milk were bought at the booths in the parks of New York City. In 1906, seventeen Straus stations dispensed 3,142,252 bottles of pasteurized milk and 1,078,405 glasses.

Prior to the beginning of this work the death-rate of children under 5 years in New York City was over 96.2 out of every thousand, and in June, July and August the death-rate of children was at the rate of 136.4 per thousand per annum. With the increased use of pasteurized milk the death-rate fell to 55 per thousand in 1906, and the summer death-rate to 62.7 per thousand.

The Mortality at the Infant Asylum at Randall's Island.—When the infants in the care of the City of New York were fed on milk from a carefully selected herd pastured on the island, the death-rate was as shown in the first part of Table 5. A pasteurizing plant

	PERCENT OF TOTAL DEATHS UNDER 2 YRS.								Chief causes of death among children under 2 years of age and the proportion each contributes to the total at this age period.
	5	10	15	20	25	30	35	40	
DIARRHEAL DISEASES AND OTHER DISEASES OF DIGESTIVE SYSTEM								36.9	Diarrheal Diseases 30.6% Convulsions 3.6% Gastritis 1.4% Other Dis. of Digestive Sys. 1.4%
IMPURE-AIR DISEASES								22.5	Pneumonia 16.4% Bronchitis 5.8% Influenza 0.4%
CONGENITAL DEFECTS AND ACCIDENTS								19.2	Premature Birth 7.2% Congenital Debility 4.7% Injuries at Birth 1.4% Other Defects at Birth 5.9%
ACUTE CONTAGIOUS DISEASES								8.7	Diphtheria 2.7% Scarlet Fever 2.1% Whooping Cough 1.9% Measles 1.7%
DISEASES OF NERVOUS SYSTEM								3.2	Meningitis (simple) 2.4% Other Dis. Nervous Sys. 0.7%
TUBERCULOSIS								2.2	Tuberculosis - Lungs 0.7% Meninges 1.0% Abdominal 0.2% All Other 0.3%
VIOLENCE								1.7	Accidents - Suffocation 1.2% Burns and Scalds 0.2% Falls 0.5% Homicide 0.1% 0.5%
VENEREAL DISEASES								1.0	Syphilis 1.0% Gonorrhea 0.1%
DISEASES OF URINARY SYSTEM								0.6	Nephritis 0.5% Other Dis. Urinary Sys. 0.1%
RICKETS								0.6	Rickets 0.6%
DISEASES OF HEART AND BLOOD VESSELS								0.5	Heart Diseases 0.3% Other Circulatory Dis. 0.2%
ERYSIPELAS								0.4	Erysipelas 0.4%
ALL OTHER DISEASES								2.4	Tetanus and Trismus 0.3% Pyemia and Septicemia 0.2% All other causes 1.9%

Fig. 2.—What kills the babies? This diagram shows the chief causes of death among children under 2 years of age and the ratio of each cause to the total deaths in this age division. In each 100 deaths among children under 2 years of age thirty-seven are caused by diseases of the digestive system, twenty-three by the impure-air diseases, nineteen by defects and accidents at birth, nine by acute contagious diseases, three by diseases of the nervous system, two by tuberculosis, two by violence, one by venereal diseases, etc.; 70 per cent. of such deaths can be avoided—with proper care.

Bohemian, Italian and Austrian mothers die in far greater ratio than do the children of mothers of other nationalities. The difference is shown in Figure 4.

PREVENTIVE MEASURES

In Chicago, as in most other large American cities, the death-rate among children during the last two decades has been below that of the preceding years, but, unfortunately, the rate of the last decade has not shown a decrease which is proportionate to that of the ten-year period preceding.

An analysis of the statistics of contagious diseases against which preventive measures have been applied

DEPARTMENT OF HEALTH
Popular Educational Series

TABLE 4.—AVERAGE BACTERIAL COUNT OF MARKET MILK IN VARIOUS
LARGE CITIES

City	Investigated by	Samples	Date	Count
Amsterdam	Von Geuns	1	1885	10,545
Würzburg	Clauss	8	1889	1,000,000 to 2,000,000
Würzburg	Hohenkamp	..	1889	1,900,000 to 7,200,000
Munich	Cnof	..	1889	200,000 to 6,000,000
Halle	Renk	..	1891	6,000,000 to 30,700,000
Glessen	Uhl	30	1892	83,000 to 169,600,000
Boston	Sedgwick & Batchelder	50	1892	708,000 to 4,200,000
Dorpat	Knochenstern	..	1893	10,200,000 to 30,000,000
London	Rowland	25	1895	500,000
Buffalo	Frye	15	1896	25,000 to 43,600,000
London	Pakes	..	1900	3,000,000 to 4,000,000
New York City	Parke	..	1901	3,000,000 to 5,000,000
Middleton, Conn.	Burrage	..	1901	11,000 to 300,000
Rochester, N. Y.	Goler	86	1903	837,000 to 5,000,000
London	Dodd	..	1904	4,800,000
Philadelphia	Byrnes	..	1904	1,600 to 21,000,000
Chicago	Jordan	..	1904	16 per cent. samples contained over 20,000,000
Philadelphia	Bergey	..	1904	Average 4,800,000
Berlin	Proskauer, Seligmann, Cro- ner	..	1907	Average 3,500,000
Washington	Hygienic Laboratory	..	1906	Average 22,134,000
Washington	Hygienic Laboratory	..	1907	Average 11,270,000
Chicago	Tonney (Raw Milk)	639	1909	Average 3,239,000
Chicago	Tonney (Past. Milk)	..	1909	Average 752,975

TABLE 6.—THE LOWERING OF INFANT MORTALITY IN CHI-
CAGO AFTER PASTEURIZATION OF SIXTY PER CENT.
OF THE MARKET MILK-SUPPLY IN 1909 *

Year	Deaths	Rates per 100,000
1899	5,917	363
1900	5,726	337
1901	5,407	308
1902	5,514	303
1903	5,699	304
1904	5,387	279
1905	6,251	314
1906	6,554	319
1907	6,720	319
1908	6,908	319
Average 10 years	6,008	316
1909	6,389	287

* Prior to 1907 all deaths of children who lived less than one day were excluded from the mortality count. Since 1907 such deaths have been included and they constitute 7.2 per cent. of the total mortality under one year of age. Therefore, to make this statement comparable, 7.2 per cent. has been added to the tabulations of the years 1899 to 1906, inclusive.

TABLE 7.—AGES AT WHICH LIVES WERE SAVED DURING
THE YEAR 1909

Years	Deaths	Saving	Loss
Under 1	6,387	6,908	521
1 to 5	2,981	2,768	213
5 to 10	768	759	9
10 to 20	1,179	1,199	20
20 to 30	2,676	2,573	103
30 to 40	2,261	3,085	178
40 to 50	3,768	3,553	215
50 to 60	3,501	3,334	167
60 to 70	3,195	2,965	230
70 to 80	2,367	2,240	127
Over 80	1,158	1,150	8

TABLE 8.—COMPARISON OF INFANT MORTALITY STATIS-
TICS IN CITIES WITH GOOD AND ORDINARY
MARKET MILK-SUPPLY

GOOD MILK-SUPPLY (Pasteurized)		1908	1909
Copenhagen	150	109	
Buenos Aires	86	88	
Paris	103	96	
ORDINARY MILK-SUPPLY		1908	1909
London	113	108	
New York	128	130	
Berlin	168	158	
Vienna	183	172	
Chicago	135	125	

There are other significant factors besides the milk-supply to be taken into consideration:

In American cities the change in the immigrant population during the last two decades is an important factor. The change is illustrated by Table 9.

Thirty years ago the immigrant or foreign population of cities consisted of Germans, Scandinavians, English or Irish. Now the Slavs and those from southern European countries are in excess. They come from the European countries which have the highest infant

Diarrheal diseases are PREVENTABLE ~ and yet these disorders kill 1 out of every 14 babies before they reach the third year of life.

Upwards of 3000 babies under 2 yrs. of age die in Chicago each year from the diarrheal diseases.

60 percent of these deaths occur in the three hot weather months ~ July, August and September.

Hot weather does not directly kill many babies but its effect on babies food is what creates such great havoc.

The greatest of care must be given baby's food in hot weather. It must be PURE ~ KEPT CLEAN ~ KEPT COOL and PROPERLY PREPARED.

Never give little babies the least particle of solid food.

Give your baby pure water to drink but NEVER give it beer, coffee, tea, ice cream, etc..

And remember ~ Overfeeding kills more babies than underfeeding.

If baby's food disagrees with it CONSULT A DOCTOR. Don't dope the child with drugs ~ Advice as to baby's food is what you need ~ rather than medicine.

Here are two pamphlets you can obtain FREE on application to the Department of Health:

1. HOT WEATHER CARE OF INFANTS.
2. HOW TO MAKE AN ICE BOX AT HOME AT AN EXPENSE OF 25 cents. ~ TO KEEP BABY'S MILK COOL AT COST OF 2½ cents PER DAY.

Fig. 3.—Outline ward map of Chicago, showing location of infants' deaths from diarrheal diseases during the summer of 1909; 1,570 deaths in July, August and September.

TABLE 5.—DEATH-RATE AT THE INFANT ASYLUM, RANDALL'S ISLAND

BEFORE THE USE OF PASTEURIZED MILK			
	Children treated	No. of Deaths	Percentage
1895	1,216	511	42.02
1896	1,212	474	39.11
1897	1,181	524	44.36
Total	3,609	1,509	41.81
AFTER THE USE OF PASTEURIZED MILK			
	Children treated	No. of Deaths	Percentage
1898	1,284	255	19.80
1899	1,097	269	24.52
1900	1,084	300	27.68
1901	1,028	186	18.09
1902	820	181	22.07
1903	542	101	18.63
1904	345	57	16.52
Total	6,200	1,349	21.75

was installed in the early part of 1898. No other change in diet or hygiene was made.

Is it not significant that the only marked reduction in deaths in Chicago during the year 1909, as compared with the preceding year, was among the babies, the milk feeders? At all other ages, excepting 10 to 20 years, there were increases, as will be seen by Table 7.

TABLE 9.—RECENT CHANGES IN THE RACE OF IMMIGRANTS; COMPARISON OF CERTAIN NATIONAL GROUPS *

	Per cent. of immigrants from Austria-Hungary, Italy and Russia in total immigration.†	Per cent. of immigrants from United Kingdom, France, Germany and Scotland in total immigration.
1869	0.9	73.8
1880	8.5	64.5
1890	34.0	57.7
1891	39.6	52.1
1892	44.8	53.9
1893	42.7	48.2
1894	42.6	47.9
1895	39.8	52.9
1896	53.9	38.5
1897	53.0	37.6
1898	57.9	33.3
1899	64.4	27.8
1900	66.7	25.3
1901	68.6	22.5
1902	70.6	20.3
1903	66.8	22.4
1904	63.4	25.0
1905	66.4	24.2
1906	68.5	18.3
1907	71.3	17.1

* Prepared by Immigration Restriction League from Quarterly Report of Bureau of Statistics, No. 2, Series 1892-1893, and Reports of Commissioner-General of Immigration.
† Includes Poland to 1898.

The statistics of families studied for Dr. Hamilton by Theresa McMahon, Ph.D., (Table 10) show the percentage of children dying in families of working women.

TABLE 10.—RELATION OF NUMBER OF WORKING WOMEN TO CHILDREN'S DEATHS IN 600 FAMILIES IN CHICAGO

	Women worked after marriage	Women worked before marriage	Women worked before and after marriage
Number of women.....	114	307	88
Number of children who died.....	200	504	150
Per cent. of children who died prematurely and at birth.....	39	33	36
Per cent. of children who died under 3 years	56	61	60
Per cent. of children who died over 3 years	4	5	4

As an example of the opposite condition may be cited the death-rate during the siege of Paris, in 1870-71, where, with the cessation of industrial activities in the city, the infant mortality fell 40 per cent., while the general mortality rate is said to have doubled.

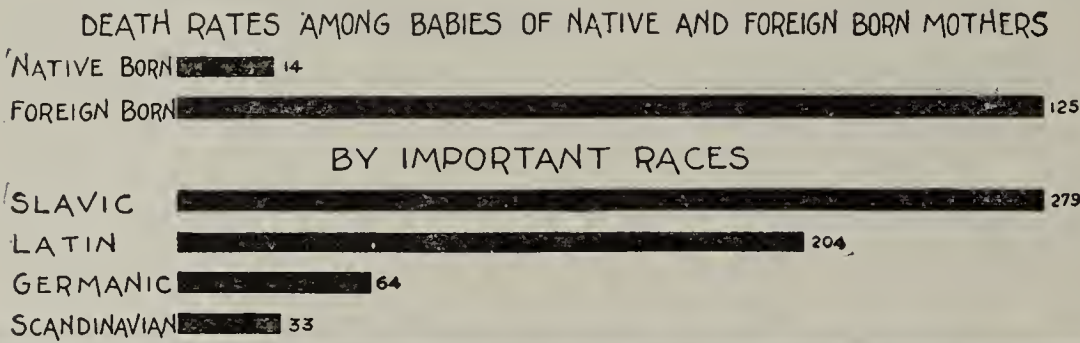
In 1880, according to the Census Bureau, 25.8 per cent. of the entire population lived in the cities. Since that time the urban population has been increasing rapidly. In 1890 it constituted 32.9 per cent. of the total population; in 1900, 37.3 per cent., and now it is estimated that fully 41 per cent. of the inhabitants of the United States live in the cities of more than 4,000 population. This same tendency prevailed in the later days of the Roman Empire and was an important element contributing to its decline and fall.

The effects of such migration always have manifested themselves by a high infant mortality. Newman, after a study of infant mortality in Great Britain, concludes that the distribution of infant mortality follows mainly in the wake of urbanization—that is, high density of population—combined with industrial and social conditions.

Of the many other factors influencing infant mortality, which may bear on the results of preventive measures, excessive child-bearing may be briefly considered. Alice Hamilton reported at the New Haven meeting on investigations made in Chicago, and concludes that excessive child-bearing makes for excessive child mortality. Table 11, taken from her report, shows that the increase in size of the families is paralleled by the increase in the proportion of children lost.

Table 12, compiled from her report, shows the relation of nationality, child-bearing and infant mortality rate.

The high birth-rate and death-rate here shown among the Slavs and Italians is closely related to the deaths occurring from accidents at birth, and from prematurity. Tallent states that midwives attend 47 per cent. of all cases in Chicago, and 86 per cent. among the



Children of Mothers born in		Death Rates Per 100,000 of Population by Nationality of Mothers										
		50	100	150	200	250	300	350	400	450	500	600
SLAVS	LITHUANIA											631
	POLAND										504	
	HUNGARY					232						
	BOHEMIA				133							
	RUSSIA			97								
	OTHER SLAV						251					
LATIN	ITALY					250						
	OTHER LATIN		33									
GERMANIC	AUSTRIA			135								
	HOLLAND			82								
	GERMANY			51								
	OTHER GERMANIC			46								
SCANDINAVIAN	DENMARK			61								
	SWEDEN			30								
	NORWAY			28								
	IRELAND										64	
	ALL OTHER FOREIGN										15	
	UNITED STATES										14	

*Other Slavs" embraces Slavonia, Roumania, Servia, Croatia.
*Other Latin" embraces France, Greece, Spain, Portugal.
*Other Germanic" embraces Belgium, Switzerland, Luxembourg

Fig. 4.—Chart of infant death-rates from diarrheal diseases in hot weather in Chicago, arranged by nationality of mothers.

mortality rates, and with the change in environment and industrial states of both sexes, conditions result which favor high infant mortality.

That the changed industrial conditions are an important factor has been shown by Devine in his studies of the mortality rates in two manufacturing cities in Massachusetts, compared with the rates observed in other American cities.

Italian population. Accurate data on this question cannot be obtained from birth certificates, because complete returns are not made; but from a study of the 485 names of midwives practicing in Chicago, it is found that 35 per cent. are Slavic and 6 per cent. are Italian. The prevailing custom is that they practice, each among her own nationality.

TABLE 11.—INFANT DEATHS PER THOUSAND BIRTHS

Families of 4 children and less.....	118
Families of 6 children and more.....	267
Families of 7 children and more.....	280
Families of 8 children and more.....	291
Families of 9 children and more.....	303

TABLE 12.—INFANT DEATHS PER THOUSAND IN RELATION TO NATIONALITY AND CHILD-BEARING

	Group 1, 8 children and more.	Group 2, 4 children and less.	Av. No. children per family.	Av. No. deaths per family.
Jews	260	81	5.7	1.1
Mixed	271	98	5.1	1.0
Irish	291	113	6.6	1.7
German	288	186	5.7	1.3
Slavs	328	122	6.5	1.7
Italians	301	125	6.6	1.9

PREVENTIVE MEASURES SUGGESTED

The measures which we suggest and briefly summarize, are made with a view of remedying the existing direct and indirect causes of sickness and death in children, as shown by the study presented.

1. *Causes Operating Directly on the Mother.*—The causative conditions that need correction are neglected education, new environment, urbanization, female employment, improper care during pregnancy, and later neglected breast-feeding, overwork, bad health, alcoholism and poverty.

It is not easy to suggest a remedy for all of these. Some of these influences can and will be eliminated by proper enactment and enforcement of laws. The personal factor can be treated only by educational measures.

Such measures promulgated in the public schools will have their effect in time. The present generation is much more difficult to reach. The procedure now followed in European countries is yielding results. For a detailed summary of these methods and work, embodied in the Infant Welfare Movement, I refer to Abt's article.¹

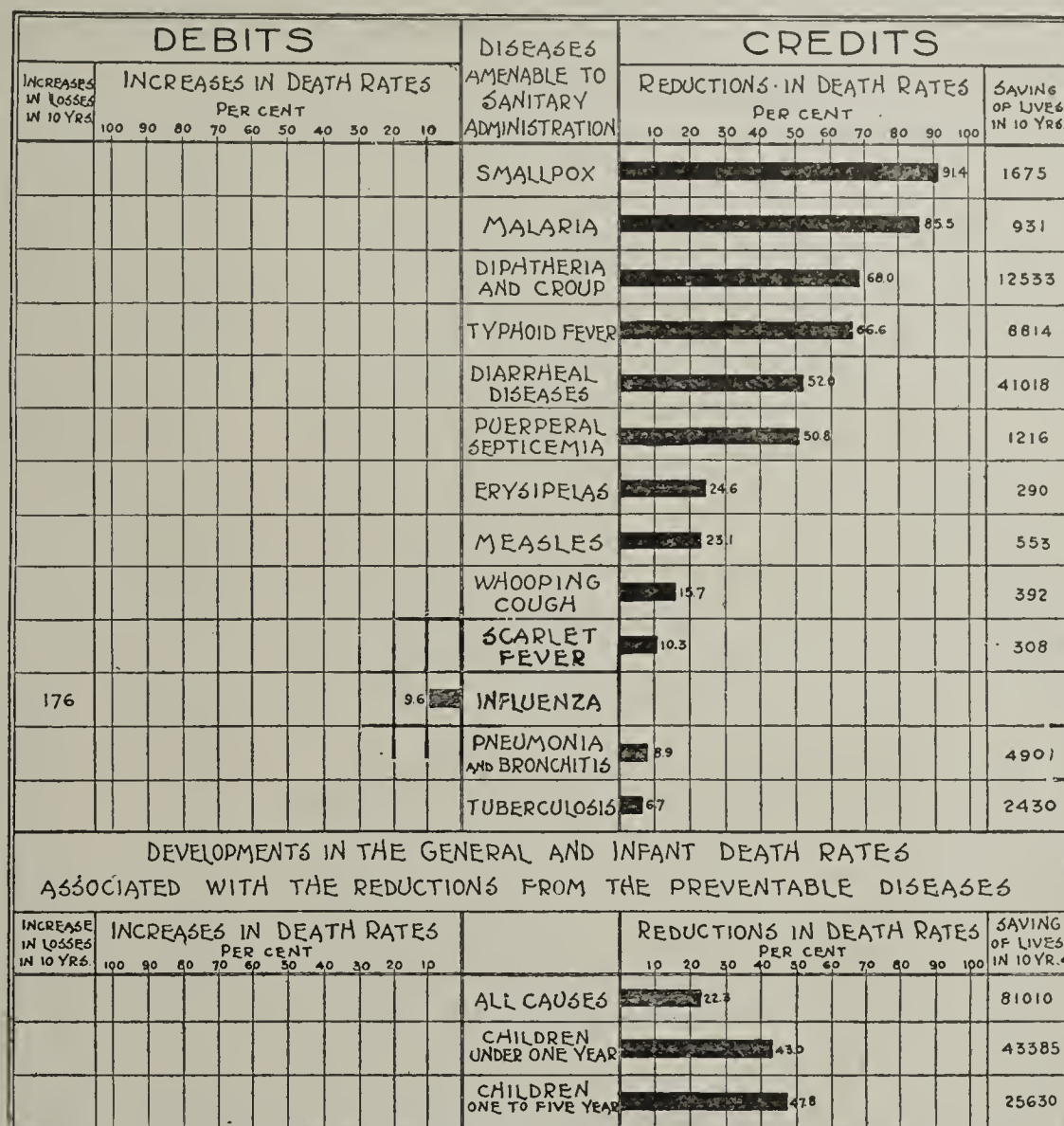
Starting in 1892, with Budin's consultation for nurslings whose mothers were delivered in his clinic, the movement has progressed and with the recent building of the Augusta Victoria House at Charlottenburg, near Berlin, the work in Germany has assumed a national aspect.

The English method, as practiced by the Westminster Health Society of visiting mothers, is extremely practical. Voluntary lady visitors who have received some training call on the mothers in their localities, often

before the baby is born, and after birth make calls as frequently as it seems necessary.

The calling on cases of reported sickness sometimes practiced in American cities does not strike at the root of the evil, yet it is better than inactivity. The baby-tent idea, used effectively in Chicago, has served in manifold ways to aid mothers in the care of sick and well children.

2. *Causes Operating Directly and Indirectly on the Child.*—Causative and contributory existing conditions that require correction are: incomplete birth registration, improper care, no reports of morbidity.



DEPARTMENT OF HEALTH, CHICAGO.
EDUCATIONAL SERIES No. 25.

Fig. 5.—Sanitary trial balance: The City of Chicago in account with the preventable diseases; losses and gains during the last ten years as compared with the preceding decade.

It is impossible to apply a remedy if it is not known where the trouble exists. If the well or sick children are to be visited and taken care of, their location has to be determined. Births should be reported within twenty-four hours. Following this, advice should be given the mother in regard to the proper care and feeding of the child. Breast-feeding should be encouraged. Budin's experience has shown how much more generally it can be carried out when efforts are made to do so.

Leaflets, mailed to the mother on receipt of the birth report, are useful; but the best results are obtained by personal supervision. The obstetrician or midwife makes the initial call in practically all births, and in the absence of other agencies is in duty bound not only to attend to the birth and puerperium, but also to see that the child is properly started in life. Midwives with their practice limited by law to obstetrics are in need of enlightenment with regard to their duties to

1. Abt, Isaac A.: A Survey of the International Movement Concerning Infant Welfare, Illinois Med. Jour., April, 1910, p. 428.

humanity. When this is properly presented to them and it is shown of what great service judicious advice given by them to the mother will mean for the welfare of the child, they may be made influential agencies in the prevention of infant mortality. In Chicago a correspondence school for midwives is conducted by the Health Department with gratifying results.

Hedger, reporting on the work done in Chicago during the summer of 1909, says that 17,437 families were called on, and 2,876 sick children were found; 2,057 had diarrhea and 800 had other affections. Infantile diarrhea should be made a reportable disease.

3. *Indirect Causes to be Remedied by Action on the Part of the Authorities.*—The baneful influences of bad sanitation, improper housing, congestion in cities, filthy environment, flies, bad water and an unclean milk-supply are factors in the cause of disease and death of children, as well as of adults, that require correction wherever they exist.

Since the diseases due to impure milk and bad air make up the first and third largest groups of causes of death in infancy, it behooves us to eliminate these influences to the fullest extent. High-grade, clean milk may be had in most cities, but the price is prohibitive, as far as the poor are concerned. Infants' milk depots have been established and are distributing milk specially adapted, in regard to purity and chemical composition, to infants' feeding. Unfortunately, babies are too frequently supplied with milk from those sources only after sickness or nutritional disturbances have developed, and even then such milk stations are not within the reach of all. Milk-dealers who can make deliveries throughout the entire city should come to the aid of the philanthropic organizations which are now carrying on this work.

In addition, the general market milk-supply should be improved so that those who must rely on this source in the feeding of infants and children may not be unnecessarily exposed to infection. All milk not produced in accordance with strict sanitary requirements should be properly pasteurized under municipal control.

Pure water should be supplied for children in the hot season. This is mentioned to emphasize the findings of Hedger and others, namely, that many children are given food and food only when they are crying because of thirst.

Air, the first requirement of the child at birth, should be pure. The curative powers of pure air in pulmonary diseases, marasmus, rickets, summer diarrhea, and its soothing effect on the crying and restless child, have been recognized more and more of late, and necessarily we must draw the conclusion that if pure air is beneficial for the sick it must be equally good for the well.

215 Madison Street.—2758 Washington Boulevard.

CACTUS GRANDIFLORUS

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The testimony concerning the therapeutic value of *Cactus grandiflorus* is conflicting and, indeed, absolutely contradictory, since many observers have stated that they found it to be a most useful cardiac remedy, whereas others have pronounced it absolutely inert.

Positive testimony is preferable to negative when other conditions are equal, and when reputable men declare that they have found a drug of value in a given condition, the burden of proof concerning its worthlessness then devolves on its opponents.

There can be no doubt that much of the misunderstanding which exists in regard to this drug has arisen through the substitution of other substances for *Cactus grandiflorus*. As an example of this we may cite the experience of Gordon Sharp,¹ who, as the result of clinical observations extending through several years, came to the conclusion that *Cactus grandiflorus* possessed no therapeutic properties whatsoever. Sharp worked with specimens of cactus obtained from a number of the better-known drug houses of Great Britain, but unfortunately, when he submitted a specimen of his "*Cactus grandiflorus*" to the botanist, E. M. Holmes, the latter found it to be *Opuntia decumana*.

Naturally this deprived Sharp's work of its value, so far as the question concerns *Cactus grandiflorus* and Sharp thereupon secured specimens of the true *Cactus grandiflorus* with which he conducted a new series of experiments, coming to the same conclusions² that he had reached previously, i. e., that the drug was inert.

Under the circumstances we considered it necessary to exercise especial care to secure absolutely authentic specimens of *Cactus grandiflorus*, and application was made to some of the larger manufacturers of pharmaceuticals and dealers in ground drugs, but they were unable to supply us with authentic specimens.

Dr. J. N. Rose, associate curator of the Division of Plants of the United States National Museum, kindly supplied us with a specimen of the true *Cactus grandiflorus*; but it has been asserted that the Mexican variety alone possesses therapeutic value; hence we desired authentic specimens direct from Mexico. On the suggestion of Dr. Rose we applied to Dr. C. A. Purpus, a botanist at Zacuapan, Huatusco, in the state of Vera Cruz, Mexico, who gathered a sufficient supply of the fresh herb and forwarded it to us.

We have used tinctures made from these two specimens, fluidextracts made by the more prominent manufacturers of pharmaceuticals, as well as the Specific Medicine Cactus, made by Lloyd Brothers, and extracts prepared from these tinctures and fluidextracts. The specimen sent us by Dr. Purpus agrees with the description given by Holmes, and Dr. Purpus is a botanist whose standing cannot be questioned.

EXPERIMENTS

It was our plan originally³ to supplement our pharmacologic examination of cactus with systematic clinical observations, but we felt constrained to modify our plans for reasons that will become apparent. The tinctures, fluidextracts and extracts were administered to cats, dogs and frogs by the stomach; the tinctures and fluidextracts were administered intravenously to cats and dogs. In some cases small amounts were used, in others the dose was limited only by the tolerance of the animal toward the alcohol contained in the preparation.

1. Practitioner, 1894, Hi, 161.

2. Pharm. Jour., Series 4, v, 539.

3. The experiments in which the cactus was administered orally were performed two years ago; the results were so unsatisfactory that the work was discontinued, but our recent work on the standardization of the digitalis bodies by means of the intravenous injection into cats led us to believe that we could determine the cardiac action of cactus with greater precision than had been done hitherto.

The tinctures were prepared by macerating the crushed fresh cactus herb in four times its weight of 95 per cent. alcohol, after the manner by which Dr. Rubini⁴ is said to have prepared his tinctures. The fresh herb contains a large amount of mucilage, and when a weakly alcoholic menstruum is used a thick viscid preparation is obtained of about the consistency and appearance of white of egg, except for a greenish color. This is of such viscidness that when a tall cylindrical graduate filled with the fluid is inclined so that a little runs out the entire mass is drawn up over the lip of the graduate, as the pendent end of a rope might draw an entire coil over a pulley. The tinctures prepared with strong alcohol have a handsome green color due to the presence of chlorophyll, but they contain only about 0.5 per cent. of solid extract.

There is a want of agreement among manufacturers of the fluidextract concerning the proper menstruum for exhausting *Cactus grandiflorus*, the percentage of alcohol in these preparations varying from 43 per cent. to 90 per cent. This results in great differences in the appearance and solid contents, and it also indicates that some manufacturers must use the dried herb, since the moisture present in the fresh would reduce the alcoholic content much below that given on the labels in some cases.

We determined the amounts of solid extracts in the tincture and fluidextracts which we used by heating 10 c.c. of each preparation in a porcelain crucible to 80 C. for 24 hours and weighing the residue. Some of these residues are quite dry; others are of the consistency of extracts. The alcoholic and solid contents are given in Table 1.

TABLE 1.—CONTENTS OF FLUIDEXTRACTS

Name of manufacturer.	Alcohol.	Solid extract.
	%	%
Eli Lilly & Co.....	55	4.0
Lloyd Bros. (specific med.)..	81	4.0
Mulford & Co.....	80	0.9
Parke, Davis & Co.....	65-75	1.6
Sharpe & Dohme*.....	85	0.7
E. R. Squibb & Sons.....	43	1.8
Frederick Stearns	90	1.0
Wm. R. Warner & Co.....	60	1.6
John Wyeth & Bro.....	75	2.4
Tincture (our own)....	80	0.58

* Only 2 c.c. were available for the determination of the solid extract. Since our own tinctures represent about 20 per cent. of the drug, they should contain but one-fifth as much extract as a fluidextract.

The extracts, not those mentioned in Table 1, which were used in our experiments on animals, were prepared by evaporating the tinctures and the fluidextracts, exposed in open dishes on a warm table placed over a radiator, to the consistency of a soft extract and adding sugar of milk. The extracts so prepared represented from one to fifty times their weight of cactus; the amounts used in the experiments are expressed in terms of the crude drug which they represent.

ADMINISTRATION OF CACTUS BY THE STOMACH

Two cats, A and B, received doses of the fluidextract of cactus so adjusted that the alcoholic content was the same in each case. A received 4.7 c.c. of Sharpe & Dohme's fluidextract, and B received 9.4 c.c. of Squibb's, each containing 4 c.c. of absolute alcohol per kg. of weight, through a stomach tube. C was used for a control and received 4 c.c. of absolute alcohol per kg., the three doses being so diluted with water that each contained the same percentage of alcohol.

There was no perceptible difference in the effects of the three doses. All three of the cats sank into a state of profound narcosis, so that they remained motionless

in whatever position they were placed. The heart-rate of the cat which received the larger dose of cactus was slowed by 12 beats per minute; that of the one which received the alcohol alone was slowed by 20 beats; that of the one which received the smaller dose of cactus was increased by 9 beats per minute.

In order to test the effects of the continued administration of cactus, 1 c.c. of fluidextract of cactus per kg. of weight was given daily for one week through a stomach-tube to each of three cats. The heart-rate was determined before the drug was used, just after, and twenty-four hours after, the last dose. The results are given in Table 2.

TABLE 2.—HEART-RATE BEFORE AND AFTER CONTINUED ADMINISTRATION OF CACTUS *

Cat.	Manufacturer.	Heart-rate.		
		I	II	III
D	Eli Lilly & Co.....	165	192	150
E	Sharpe & Dohme.....	198	...	168
F	Lloyd Bros. (spec. med.)..	183	216	186

* I, before; II, just after; III, twenty-four hours after last dose.

The results of these experiments being unsatisfactory and inconclusive, larger doses were administered in the form of the extracts to seven cats for periods of three days. The results are given in Table 3.

TABLE 3.—HEART-RATE BEFORE AND AFTER LONGER CONTINUED ADMINISTRATION *

Cat.	Manufacturer.	Dose gm. per kg.	Heart-rate.	
			I	II
G	Sharpe & Dohme.....	17.5	170	162-183
H	Lloyd Bros.....	17.5	126	126
I	Parke, Davis & Co.....	8.0	183	182-198
J	Eli Lilly & Co.....	8.0	150	162
K	John Wyeth & Bro.....	16.0	150	150
L	Our own tincture.....	15.0	180	192
M	Our own tincture.....	14.0	222	237

* I, before; II, after.

Tincture of strophanthus was used as a control in a number of cases. The results with this drug were not wholly satisfactory, but distinct slowing was usually induced by the subcutaneous injection of about one-fourth of the fatal dose, or by the oral administration of large, but not fatal, doses.

In order to test the effect of cactus on the dog after the oral administration, a single large dose was given as follows: Fluidextract of E. R. Squibb & Sons (250 c.c.) was warmed in order to evaporate most of the alcohol, and the residue, which was quite thick and mucilaginous, was diluted with water to measure 350 c.c. This was administered in one dose through a stomach tube to a dog weighing 4.4 kilograms. Emesis occurred in about thirty minutes—a result which cannot be considered extraordinary in view of the fact that the amount given was equal to nearly one-twelfth the weight of the animal.

Four days later the same dog received 150 c.c. of the fluidextract of cactus of Parke, Davis & Co. in the same way, after the alcohol had been removed by evaporation. No perceptible effect followed the administration of this stupendous dose, equal to one thousand times the average therapeutic dose for a man, which is given on the label of the specimen used as 0.12 to 0.3 c.c. This dog received about 15,000 times as much per kilo of weight as a man of 70 kilos would when taking the therapeutic dose just mentioned.

The extracts of cactus were administered to frogs by the mouth in doses corresponding to 100 grams of the drug per kilo of weight, without causing perceptible effects. Such amounts correspond to doses of 7 kilos for a man of 70 kilos in weight, or a great many thousands of times as large as the doses usually recommended.

of blood-pressure. The portions of the tracing given fully represent all that was observed.

We have not seen a case in which death resulted from respiratory failure from a digitalis body alone, though this sometimes occurs when an animal is too deeply anesthetized, just as it does from an anesthetic in the absence of a digitalis action.

PROTOCOL OF EXPERIMENT 2

Aug. 4, 1910. Male dog; weight, 5.4 kg.
10:30 a. m. Morph. sulphate, 0.01 gm., subcutaneously.
11:00 a. m. Ether for light anesthesia; cannulas into the femoral vein and the carotid artery.
11:15 a. m. Ether withdrawn.
12:06 p. m. Normal (Tracing I).
12:07 p. m. Lloyd's specific medicine cactus, 0.1 c.c. per kg., diluted with four parts of normal salt solution.
12:10 p. m. Cactus, 0.2 c.c., as before (Tracing II).
12:17 p. m. Cactus, 0.3 c.c., as before.
12:34 p. m. Cactus, 1 c.c., as before.
12:40-12:58 p. m. Cactus, 2.4 c.c., as before. Clot in cannula (total, 4 c.c.).
1:05-1:18 p. m. Tincture Mex. cactus, 2 c.c. per kg., diluted with normal salt solution.
1:33 p. m. Resumed injection of tincture cactus.
1:34 p. m. Respiration begins to fail; total, 4 c.c. of specific medicine cactus and 2.75 c.c. tincture per kg. (Tracing VIII).
1:35 p. m. Cessation of respiration; total of 5.4 c.c. (Tracing 2). Alcohol per kg. (in cactus preparations).
1:36 p. m. Pause in heart-beat.
1:38 p. m. No respiratory movement (Tracing X).
1:42 p. m. Cessation of pulsations.

Despite these repeated failures to obtain evidence of any pharmacologic action with the preparations of cactus which we had employed, it seemed possible that *Cactus grandiflorus* might contain an active principle in such small amounts that its presence was masked by the alcohol in the liquid preparations, and that it might be injured or destroyed by the slight degree of heat used in the process of evaporating the alcohol from these preparations, though the probability of such being the case seemed to us very slight indeed.

We next resorted to a method which we believe to be capable of detecting even a feeble digitalis action. We have shown⁵ that we could estimate the activity of various digitalis bodies by means of the combined use of ouabain and the particular digitalis body to be tested, the results being more accurate in the case of the more slowly acting digitoxin when the combined method is used than when the digitoxin is used alone.

This method may be described very briefly as follows: The fatal dose of crystalline ouabain for the cat by the vein is 0.1 mg. per kg. When less than the fatal dose of a digitalis body has been injected into the vein of a cat, less than 0.1 mg. of ouabain per kg. will be needed subsequently to cause the animal's death in a typical manner, the difference between 0.1 mg. of ouabain per kg. and that actually required being proportional to the activity of the digitalis body previously injected. This may be made clearer by the following illustration: 0.3 mg. of digitoxin per kg. injected intravenously proved fatal to a cat after four days, but 0.15 mg. of digitoxin per kg. and 0.05 mg. of ouabain per kg. (just half of the minimal fatal dose of each) injected into the vein at once caused death in a few minutes.

The accuracy of this method has been tested with a number of digitalis bodies, including digitoxin, digitalis, strophanthus and convallaria, but it is only to be expected that differences in individual susceptibility should be seen occasionally. We believe, however, that the results which we have obtained suffice to preclude serious errors.

It seems fair to conclude from what has just been said that if *Cactus grandiflorus* contains more than the merest

traces of a principle having a digitalis action, the presence of such a principle can be detected by the method just described, and we certainly can detect the presence of as little as one-thousandth of 1 per cent. of ouabain when no greater quantities of an unknown solution are used than were used of the cactus.

At first we sought to use doses of cactus which were limited only by the estimated tolerance of the cats for the alcoholic content of the preparations, but we soon found that it was impossible to approximate the minimal fatal dose of alcohol for anesthetized cats, and the animals died at various stages of the experiments. Some survived until the cactus and the full fatal dose of ouabain had been administered; others succumbed when only 0.5 c.c. of the fluidextract of cactus per kilogram of weight had been injected. Such cases as the latter were so evidently due to the alcohol and ether that they had to be thrown out of the reckoning, and under the circumstances it was deemed better to throw out the entire series including those which supported the final results; hence these earlier experiments are not included in the table.

Such accidents were avoided when the dose of the fluidextract of cactus was reduced and the precaution was taken of letting the animals partially come out of the narcosis. As a further precaution the fluidextracts and tinctures were diluted with normal salt solution and injected very slowly. In the series tabulated we injected the fluidextracts and tinctures into the femoral veins of cats in doses of 1 c.c. per kilogram in eight cases, 1.5 c.c. per kilo in four, and of 5 c.c. in one case, that of the fluidextract having the lowest alcoholic content (43 per cent.) and then determined the amount of crystalline ouabain which was required to cause the death of the cat with typical symptoms.

TABLE 4.—COMPARISON OF EFFECTS OF CACTUS AND OUABAIN

Cat.	Manufacturer.	Dose of cactus in c.c. per kg.	Per cent. of fatal dose of ouabain required.	Per cent. of fatal dose due to cactus.
N	Ely Lilly & Co.....	1	100	00
O	John Wyeth & Bros....	1	195*	00
P	E. R. Squibb & Sons...	1	100	00
Q	E. R. Squibb & Sons...	1	106	00
R	Sharpe & Dohme.....	1	80	20
S	Sharpe & Dohme.....	1	104	00
T	Parke, Davis & Co.....	1	110	00
U	Lloyd Bros. (spec.)....	1	154	00
V	Lloyd Bros. (spec.)....	1.5	103	00
W	Tincture (our own)....	1	122	00
X	Tincture (our own)....	1.5	77	23
Y	Tincture (our own)....	1.5	115	00
Z	Warner's, Mulford's and Stearn's, mixed	1.5	97	3
A1	E. R. Squibb & Sons...	5	117	00

* Cat tolerant.

There is an apparent cactus action in the case of cats R, X and Z amounting to 20, 23 and 3 per cent. of the fatal doses respectively. We say apparent, for we believe these results can be explained otherwise than on the basis of the cactus activity. In the first place, the controls in two of the more important instances give no evidence whatsoever of cactus action, and the third is wholly within the limits of error. Even granting for the sake of argument that the activity is that indicated, it is very feeble. If we represent the activity of cactus as indicated in the case of R and that of ouabain by parallel lines the lengths of which are proportional to their activities, with that representing cactus one *inch* in length, that representing ouabain would have to be more than three-fourths of a *mile* in length. If we compare the doses on the basis of this indicated activity the oral dose of this fluidextract of cactus would be about 250 c.c., or half a pint.

5. Hatcher and Brody: Am. Jour. Pharm., 1910, lxxxi, 360.

We believe that it would be quite justifiable to attribute these discrepancies to undetermined and unimportant causes, but we were particularly anxious to leave nothing to deduction which could be proved experimentally; hence we made a new series of experiments in which we injected 5 c.c. of fluidextract per kilogram of weight, after evaporating a portion of the alcohol in a jet of cold air, the temperature of the preparations being kept quite low. The results of these experiments are given in Table 5.

TABLE 5.—FURTHER COMPARISON OF CACTUS AND OUABAIN

Cat.	Manufacturer.	Dose of cactus in c.c. per kg.	Per cent. of fatal dose of ouabain required.	Per cent. of fatal dose due to cactus.
A1	Parke, Davis & Co.....	5	86	14
C1	Parke, Davis & Co.....	5	94	6
D1	Warner & Co.....	5	88	12
E1	Warner & Co.....	5	89	11
F1	Wyeth & Bro.....	5	101	00

The results given in Table 5 require further comment. In one case there was no apparent effect even from such a colossal dose; cat C 1 was very fat, and we have frequently stated in other papers that such animals require smaller doses than the normal. This leaves three cases to be explained, as the differences are too high to be attributed to the limits of error, and furthermore, they are all in one direction. Another effort was made to determine the nature of this feeble action.

Reference to Tables 4 and 5 shows that in a few exceptions where cactus has an apparent action the fluidextract of Warner & Co. was used in three cases out of a total of seven, and we decided to make one more effort to determine whether this preparation really possessed a true digitalis action, however feeble, or some other toxic action which lessens the amount of ouabain required. Such actions are seen occasionally with such drugs as acetanilid, but they lack the uniformity of action possessed by the true digitalis bodies. Before discussing the final experiment we will take up the results given in Table 5 in some detail.

Every one who has worked with animals in the standardization of drugs knows that the use of enormous doses introduces disturbing factors which cannot be explained readily in some instances. In the present case we desired to inject the whole of the fluidextracts intravenously, but when the menstruum was altered by evaporation the preparations became muddy in appearance, and not altogether fit for intravenous use, but the addition of sufficient alcohol to make them clear would have defeated the purpose of the evaporation; hence these were used containing variable amounts of alcohol and insoluble matter in suspension. While these could have no protective effect against digitalis actions they might easily disturb the experiments.

Even though we grant the utmost that the most biased could demand the activity of the fluidextracts is absolutely negligible, since 5 c.c. of these correspond to about one-hundredth of a milligram of ouabain, or, to put it somewhat differently, the oral dose of such fluidextracts corresponding to 5 milligrams of ouabain would be 2,500 c.c., or more than half a gallon. The improbability of there being an active principle present in *Cactus grandiflorus* is very great. If it were no more active than impure digitalin, the least active constituent of digitalis, there could not be more than one part present in 15,000 parts of cactus to account for this supposed activity, but we are not acquainted with principles present in such infinitesimal amounts, and on the other hand should

the cactus contain as much as 1 per cent. of an active principle then it must be of such slight potency that the ordinary therapeutic dose would have to be about 25 grams, or one ounce.

Our final effort to detect even traces of a digitalis action was made in the following way: Fifty c.c. of Warner's fluidextract (mentioned above) was evaporated in a jet of cold air to a volume of 20 c.c. The precipitate consisted mainly of chlorophyll. The residue was filtered, the filter washed, the filtrate and washings mixed and water and salt added so that the mixture measured 42 c.c., and had the concentration of normal salt solution.

The whole of this solution was injected slowly into the femoral vein of a cat weighing 1.68 kg.; the dose, corresponding to 30 c.c. of the fluidextract per kilogram of weight, caused no perceptible effect, and ouabain was then injected very slowly, and with frequent interruptions, until the animal died. This experiment was conducted with the utmost care to avoid the injection of any excess of ouabain over the minimal amount required to cause death. The result was striking and entirely failed to show a trace of digitalis (or any other) action on the part of the cactus. The cat required just 0.107 mg. ouabain per kg., or 107 per cent. of the normally fatal dose, a result wholly within the limits of error.

We are firmly convinced as the results of these experiments that there is no possible way of demonstrating that *Cactus grandiflorus* possesses any cardiac action in the slightest degree.

The fluidextracts of *Cactus grandiflorus* of different manufacturers were administered to three patients for periods of one week, and to two others for shorter periods, but there was no perceptible effect and their use was discontinued.

DISCUSSION

The literature concerning *Cactus grandiflorus*—and in this connection it is to be understood that reference is not made to the pseudo-literature of any secret or semi-secret preparation—is not very extensive, and would well repay perusal by those who use this drug clinically. A report to the Council on Pharmacy and Chemistry⁶ summarizes the essential facts in the literature relating to cactus, but a careful analysis of the subject requires that certain papers shall be discussed in some detail.

Cactus grandiflorus was introduced into medical practice mainly through the recommendation of Dr. Rubini,⁷ a homeopathic physician of Naples, about forty-five years ago. He used very small doses of a 25 per cent. tincture made by macerating the crushed drug in 95 per cent. alcohol. A. F. Pattee⁸ recommended it for functional palpitation in doses of from one to five drops of a 25 per cent. tincture, but he gives little evidence of its value to support his recommendation. N. S. Davis⁹ reported the use of cactus in two cases of palpitation with *apparent* benefit. It is to be noted particularly that Davis did not assert that cactus had any actual value; he merely used it in these two cases and said that the patients were benefited apparently. Naturally, no conclusions could be drawn from the casual observation of two cases, and he did not attempt to draw conclusions.

A number of papers appeared in the *Therapeutic Gazette* in the next few years in which cactus is extolled highly, but these papers are not wholly convincing.

6. THE JOURNAL A. M. A., March 12, 1910, p. 888.

7. See abstr. Med. Rec., iii, 299; and King's American Dispensatory, ed. 18, revision 3, p. 374.

8. Boston Med. and Surg. Jour., 1867, lxxi, 537.

9. Philadelphia Med. Times, 1879, x, 26.

Engstad¹⁰ cites an instance of "lingering typhoid pneumonia" with the heart becoming feeble after the second week, in which cactus stimulated the heart immediately, after digitalis and strychnin had failed. Engstad mentions the fact that most preparations are inert, but that Parke, Davis & Co. and Merck make excellent preparations.

Hills¹¹ states that cactus acts especially on the circular fibers of the heart and arteries, causing irritability, hyperesthesia, neuralgia, spasm and palpitation. He says that cactus resembles digitalis in respect to its power of producing heart-failure, and that this is due to the secondary effect in the case of both. He states that cactus resembles aconite in the effect on the heart much more than it does digitalis. Hills gives no evidence to sustain his statement regarding the highly selective action of cactus for the "circular fibers of the heart and arteries." It would be interesting in the light of our own experiments to know just what preparation Hills used.

Among those who report clinical studies of cactus is R. W. Wilcox,¹² who used it in 23 cases of cardiac disease. The following statement made by Wilcox is of interest in this place: "The particular preparation that I have employed, because after experimentation it is the only one that I have found to give uniform results, is the fluidextract of Parke, Davis & Co. in dose of ten to thirty minims." It would be interesting to have the protocols of the observations in which other preparations were used without satisfactory results, but this information is not given in the article.

Williams¹³ reports the use of cactus in the treatment of nearly 200 cases of cardiac disease during some years, but he refers to certain physiologic experiments as explaining his results, but those experiments were not made with *Cactus grandiflorus*, and if his results accord with those experiments we must suppose that he too, like Gordon Sharp, failed to secure the true *Cactus grandiflorus*, and that Williams worked with some species of cactus having a strychnin action.

Sayre found that cactus supplied by J. U. Lloyd produced little or no effect on frogs, and he sent a specimen of the tincture to E. M. Houghton who found that very large doses produced no perceptible effect when used intravenously on dogs. They reported¹⁴ that the drug is worthless as a substitute for digitalis.

When one attempts to explain why cactus—and under this term we include its preparations and derivatives, proprietary and non-proprietary—attained some degree of popularity in the treatment of cardiac diseases he is confronted with certain difficulties, for the explanation involves a consideration of conditions which are known to exist, but for which sufficient evidence is lacking in individual cases. In the first place it is well known, but often forgotten by enthusiasts, that patients usually tend to recover regardless of the disease or the drugs used in its treatment. Enthusiasts of all ages are too prone to attribute the benefit observed to the latest drug used; and this appears to be true especially in cardiac disease, in which rest in bed and the substitution of a proper diet will often accomplish more than any drug or combination of drugs. Hence an inert substance may attain a certain vogue.

In the second place, when a new vegetable drug is put on the market, a financial harvest awaits the pharma-

ceutical manufacturer who is alert to convince practitioners that his preparation of that drug is superior to other makes and that the substitution of spurious drugs is common. This may be accomplished in various ways. We are all more or less familiar with the so-called "house-organs" and with the testimonials of men whose affiliations tend to make them unduly optimistic when the preparations of certain firms are under consideration.

Having attained popularity, the continued use of cactus or its preparations calls for a somewhat different explanation. Disappointment, following the use of the digitalis bodies, undoubtedly leads many physicians to seek harmless substitutes for the better-known and more potent drug, and when one happens to see improvement follow the use of cactus after some particularly unfortunate experience with digitalis, one is apt to incline to the continued use of the more harmless or, rather, the inert drug, unless his facilities for clinical study are above the average.

There can be no gainsaying the fact that the mastery of digitalis therapy presents many difficulties; that many physicians have failed to accomplish this mastery, and that disappointment proportionate to the lack of that mastery will almost inevitably follow its use, for it is like a two-edged sword, as potent for harm as for good.

And thus we find that the reason for the use of cactus often lies in ignorance of the resources at our command, and this accentuates the need for the more careful study of the actions of the true digitalis bodies in cardiac disease, for it is certain that the physician who depends on cactus or any derivative or preparation of it, deprives himself deliberately of his medical armamentarium in the treatment of conditions which imperatively demand all the resources at his command. Pathology has added much to our exact knowledge, but we gain little thereby if we waste it through the use of inert or little known drugs.

So much for the actual conditions; the arguments with which the users of cactus attempt to justify their position require consideration. These arguments suggest the position of the bats when the birds and the beasts were at war. When evidence is furnished that cactus has no digitalis action, the fact is admitted usually, and they advance claims which are decidedly vague, and it is significant that it now finds its warmest supporters among those who recommend it in the treatment of the so-called functional disorders of the heart, or precisely those conditions which are known to require no medication or treatment of any sort beyond abstaining from the habits which induce the disturbance.¹⁵

While thus disclaiming that cactus has any digitalis action, the adherents do not hesitate to quote those who have used it in precisely those conditions for which digitalis is known to be useful, and who have declared it to be superior to digitalis. As examples of this we may cite the following authorities who are nearly always quoted when cactus therapy is being upheld by references to the literature.

Ellingwood¹⁶ states that cactus is in every way superior to digitalis; that cactus exerts a direct action on the cardiac plexuses, regulating functional activity, improves the nutrition of the heart (by what means is not stated); that it increases the contractile power and energy of the

10. Therap. Gaz., 1890, new series, vi, 606.

11. N. Y. Homeopathic Med. Times, 1891, xviii, 295.

12. Post-Graduate, 1891, vii, 85.

13. Practitioner, 1891, xlvii, 266.

14. Therap. Gaz., 3 ser., 1906, xxii, 812.

15. After this was written one of us observed an arrhythmia due to the use of caffeine. It was considered a good opportunity to try cactus, but when the heart was examined 12 hours later the arrhythmia had disappeared spontaneously before the cactus could be obtained.

16. Med. Rec., 1905, lxxvii, 857.

heart through the cardiac ganglia and accelerator nerves, increases the musculomotor energy, and elevates arterial tension; that it increases the height and force of the pulse wave, often acts more quickly than strychnin or digitalis, and is a true sedative when the pulse is rapid and feeble and the heart weak.

We are not aware how these conclusions were deduced, but they appear to be based on clinical observations alone and are unsupported by any instrumental evidence.

Wilcox¹² used cactus in mitral and aortic stenosis and regurgitation. Aulde¹⁷ states that cactus is distinctly a cardiac tonic, free from the so-called cumulative action of digitalis. He states that cactus proved useful in dilatation with hypertrophy accompanied by a murmur. Gregory¹⁸ endorses all that Aulde says. Herwisch¹⁹ used cactus in cases of valvular diseases of the heart with good results when digitalis, strychnin and strophanthus did not improve the condition of the patient.

It would be well for those who use cactus while admitting that it has no digitalis action to cite other authorities than those just mentioned in support of their positions. But it would be a little unfair perhaps to judge severely many who quote the literature, as the perpetuation of certain small blunders suggests that the original literature of cactus is not consulted usually, and it seems probable that some of those who have been guilty of this inconsistency are not aware of the fact.

CONCLUSIONS

We have been unable to obtain any evidence that the true Mexican *Cactus grandiflorus* possesses any pharmacologic action whatever, but on the contrary, it appears to be a singularly inert substance when administered either by the mouth or by the vein.

When colossal doses of *Cactus grandiflorus* are given by the vein they sometimes—but not always—appear to exert an extremely feeble action on the heart; but this action is so slight that its nature could not be determined.

Even the most colossal doses of *Cactus grandiflorus* administered by the mouth to cats, dogs and frogs exert no perceptible effect.

If we are correct in maintaining that *Cactus grandiflorus* is inert it hardly requires further proof that any substance extracted from the drug must be inert also.

We wish to acknowledge our indebtedness to those who have assisted us in procuring authentic specimens of *Cactus grandiflorus* and to Mr. Maurice I. Smith for assistance in carrying out many of the experiments.

414 East Twenty-Sixth Street—122 East Thirty-Fourth Street.

Multilocular Cystic Hygroma of Neck.—In a healthy child, aged 4, who had had no children's diseases, a small, soft swelling was noticed in the angle between the left clavicle and the anterior border of the trapezius two weeks after birth. This had grown progressively in an upward and forward direction, more rapidly sometimes than at others. It had seemed to swell up at times and then decrease in size again. The last few months it had grown much more rapidly. There was no pain or dyspnea. A fortnight ago the portion beneath the lower jaw became painful and tender, with a rise of temperature to 100 F. The temperature subsided in a week, leaving this portion of the swelling hard.—Charles P. Childe, *Proc. Roy. Soc. Med.*, July, 1910.

ARTIFICIAL STIMULATION AND INHIBITION OF THE GROWTH OF NORMAL AND SARCOMATOUS TISSUES

A FOURTH ARTICLE ON CULTIVATION OF TISSUE IN VITRO *

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AND

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We have studied by the method of cultivation of tissues *in vitro*, the properties acquired by the plasma during the development of an experimental malignant tumor. The experiments were performed on chickens of thoroughbred stock, obtained from the same farm, inoculated with the sarcoma propagated by Dr. Peyton Rous. Fragments of this tumor and of normal tissues of chick embryos and adult individuals were cultivated comparatively in the plasma obtained from normal animals and in the plasmas obtained from sarcomatous chickens at different stages of the disease. Sharp differences in the rate and in the dimensions of the growth could easily be observed, even without the use of the microscope.

INFLUENCE OF NORMAL AND SARCOMATOUS PLASMAS ON THE GROWTH OF SARCOMATOUS TISSUES

Sarcoma cultivated in the plasma of the individual bearing the tumor grew very extensively. The area covered by the new cells in twenty-four hours was often fifteen or twenty times larger than the area of the primitive fragment. When the same sarcoma was cultivated in the plasma of a normal animal its growth was active although less extensive than in the plasma of the same individual. The same sarcoma cultivated in the plasma of another sarcomatous animal grew very little or even did not grow at all. If the plasma was taken from an animal recently inoculated and bearing a small tumor, it inhibited slightly only the growth of the tumor, but if it belonged to an animal bearing a very large and actively growing tumor it prevented completely the development of the cultures. Therefore the *plasma of a sarcomatous animal acquires the property of inhibiting the growth of a sarcoma taken from another animal.*

What causes the inhibition? Is it due to substances secreted by the tumor or to substances produced by the organism as a reaction against the tumor? If the inhibition is caused by substances secreted by the tumor and contained in the blood of the sarcomatous animal it might be possible to give that inhibiting power artificially to normal plasma by adding to it serous extract of sarcoma. Therefore we added a little sarcomatous extract to cultures of sarcoma in normal and in sarcomatous plasmas. The growth of sarcoma in normal plasma with sarcomatous extract was markedly accelerated. It showed, evidently, that the inhibiting power of sarcomatous plasma was not due to substances secreted by the tumor. Then it is, possibly, caused by substances produced by the organism as a reaction against the tumor. It is important to consider that the inhibiting power of the sarcomatous plasma is felt only by a tumor belonging to another animal, that is, by a homogenic tumor. The tumor belonging to the animal which has given the plasma, that is, the autogenic tumor, is not affected by the inhibiting substances. If a tumor could be sensitized to the action of the inhibiting substances

17. *Therap. Gaz.*, 1891, new series, vii, 315.

18. *Therap. Gaz.*, 1891, new series, vii, 426.

19. Philadelphia Polyclinic, 1894, iii, 444.

* From the Laboratories of the Rockefeller Institute for Medical Research.

existing in the plasma of the organism on which it grows, its development in the same plasma would probably be prevented.

INFLUENCE OF NORMAL AND SARCOMATOUS PLASMAS ON THE GROWTH OF NORMAL TISSUES OF NORMAL AND SARCOMATOUS ANIMALS

The comparative action of normal and sarcomatous plasmas was studied on normal spleen of sarcomatous animals, on normal spleen of normal adult animals, and on spleen, cornea, cartilage and skin of embryo chicks, eight and fifteen days old.

The plasmatic medium was taken from normal adult animals and from animals bearing small and recent tumors, or old and extensive tumors.

Fragments of spleen extirpated from a normal animal grew sometimes at the same rate in normal and sarcomatous plasmas, but it happened also very often that they grew more quickly and more extensively in sarcomatous plasma.

Fragments of spleen extirpated from a sarcomatous animal grew almost always much more quickly and extensively in sarcomatous plasma than in normal plasma.

It was also observed that spleen taken from chick embryos grew very much better in sarcomatous than in normal plasma. Embryonic connective tissue also showed a larger development in sarcomatous plasma.

The activation of growth produced by the sarcomatous plasma is affected in a large measure by the size and the age of the tumor of the animal which gave the plasma. Plasma from an animal with a large and old tumor is more stimulating for normal tissues than the plasma from an animal with a small and recent tumor.

What causes the stimulating action of sarcomatous plasmas on normal tissues, and especially on spleen?

It may be substances secreted by the tumor and diverted into the blood. In some experiments the growth of normal tissues cultivated together with fragments of tumor in normal plasma was noted to be accelerated. The results were not constant but showed that sarcoma may stimulate the growth of a tissue under certain ill-determined conditions. Therefore we attempted to modify the action of normal plasma by adding to it a little serous extract of sarcoma. Several series of experiments of that kind were performed. Normal spleen was cultivated in normal and sarcomatous plasma. In one of the series a little sarcomatous extract was added to normal and sarcomatous plasma. In the series in which no extract was added spleen grew very much better in sarcomatous than in normal plasma. On the contrary, in the series in which extract was added spleen grew more quickly and more extensively in normal plasma. It showed that normal plasma had become stimulating by mere addition of a little sarcomatous extract. The same experiments were repeated with embryonal spleen. Embryonal spleen was exceedingly sensitive to the action of the extract. We observed a very marked and sometimes an enormous acceleration of the growth. In one case, the area covered in twenty-seven hours by the new cells was almost forty times larger than the area of the primitive fragment. In a few days the primitive fragment resolved itself into cells and disappeared almost completely. Therefore, the stimulating influence for normal spleen acquired by the sarcomatous plasma may be due to a substance produced by the tumor and analogous possibly to the serous extract of sarcoma.

Is the stimulating substance specific to sarcoma, or is it contained in all actively growing tissues of connective and other types? We had already observed that the growth of cartilage can be stimulated by a fragment of quickly growing spleen, and that a new culture of spleen is activated by addition of a little piece of spleen in full growth. Nevertheless, fragments of spleen cultivated in plasma with tumor and embryonal extract, showed that tumor extract has a very much more energetic stimulating power than embryonal tissues extract.

These biologic characteristics of sarcoma have been studied only on the tumor of Dr. Rous. It will be important to ascertain whether they apply only to this sarcoma or if they express a more general law of development of experimental malignant tumors.

Sixty-Sixth Street and Avenue A.

GROWTH IN VITRO OF THE TRANSPLANTABLE SARCOMAS OF RATS AND MICE*

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NEW YORK

Carrel and Burrows¹ have recently shown that, through the substitution of blood plasma for lymph, Harrison's method of growing *in vitro* the tissues of the frog embryo may be extended to mammalian tissues, human and fowl sarcomas. A brief description of their technic as applied to chick embryos has just appeared.² This procedure opens such a splendid field for experimental cancer investigation that its application to the transplantable rat and mouse tumors seems highly desirable. The size of rats and mice offers a difficulty, since the insertion of a cannula into any of the easily exposed vessels of young rats of the size best suited to tumor inoculation is rather tedious, and this difficulty is obviously greater in mice. Moreover, it appeared to us that the injury to the vessel lining through the use of a cannula would cause as much contamination with tissue juices (activator) as a simpler and easier method that we shall describe.

METHOD

The carotid artery is exposed by careful dissection for its entire length in the neck and after ligating above and clamping below with light serrefine forceps of easy grasp, is nicked with sharp-pointed scissors. The flap so made is caught with delicate forceps and the artery severed. The end of the vessel and the supporting forceps are covered with olive oil, the clamp released and the blood allowed to spurt into paraffined glass tubes of small caliber. The first drop or two of blood should not be used. In young 60 gm. rats approximately 1 c.c. of blood may be taken without causing the death of the animal. This yields a little less than 0.5 c.c. of plasma, a quantity sufficient for fifteen to twenty preparations. Twice as much plasma can be secured by bleeding the animal to death, but in many instances, as for example, in immunity studies, this may not be desirable. We have found that plasma obtained in this way remains fluid for at least a half hour and can probably be kept

* From the Department of Pathology, College of Physicians and Surgeons, Columbia University (The George Crocker Cancer Research Fund).

1. Carrel, Alexis, and Burrows, Montrose T.: Cultivation of Adult Tissues and Organs Outside the Body, *THE JOURNAL A. M. A.*, Oct. 15, 1910, p. 1379; Cultivation of Sarcoma Outside of the Body, *THE JOURNAL A. M. A.*, Oct. 29, 1910, p. 1554.

2. Burrows, Montrose T.: The Cultivation of Tissues of the Chick Embryo Outside the Body, *THE JOURNAL A. M. A.*, Dec. 10, 1910, p. 2057.

much longer if a low temperature is maintained. The remainder of the technic is the same as that described by Burrows, except that the tissues were teased at room temperature instead of body temperature.

We have grown *in vitro* a spindle-cell rat sarcoma and a mixed-cell mouse sarcoma, both from Ehrlich's laboratory. The rat sarcoma on transplantation gives 80 to 90 per cent. of "takes" in young animals and pursues a rapid course. In cultures we obtained growths in 70 to 90 per cent. of the preparations. Plasma from normal young rats seems to afford as good culture medium as that from the tumor-bearing animals. Routine examinations were made eighteen hours after "inoculation." At this time a certain percentage show a luxuriant growth far into the media, similar to that described by Carrel and Burrows for the Rous fowl sarcoma. Others show offshoots at various points extending several cell lengths, giving the specimen a prickly appearance. The type of cell varies with the rapidity of growth and age of the culture. In the early sprouting type of growth, the cells are long, spindle-shaped and finely granular. In later stages the cells become coarsely granular. These granules are brilliantly stained by Sudan III and Scharlach R. Where the growth has been very luxuriant the cells are irregular in shape, triangular, spindle-shaped or rounded, with long processes at one or several points. In some specimens growth does not begin until thirty-six or forty-eight hours. The cell type in these latent growths is distinctly different from that in the early wildly growing specimens and suggests that we may be dealing with a proliferation of connective tissue (stroma). Further study will be necessary to settle this point. We have not determined the final limit of growth but have noted that growth may continue for at least four days. Sections of the preparations show that most of the cells of the original piece of tissue remain alive. Mitoses are frequent.

The mouse sarcoma employed gives about 90 per cent. of "takes" when transplanted, grows rapidly and usually kills the host in four to six weeks. It may also be successfully transplanted into rats, in which for the first ten days it grows as well or better than in mice, afterwards undergoing rapid retrogression. This phenomenon suggested the use of rat plasma as a culture medium, since, apart from the value of determining the possibility of growing mouse sarcoma in rat plasma, the larger quantity of plasma obtainable facilitates the technic. Results were positive in a majority of the preparations. The growth in some was even more luxuriant than in the case of the rat sarcoma.

This preliminary study, then, indicates that cultural methods may be easily adapted to the experimental investigation of the transplantable rat and mouse tumors.

437 West Fifty-Ninth Street.

A CASE OF GANGRENE OF APPENDIX AND OMENTUM

OPERATION AND RECOVERY

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History.—The patient, R. R. A., O. S., was admitted to the hospital at 11 a. m., Dec. 10, 1909. Patient had reported at sickcall on morning of December 8, complaining of pain over entire abdomen, and diarrhea. On December 9, pain became localized in right iliac region. Temperature 99.5 F., pulse 82,

respiration 18. On the evening of the 9th, temperature was 101 F., pulse 84, respiration 24; tenderness over right iliac region.

Examination.—On admission to the hospital the temperature was 101 F., pulse 120 and respiration 22, with pain and tenderness over appendix and rigidity of right rectus muscle. The patient was prepared for operation, which was performed at 2 p. m. Just prior to the operation the temperature was 101.4 F., pulse 122, and respiration 22.

Operation.—Under general anesthesia (ether) and with the usual aseptic and antiseptic precautions, an incision was made over McBurney's point, through the abdominal wall and into the abdominal cavity. The peritoneum was found much thickened from recent inflammation. The appendix was bound down by adhesions and its distal end was wrapped up in, and surrounded by, a dense mass of inflamed and gangrenous omentum. The last 1½ inches of the appendix were gangrenous, and it had ruptured about half an inch from the tip. Adhesions were broken down and the appendix was amputated, stump cauterized and invaginated into the cecum by a purse-string suture. The inflamed and gangrenous omentum (3 by 6 by 1½ inches) was ligated and amputated. The appendix was 5½ inches long, 1½ inches in circumference at its base and 2 inches in circumference near its tip. After removing the appendix and omentum, the abdominal cavity was flushed out with hot normal salt solution and the wound in the abdomen closed for two-thirds of its extent (peritoneum with fine catgut; muscles with ehromicized gut; and skin with silkworm gut), and a drainage-tube inserted into the open one-third and dressings and a bandage applied over all.

Subsequent Course.—Patient was returned to bed in fairly good condition. At 7 p. m. his temperature was 100 F., pulse 120, and respiration 20, and he was given 1,500 c.c. of normal salt solution by proctoclysis; complained of some pain and tympanites. The patient was given a liquid diet and salol internally and did well, the wound closing slowly from the bottom, and the discharge lessening daily until January 10, when it was entirely healed and the entire gastro-intestinal tract in excellent condition and working normally. He has continued in excellent health since his recovery from operation.

This case shows what a serious condition of affairs may exist in the abdomen before any symptoms are observed; and even when symptoms do make their appearance, they are by no means indicative of the severity of the condition causing them. The symptoms in this case would not have led one to think that such a wide-spread gangrenous condition was present in the abdomen.

UMBILICAL HERNIA—AN UNUSUAL CASE DAVENPORT WHITE, M.D.

NEW YORK

Umbilical hernia in itself is, of course, not at all uncommon, but the symptoms in this case were so peculiarly veiled that a brief summary may be of interest.

History.—Mr. X., aged 50, weight 160 pounds, had had the ordinary children's diseases with no complications; always enjoyed good health; no history of abdominal trouble of any kind. Three weeks prior to the first time I saw him, following a violent attack of sneezing (unrestrained), he suddenly had a sensation as if something had given away in his abdomen, and in a short time he was seized with an acute lancinating pain, centralized two inches to the right and one inch below the umbilicus. Generally it was of a grumbling character, giving the patient constant unrest. The duration was from a few hours to three days and was not influenced by standing, exercise, lying on the back or side or sitting. The patient would sometimes be awakened out of a sound sleep by the agonizing pain. It caused no gastric or intestinal disturbance. The general health, appetite, and so forth, were excellent. Rheumatic treatment, opiates and various applications (heat and cold, salves, lotions, etc.) were used to no avail by various physicians.

Examination.—The patient was a man in the prime of life, of good color, etc., but with a worried expression. No adventitious signs of any nature were noted until I came to a more intimate abdominal examination. The abdomen was rounded, with a tendency toward a slight protuberance; the navel was deep and no impulse seen on coughing suggestive of a hernia of any kind; no rigidity or spasm of abdominal muscles and no sign of tenderness on pressure even over the point (above mentioned) where he said that his pain was localized. There was no tenderness over McBurney's point, even with the psoas put on the stretch (Weir's method). On inserting the tip of the little finger into the umbilicus and getting the patient to cough, I noted a distinct impulse. This impulse was in the lower right quadrant and I could make out a loss of substance of the ring, wedge-shaped with the base of the wedge directed outward. Over this edge, on pressure, the patient complained of pain which was sufficiently acute to make him wince.

Treatment.—A proper abdominal truss with plate attachment was ordered and all discomfort subsided and has not returned after some months' duration, except when temporary removal of truss caused a return of the previous symptoms. The patient is still wearing the truss.

CONCLUSIONS

A portion of the great omentum must have been forced into this wedge-shaped space and either by pressure on its raw edge or a squeezing of the peritoneal lining, involved a nerve filament and thus referred the pain, not at the site of the trouble, but downward to the point the patient elected.

171 West Ninety-fifth Street.

TRANSFUSION OF BLOOD BY A NEW METHOD, ALLOWING ACCURATE MEASUREMENT

PRELIMINARY REPORT *

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During the past year, we have had occasion to perform, in conjunction with some experimental work, a considerable number of transfusions on dogs, the result of which will be reported at a later date. One of us, together with Dr. Louis Pollock of the Dunning Infirmary, has also transfused thirteen human patients afflicted with pellagra. In all of these cases, with one exception, the artery-to-vein method of Crile was employed. In one instance vein-to-vein anastomosis was performed.

From study of the literature, as well as personal experiences, we have obtained certain impressions of the most approved methods of transfusion now in vogue, which we would summarize as follows:

1. The operation requires delicate technic, such as is possessed only by those who have had extensive experience in blood-vessel surgery.

2. Considerable time is consumed in performing anastomosis of the vessels.

3. The rate of flow and the amount of blood transfused are not measurable.

4. The flow of blood sometimes ceases before the desired amount has been transfused, even though the operative technic is excellent.

5. Movement of either donor or recipient may tear the vessels apart at their point of union, in spite of the watchfulness on the part of the operators.

6. In infectious patients there is always danger of transfer of infection from the recipient to the donor. This is most liable to occur through the rubbing of the raw surfaces which are held or bound together during the entire procedure.

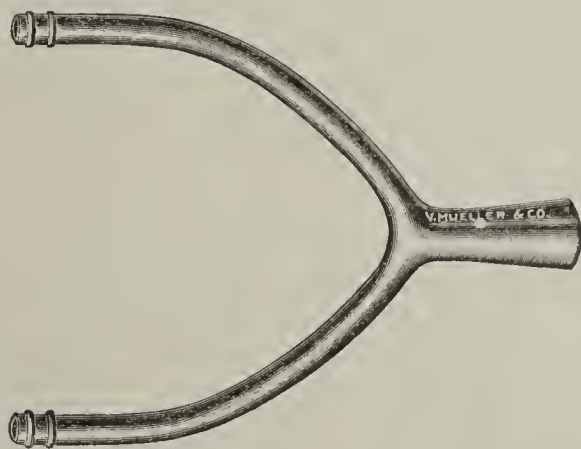
We believe that the method which we now employ overcomes most of these difficulties. Thus far it has proven entirely satisfactory.

The studies of Freund and Bordet and Gengou¹ have demonstrated that blood introduced into vessels coated with paraffin petrolatum remains uncoagulated for several hours. Practical use of this fact has been made in the development of our method.

The following instruments are required:

The usual instruments for exposure of vessels and suture of wounds; three mosquito forceps; two vessel clamps; one 100 c.c. Porges ground-glass syringe; and one especially constructed ground-glass or metal Y cannula.

The cannula consists of a neck and two arms (see illustration). The tips are 2 to 3 mm. in diameter and are provided with slightly raised collars to guard against slipping of ligatures. The neck of the cannula has a conical lumen which forms a firm smooth union with the end of the Porges syringe, which is inserted into its base. (Any other carefully constructed ground-glass syringe serves the purpose equally well.)



The syringe and cannula are sterilized by the dry method, fitted together under aseptic technic and uniformly warmed over a flame. About 25 c.c. of sterile hot petroleum is then aspirated into the apparatus, and, after the latter is thoroughly and rapidly coated by working the piston up and down, the excess is forcibly ejected through the ends of the cannula.

The median basilic or other prominent vein of the elbow region is now exposed in both donor and recipient for a distance of 2 to 3 inches. The vein of the recipient is ligated at the end toward the hand, stripped of blood toward the heart and a rubber-protected vessel-clamp applied as far as possible away from the ligature. A clamp is then applied to the distal end of the donor's vein, the vessel is stripped toward the heart and ligated proximally. Each vessel is in turn cut squarely across near its ligature, caught up at three equidistant points by mosquito forceps and irrigated with warm salt solution. A cannula end is introduced into each vein and tied in position so that one cannula is continuous with the recipient's vein and the other with the vein of the donor. The clamp on the donor's vein is released and a syringe of blood is carefully aspirated. The clamp is then replaced and the one on the recipient's vein removed. The blood is very slowly injected into the recipient and the clamp reapplied. This procedure is then repeated until sufficient blood has been transfused.

* From the Memorial Institute for Infectious Diseases. This work was aided by a grant from the Fenger Memorial Fund.

1. Ann. de l'Inst. Pasteur, 1903, p. 822.

REPORT OF EXPERIMENTS

EXPERIMENT 1.—Large dog. A medium-sized saline transfusion cannula to which a 100 c.c. Porges syringe was accurately fitted was sterilized and well lubricated with petrolatum. The external jugular vein was exposed, a slit made in it at its upper end, and the cannula tied into the vein pointing away from the heart. Eighty c.c. of blood were aspirated into the syringe and the vein was ligated above the cannula. A slit was then made in the vein an inch nearer the heart and the cannula inserted pointing toward the heart. The blood was slowly injected, the vessel was ligated and the incision closed. Uneventful recovery.

EXPERIMENT 2.—Small dog, donor; medium-sized dog, recipient. A Y cannula and a 100 c.c. Porges ground-glass syringe were used, after usual preparation of the apparatus. External jugular vein of each dog exposed. The vein of the recipient was ligated near the distal end, stripped of blood and an artery clamp applied proximally. The recipient was bled 100 c.c. from another vein. An artery clamp was placed high up, distally, on the vein of the donor, the vessel was stripped of blood and ligated at the end nearest the heart. Each vein was in turn cut squarely across near the ligature, caught up at equidistant points with mosquito forceps and irrigated. Each vein was then slipped over an arm of the cannula and tied in position. The cannula tips now pointed toward the head in the donor's and toward the heart in the recipient's vein. The clamp on the donor's vein was removed and the syringe filled with blood, after which the clamp was reapplied. The clamp on the recipient's vein was then removed and the blood (100 c.c.) slowly injected. The clamp was then reapplied. The process was repeated and 75 c.c. more of blood were injected into the recipient's vein. The vessels were ligated and the wounds closed. Blood retained in the apparatus was liquid.

Results.—Blood-smears twenty-four hours afterward showed red cells normal in all respects. There was a normal percentage of polynuclear leukocytes, and no evidence of phagocytosis of the red cells could be found. Observation of the recipient for a number of days showed nothing abnormal.

EXPERIMENT 3.—Medium-sized dog. Usual preparation of apparatus. Three-inch exposure of external jugular vein. A clamp was placed high up on the vein, the blood was stripped out of it and a clamp placed nearer the heart. The vessel was then cut in the center between the clamps, the cut ends grasped with mosquito forceps, irrigated and each cut end slipped over one arm of the cannula and tied in position. One hundred c.c. of blood were transfused from the distal into the proximal end of the vein. Uneventful recovery.

EXPERIMENT 4.—Medium-sized dog. A 100 c.c. one-piece tubular glass chamber with divergent cannula at its base was used. Transfusion from the common carotid into the internal jugular vein toward the heart was performed. A large aspirating syringe fitted to the neck of the chamber exerted the desired positive and negative pressure. Four hundred c.c. of blood were transfused. Recovery prompt.

EXPERIMENT 5.—Medium-sized dog. Apparatus as in Experiment 4. Both external jugular veins were exposed and 350 c.c. of blood were transfused from the left into the right toward the heart. Uneventful recovery.

EXPERIMENT 6.—Two medium-sized dogs. Apparatus consisted of the Porges syringe and Y cannula with usual preparation. The donor in the experiment had been the recipient in one of the preceding experiments. Internal jugular of donor and external jugular vein of recipient exposed. Vessel clamp on the distal end of the donor's vein, which was stripped free of blood and ligated toward the heart, cut near the ligature, the end irrigated and tied over one end of the cannula. The recipient's vein had vessel clamp applied proximally. The vein was ligated toward the head and cut across near the ligature, the end irrigated and tied over the other arm of the cannula. Two hundred and fifty c.c. of blood were transfused from the donor into the recipient. Recovery was uneventful.

TRANSFUSION IN A HUMAN SUBJECT

Thus far, we have used our apparatus in but one human transfusion. The donor was a healthy, middle-aged man with negative history. The recipient was a patient about 50 years old with a severe case of pellagra. Preliminary hemolysis tests were negative. The patients were placed side by side with heads in opposite directions; their left arms were extended at right angles so that their elbows were in apposition. Preliminary to the transfusion a moderate amount of blood was removed from the recipient. The median basilic vein of each was freed by dissection for a distance of about three inches. The vein of the recipient was ligated distally, stripped in a proximal direction and a clamp applied high up. A vessel-clamp was applied to the distal end of the donor's vein, the vessel was stripped in a proximal direction and ligated. Petrolatum was applied to the field of operation. The vessels were in turn cut squarely across, caught with mosquito forceps, washed out with salt solution and tied over the arms of the Y cannula. One hundred and sixty c.c. of blood were transfused. Uneventful recovery.

Some may hesitate to use the apparatus because of the fear of fat embolism from the petroleum used to coat the instruments. Certain facts which speak strongly against such a possibility may be mentioned. Physiologic salt solution at body temperature, repeatedly aspirated and expelled from the petrolatum-coated syringe, did not show an accumulation of fat on the surface of the solution. Even were fat introduced into the circulation, (and this we think unlikely) it would be in an amount so small that no serious effects could result. The animals used in our experiments showed no evidence of embolism. Carrel,² in performing vessel transplantation, used large segments of vessels which had been placed in petrolatum; he reports no ill effects.

While our technic seems simple, every step outlined in its execution is essential to its success. The careful coating of the apparatus with petrolatum, stripping of the vessels, thorough cleansing of their cut ends with salt solution, and gradual injection of the blood are most important. The method is in accord with experimental observations and has thus far proved entirely successful in practice, yet it must be understood that this report is a preliminary one, and that the work is as yet in the experimental stage. At present, however, the method appears to possess the following advantages:

1. The amount of blood transfused can be accurately measured.
2. The rate of flow may be definitely controlled.
3. There is simplicity of technic with great saving of time. In emergency cases this should be of great benefit.
4. Success in the transfer of blood is assured.
5. There is lessened danger of transfer of disease from the recipient to the donor.

103 State Street—72 East Madison Street.

Large-Celled Sarcoma of Brain.—The patient, a boy aged 16, was brought to the out-patient department for deafness. On investigation there seemed to be no deficiency in the auditory apparatus, but very slow cerebration. No paralysis or other motor symptoms were found, except tremors of hands and nystagmus. Sight was good, but there was double optic neuritis, slight pain in the head, and no vomiting, except on one day. He was admitted as an in-patient a few days later, and he became progressively more and more drowsy; he could, however, take his food, and had no incontinence. About two weeks later sight began to fail rapidly; there was intense optic neuritis in both eyes. An operation was proposed to relieve pressure, but the patient in about twenty-four hours passed into a condition of coma and died from apparently sudden cardiac failure.—John T. Leon, *Proc. Roy. Soc. Med.*, July, 1910.

2. Carrel: *Ann. Surg.*, 1910, lii, 462.

DIPHTHERIA IN ITS RELATION TO
PUBLIC HEALTH

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Many of the difficulties encountered by those engaged in public health work arise from the failure of many practitioners to realize the significance of certain facts that are matters of common knowledge to laboratory workers. The following paper is based on an analysis of the examinations of throat cultures at the bacteriologic laboratory of the Indiana State Board of Health. The facts presented are not essentially new, but because of their importance in public health work their rehearsal is thought to be warranted.

The total number of throat cultures examined for diphtheria bacilli during the year ending Oct. 31, 1910, was 2,288. Of these, 624, or 27.2 per cent., were positive.

The influence of school attendance on the incidence of diphtheria in this state is quite marked. Smith's report¹ to the London County Council in 1896 showed that the greatest incidence of this disease in England and Wales was among children from 1 to 3 years old, *i. e.*, before the school age. According to our statistics, however, only 17 per cent. of positive first cultures were from patients under 5 years of age, while 58 per cent. were from patients between 6 and 14, and 12 per cent. from patients between 15 and 20. The average number of positive first cultures per month during the vacation period was sixteen, as contrasted with a monthly average of seventy-seven during the school term. The influence of attendance at school appears to be most marked at the beginning of the school year, since the average for September, October and November was 110 positive cultures, while for February, March and April it was only twenty-three. The results last year were in the same proportion.

While age is an important factor in the etiology of diphtheria, it is a mistake to consider the disease exceedingly rare in adults. Thirteen per cent. of our positive first cultures were from patients over 21 years old. If cultures had been taken from as large a proportion of the cases of sore throat in adults as in children the percentage of positive results in grown persons would undoubtedly have been larger.

In 1,164 cases the physician made some definite statement as to clinical diagnosis. The results of the comparison of the clinical and bacteriologic diagnoses are shown in Table 1.

TABLE 1.—THE RELATION OF BACTERIOLOGIC TO CLINICAL DIAGNOSES

Clinical Diagnosis	Bacteriologic Diagnosis		Totals
	Positive	Negative	
Diphtheria	161	118	279
Not diphtheria	118	537	655
Doubtful	81	149	230
Totals	360	804	1,164

Of 279 cases diagnosed as diphtheria by the physician, only 161 or 57.7 per cent., proved positive. Of 655 cases diagnosed as tonsillitis, ordinary sore throat, etc., *i. e.*, "not diphtheria," 118, or 18 per cent., showed the bacilli in cultures. Out of 230 "doubtful" cases, eighty-one, or 23 per cent., were found to be diphtheria. These percentages are not materially changed if the figures for the last two years, representing a total of 2,047 positive

first culture cases, are taken. This is not due to local conditions in Indiana. At the Boston City Laboratory,² 68 per cent. of cases diagnosed as diphtheria clinically contained diphtheria bacilli; at the Philadelphia Laboratory,³ 83 per cent.; and at the Chicago Laboratory,⁴ only 34 per cent.

That the presence of a membrane or exudate is no absolute criterion in diagnosis is shown by the fact that of 845 cases in which a membrane or exudate⁵ was said to be present, only 288, or 33 per cent., were positive, while of 271 cases with no membrane or exudate, forty-three cultures, or 16 per cent., were found to contain diphtheria bacilli.

The chances of error in the clinical diagnosis of diphtheria should be borne in mind by physicians on account of the necessity of quarantine in this disease. It is evidently unjust to both the patient and his family to place him in quarantine on a clinical diagnosis of diphtheria which, in over 40 per cent. of the cases, is proved by bacteriologic examination to be incorrect. On the other hand, it is not right to endanger the community by allowing a child to go about at will because a physician, on clinical grounds alone, has pronounced the case not diphtheria. Such diagnoses are proved bacteriologically wrong in about 18 per cent. of the cases. The statement seems to be warranted, then, that a physician is never justified in depending solely on the clinical picture for final diagnosis when the results of a laboratory examination can be had within a reasonable time. This statement applies not so much to treatment as to the proper regulation of quarantine.

Of 350 positive first culture cases, in which the physicians gave some information as to exposure, in only ninety-four (26.8 per cent.) did the patient give a definite history of having been in contact with some person suffering from diphtheria. In 109 instances, 31.1 per cent., diphtheria was present in the community but the patient had not been exposed, while in 150 cases, 42.8 per cent., no source of infection could be found.

There is no law or rule in this state requiring one or more negative cultures before a patient is released from quarantine. Hence, the records of this laboratory furnish very little data concerning the length of time diphtheria bacilli may remain in the throat after apparent recovery from the disease. The records of last year, however, show that in thirty-six cases, diphtheria bacilli were still present, as shown in Table 2.

TABLE 2.—RECORDS OF PRESENCE OF DIPHTHERIA BACILLI

After 6 to 10 days in	6 cases
After 11 to 15 days in	10 cases
After 16 to 20 days in	10 cases
After 21 to 25 days in	3 cases
After 26 to 30 days in	4 cases
After 41 to 45 days in	2 cases
After 58 days in	1 case
Total	36 cases

SUMMARY

The influence of school attendance on the incidence of diphtheria is shown (a) by the very large percentage of cases that occur in children within the school age, and (b) by the higher monthly average of positive cultures received during the school months as compared with the vacation months.

2. Twenty-Ninth Ann. Rep. Health Dept. of Boston, 1900, p. 96.

3. Personal Communication from Dr. J. S. Neff.

4. Rep. Chicago Board of Health, 1905, p. 46.

5. No distinction is made here between a membrane and an exudate, because the statement of the physician was in many instances so confusing that an attempt at distinction was impracticable.

1. Smith: Jour. State Med., 1896, iv, 169.

The chances of error in the clinical diagnosis of diphtheria are so numerous and the period of time during which virulent bacilli may remain in the throat after apparent recovery is so variable that a physician is never justified in quarantining or releasing a diphtheria patient without a bacteriologic examination, if such is obtainable.

PYELITIS OF PREGNANCY

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The etiology of pyelitis complicating pregnancy is somewhat obscure. The predisposing causes are the following:

1. Pressure on one or both ureters by the gravid uterus. Experimental studies on the cadavers of pregnant women show that the right ureter is more frequently pressed on by the uterus. It is well known that the right kidney is much more frequently affected in pyelitis of pregnancy.

2. Infection of the urinary tract; cystitis, ascending or hematogenous infection above the point of pressure.

3. Constipation is often stated as a possible cause, due to the presence of *B. coli communis* as the most frequent exciting cause. The hypothesis is that constipation and its inflammatory changes in the wall of the colon permit the bacilli to be carried directly from the colon to the pelvis of the kidney, and the close proximity of the colon to the right kidney rather strengthens this hypothesis.

4. Infectious diseases.

5. Traumatism is said by MacFarlane to be more often the predisposing cause than generally supposed.

6. Physical conditions which lower the vitality of the patient, such as exposure to cold, lack of proper food, etc.

7. Multiparæ and primiparæ seem to be almost equally affected.¹ So far as one can judge from reported cases, there does, however appear to be a slight excess of primiparæ.

8. From the fifth to the eighth month is the usual time of onset.

The exciting causes are (Mirabeau):² (1) gonorrheal infection; (2) pyogenic micrococcus infection; (3) *B. coli communis* infection; (4) tuberculous infection.

Tuberculous infection is well recognized as of frequent occurrence in cases of pyelitis, yet its presence during pregnancy would immediately raise the suspicion of its existence prior to the pregnancy, in which case pyelitis of pregnancy would not exist. Gonorrheal and pyogenic micrococcus infections are much more probable. The literature does not, however, warrant percentage statements. Swift³ collected sufficient cases to warrant the assertion that *B. coli* infections are the most frequent in these cases: in seventeen examined bacteriologically this bacillus was found in pure culture seventeen times.

The diagnosis is that of a pyelitis developing for the first time during pregnancy, and usually disappearing before or during the puerperium.

The onset may be insidious or stormy, often with the marked chills and fever of advanced sepsis. The course depends on the exciting cause and the treatment. In

most cases, especially those due to *B. coli*, the systemic and urinary signs disappear gradually within a few (two to ten) weeks under the treatment outlined below. In the forty cases collected by Swift, spontaneous premature labor occurred four times, was induced once, nephrotomy was performed once ante partum and four times post partum. Opitz⁴ states that in the cases reports of which were collected by him, out of sixty infants born, seven were stillborn or died soon.

The following treatment is rational and well supported by those who have written on the subject:

1. Absolute rest in bed.

2. Fluid, preferably milk, diet.

3. Mild catharsis.

4. Hexamethylenamin, 0.5 gm. every three hours night and day in a full glass of cold water. The frequency of dosage is gradually lessened as the case improves.

5. Posture to relieve the ureter on the affected side, if the infection be single. The patient is instructed to lie as much as possible on the left side; should the right kidney be affected.

6. The statement that interruption of pregnancy is seldom if ever necessary appears to have the support of all those who have had experience with pyelitis of pregnancy.

7. Autogenous vaccine treatment has found favor with Hicks, and future experience may fully demonstrate its usefulness.

8. Topical applications in the bladder, or in the pelvis of the kidney, of the salts of silver, or other like antiseptic solutions, seem to be of service in severe cases, although in the average case of *B. coli* infection, the patient will do well on hexamethylenamin alone.

The following case will serve as an illustration:

Mrs. R., aged 23, primipara, pregnant six and one-half months, voided normal urine one week previous to the onset of the pyelitis. August 27, the patient had a chill, the temperature reaching 103 F., taken by mouth. From the first, pain was complained of on the right side of the abdomen from the right hypochondriac region downward into the pelvis. There was no abdominal distention and very little rigidity over the right kidney, which was very tender on slight pressure. The second day of the illness, urinalysis showed the presence of pyelitis, and blood examination proved a leukocytosis of 20,000 per em., with 87 per cent. polymorphonuclears. The urine gave a heavy trace of both serum and nucleo-albumin; one pus-cell was found; the pus-cells were well distributed, not in clumps, forming on sedimentation one-fifteenth of the whole bulk of the urine; specific gravity 1.024; sugar, none; reaction, strongly acid to litmus. The ureters were not catheterized because the diagnosis seemed clear without the operation. The patient was convalescent September 1 at the end of about a week from the onset, the temperature twice reaching 104. Bacteriologic examination of the urine, drawn aseptically from the bladder, showed a bacillus of the morphology and cultural characteristics of the colon bacillus.

For some weeks previous to the onset of pyelitis and during the remaining months of the pregnancy, the patient complained of the most intense itching, worse at night, and accompanied by a maculopapular eruption generally distributed over the trunk, arms and legs, but not on the face. The condition being mistaken at first for pediculosis vestimenti because the eruption at that time consisted in little more than the marks of vigorous scratching, antiparasitic treatment was rigorously tried without effect. Mild catharsis with menthol applications gave temporary relief. Yet despite every method of treatment we could devise the patient lost night after night of sleep because of the itching. October 30, two weeks before term, I delivered her of a normal six-pound infant. Within

1. Cragin: Med. Rec., New York, July 16, 1904.

2. Mirabeau, S.: Schwangerschafts-Pyelitiden, Arch. f. Gynäk., 1907, lxxxii, 485.

3. Swift, J. B.: Boston Med. and Surg. Jour., Feb. 21, 1907.

4. Opitz, E.: Ztschr. f. Gynäk., 1905, iv.

twenty-four hours the itching had subsided, and the eruption disappeared within three days.

The urine contained albumin and pus at intervals during the last month of the pregnancy in amounts sufficient to cause anxiety, and at times very little of either. The last specimen examined the day before delivery was free from both pus and albumin. At no time after the attacks described above were serious systemic effects noted. The urine after delivery contained neither pus nor albumin.

Therapeutics

INFANT MORTALITY: MILK

Few subjects have attracted more attention during recent years than that of infant mortality. It is not a new subject, for it received, thirty or forty years ago, much attention from members of the medical profession who specialized on diseases of infancy and childhood. But it seems to have been the rule that little attention was paid by the public to what was said by physicians. After several decades it seems to have occurred to political economists and sociologists that many lives might be spared to the state, presumably for useful service, if a little more attention was paid to the prevention and cure of some of the diseases which cause an astonishing mortality among babies.

An infant is defined by Foster as "a child not yet old enough to talk and walk."

Dr. J. Lewis Smith ("Diseases of Children," fifth edition, 1881) says, "Infancy extends from birth to the age of two and one-half years, or until the completion of first dentition."

The extent of the mortality among infants has been variously estimated by various statisticians. An estimate, which is generally accepted as not far from the fact, is that 15 per cent. of all children born die before they are one year old. Approximately one-third of these deaths during the first year are due to congenital malformations, deformities and weaknesses; another third to diarrheal diseases; a little less than one-fourth to respiratory and tuberculous diseases; and the remainder to other diseases.

It is toward the diminution of the number of deaths from diarrheal diseases that the present crusade is most conspicuously directed. A very large proportion of these deaths occur during the hot weather, between July 1 and October 1, and are directly traceable to improper feeding and improper food. Hence arises the great importance of the problem of feeding the infant.

When the fact is recalled that the milk of different animals varies in composition, it is not necessary at the present day, and in the present advancement of scientific knowledge, to enter on any argument to attempt to prove that the milk of the human mother is the very best food for the human infant during the early months of its life. Every woman, therefore, who gives birth to a living child, unless she is suffering from some serious disease, should nurse her child. This course is not only decidedly advantageous to the mother, but is also of the greatest importance to the child.

No artificial method of feeding has ever been devised which is as beneficial as nursing at the breast of a healthy mother. Unfortunately, many mothers object to performing this duty on various grounds; some because they have sore nipples and nursing is painful; others because the baby will not take the nipple, and therefore is given a bottle instead; others because they

think that their milk is not adequate in quantity or of sufficiently good quality to properly nourish the baby; others because they think that their health is being undermined by the drain on the system incident to lactation; and still others because they are unwilling to give up social pleasure so as to be available to nurse the baby every two or three hours. All these conditions should be taken into account by the physician, and such as are present in any individual should, if possible, be removed. He should emphasize to the mother the great importance, both to herself and to her baby, of providing the natural food from her own breast for her baby. He should also give explicit directions to the nurse in regard to the care of the breasts and nipples so that the latter may not get sore, a condition which not infrequently is accompanied by serious diminution of the flow of milk. The nurse should be instructed in regard to the frequency of nursing, and entirely to avoid feeding the baby (unless it is too weak to nurse) anything except what it extracts from its mother's breast. She should also be instructed in regard to the food which should be given to the mother in order to encourage the flow of milk, and in regard to requiring the mother to rest, and to avoid overexertion, which sometimes seems to diminish the flow of milk. It should be impressed on the nurse that it is a reflection on her ability if her puerperal patient does not nurse her baby.

It perhaps seems to some to be a waste of time to write or read anything so trite and commonplace as the statements above, but their great importance amply justifies their repetition at this time and in this place, and especially because (1) there are a few physicians who even now do not insist on their patients nursing their own babies, because (2) some nurses encourage young mothers not to nurse their babies, but to bring them up on the bottle, and because (3) many mothers insist that they do not want to nurse their babies on account of the inconvenience which is associated with the performance of this maternal duty.

If the mother cannot or will not nurse her own baby, the next best resource is a good wet-nurse. By this means the baby is supplied with human milk, and if the nurse is healthy, and was delivered at approximately the same date as the child's own mother, the substitute will usually prove very satisfactory. But practically, this method of feeding a baby is applicable to only a very limited number of the babies who are denied nourishment at their own mother's breast.

In connection with this subject the question arises, How long should maternal lactation be continued? Thirty years ago it was advised to begin to give other food than milk at the age of six months, and to discontinue lactation entirely at the end of twelve months, or, if this time came during the summer, to postpone weaning until the hot weather was over. More recently, other writers, like Dr. Joseph E. Winters of New York, have maintained that other food should be added after the second month, at which time the maternal milk shows a decided diminution in the amount of protein and mineral constituents. Winters maintains that "it is physiologic to wean as soon as practicable after the second month," but that among the poorer classes, on account of the difficulty of getting fresh, pure milk, weaning should not be advised at the end of the second month, but that nursing should not be continued beyond the fifth or sixth month. This advice will be accepted with considerable caution by most practitioners, who prefer,

as a rule, that, if there is a good supply of milk of normal quality, supplementary feeding should commence at from four to six months, and nursing should not be entirely discontinued until from the tenth to the twelfth month. On the other hand, if a mother is determined not to nurse her baby at all, on account of her desire to enter actively into social life, or to avoid the trouble and inconvenience of lactation, the physician may propose, as a sort of compromise, that she should nurse the baby until the end of the third month, and then wean it. If she will do this, the infant will be carried over the period—the first three months of its life—during which artificial feeding is conducted with the greatest difficulty and the least success.

But there yet remains in addition to the not inconsiderable number of mothers who absolutely refuse to nurse their babies, another by no means small number of those who think that they cannot nurse their babies and do not, and still others who for various reasons really cannot nurse their babies.

When human milk is unobtainable; the best substitute, from a practical point of view, is cow's milk, because it can generally be obtained in abundance in a more or less fresh state. Its composition is well understood, also the respects in which it differs from human milk. Like everything else in common use, it varies greatly in quality, and some of these variations are intimately associated with unhealthfulness. Years ago consumers were especially disturbed by the abnormal proportion of water which many specimens of milk contained; and which was alleged to have been introduced surreptitiously by the producer or the dealer. This adulteration has largely been prevented by state legislation and the activity of local health boards.

With increasing knowledge of fermentation and putrefaction, and the relation of bacteria to these processes, it became evident that milk, although kept free from intentional dilution and contamination, readily underwent deleterious changes under the influence both of its inherent tendencies and of extraneous contaminating matters accidentally introduced into it. At present the most important cause of the deterioration of milk and the development of deleterious qualities in it appears to be the growth of bacteria. It seems to be practically impossible, even with the greatest care, to secure milk which is entirely free from bacteria, even when it is first drawn from the cow. Possible sources of contamination are dust and dirt in the air of the barn or dairy, and manure and other dirt loosely adherent to the hair of the cow, the hands and the clothing of the milker, and the utensils used in the transportation of the milk.

It would consequently appear that the work of extracting the milk from a cow should be conducted in the same way as an aseptic surgical operation.

1. The barn, or whatever place is occupied when the cow is milked, should be constructed so that it can be readily and thoroughly cleaned, and it should be cleaned at short intervals. This will be accompanied by a diminution in the amount of dirt and dust and bacteria in the air, and so the amount of contamination is diminished.

2. The milker, whether milkmaid or milkman, should wear clean clothing and have his hands cleaned by careful washing.

3. The cow should be made clean by washing and regular brushing, so that no manure adheres to the hair to be shaken or brushed off into the milk.

4. The utensils used in handling the milk, and especially the milk-pails, should be thoroughly sterilized by careful washing with boiling water.

By using effective caution in these four particulars the contamination of the milk may be greatly lessened. As precautions in these directions are imperfectly carried out, the number of bacteria increases and the conditions are more favorable for early deterioration of the milk.

Practically, most milk which is furnished to the consumer contains an abundance of bacteria, and an important practical problem is how their injurious effects may be avoided. It has been found that the growth of bacteria is prevented by a low temperature. Therefore, it is apparent that all milk should be cooled to a temperature not above 50 F. as rapidly as possible, as soon as it is drawn from the cow, and it should be kept at a temperature not above 50 F. until it is used.

But what milk-producers should do, and what they really do, are very different things. It is found that a large proportion of milk actually furnished to consumers contains a large number of bacteria, and that in many cases, through the growth and multiplication of the bacteria, it has already undergone changes which render it an unsafe food for human beings, and especially for infants. Not so very many years ago the advice was given to obviate this defect by "sterilizing" the milk by boiling it. It was even advised to sterilize all the milk which was fed to infants. This was soon found to be objectionable (1) because it altered the taste and made the milk less palatable, and (2) because exposure to such a degree of temperature as was necessary to boil milk produced such changes in it, including a destruction of the enzymes, that it was not a good food for infants.

Next in order to avoid this interference with the digestibility of the milk, it was proposed to subject the milk to such a temperature, below the boiling-point, as would inhibit the growth of bacteria and would not make other objectionable changes in it. This temperature was found to be about 140 F., and the process of heating the milk to this temperature was designated as "pasteurization." In recent years pasteurization has become almost a craze, and has been extensively employed, especially in large cities, and unquestionably with a favorable influence on infant mortality. But some have objected to this process, and here we must again quote Winters, who maintains that even pasteurization causes a dissociation of the organic combination of the protein and mineral constituents of the milk so that they are less suitable for assimilation by the infant. Where it is possible for the consumer to get milk which has been produced under favorable conditions, and to get it at once, as soon as it comes from the cow, without the delay incident to transportation, and when it is properly cared for by the consumer and used within twenty-four hours, there is no need of pasteurization.

Where, on the other hand, as is the case in most large cities, milk is twelve or twenty-four hours old when it reaches the consumer, and consequently at least a part of it is thirty-six or forty-eight hours old before it is consumed, and when the conditions under which it has been produced are unknown to the consumer, great care must be exercised to keep it at a low temperature until it is used, and then, for infants it certainly should be pasteurized.

During recent years municipal boards of health, by the enactment of ordinances regulating the production

and distribution of milk, have accomplished very gratifying results in improving the quality of milk. Occasionally, however, it becomes contaminated with pathogenic organisms. Epidemics, more or less extensive, of typhoid fever, scarlet fever, and diphtheria, have been traced to milk which has become infected. It seems proved that tuberculosis is caused by drinking milk coming from tuberculous cows and infected with tubercle bacilli. These facts are used as an argument, by some, for the routine pasteurization of all milk used for human consumption. It has been shown that subjecting milk for twenty minutes to a temperature of 140 F. destroys the pathogenic organisms therein.

A conservative man might well hesitate to advise universal pasteurization, but it is evident that the fresher the milk and the better the conditions under which it is known to be produced and distributed, the less need is there for any treatment designed to inhibit the activity of germs. On the other hand, the longer the time that elapses from the milking of the cow to the consumption of the milk, and the less that is positively known as to the salubrity of the conditions under which the milk is produced and distributed, the greater necessity is there for resorting to some means of destroying the pathogenic and other bacteria which are, or which are likely to be, present. For thus destroying the microorganisms in milk, which are such a menace to the health of consumers of milk, and especially of infants and young children, no method, at present in general use, is of more practical utility. To a family which has a healthy cow in its own stable cared for by a cleanly and careful man, it is not to be suggested. To one which has to use milk produced no one knows where, under conditions of which the consumer knows nothing, and which is of unknown age, pasteurization will often prove the means of avoiding not only the local disturbances of the digestive organs, but also sometimes of escaping one of the general infectious diseases.

Special Article

TYPHOID FEVER IN DES MOINES, IOWA

(By Our Special Commissioner)

Des Moines, the capital and largest city of Iowa, is situated almost at the center of the state, at the junction of the Des Moines and Raccoon rivers. It was founded in 1846 as a military post, incorporated in 1851 and became the state capital in 1857. It has grown rapidly, having in 1890 a population of 50,053, in 1900, 62,137 and in 1910, 86,732. This makes an increase during the last ten years of 40 per cent. It is noted particularly for its large insurance interests and its exceptional railroad facilities. Nineteen different railroads enter the city. The occurrence of bituminous coal in the region has helped largely to make the city an important manufacturing center. Among the products are books, carriages and wagons, engines and boilers, cotton and woolen goods, starch, and pottery. As one of the greatest educational centers of the middle west, it has thirteen colleges and technical schools with a total attendance of about six thousand. There are several fine public buildings and more are in progress of building. Its nineteen parks cover about seven hundred acres.

The city is built on hills, with drainage through numerous gullies into the rivers.

In 1908, Des Moines adopted the commission form of government. This consists of a council of five, includ-

ing a mayor, who are elected by popular vote, with salaries sufficient for them to give all their time to city affairs. The use of the initiative, referendum and recall keeps the power of government in the hands of the people. The city has made rapid progress in many directions under this form of administration. Municipal expenses have been materially reduced; water, gas and lighting rates have been lowered; the streets and alleys have been cleaned, sewer connections extended, and the whole city put into what is usually termed a good sanitary condition.

TYPHOID RECORDS IN DES MOINES IMPERFECT

Des Moines is not recognized by the United States Census Bureau as a registration city. This is not a creditable circumstance for a city of such size and importance. Although public documents dealing with the street railway situation are numerous and complete, there has been practically nothing published in regard to the public health.

So far as can be ascertained, typhoid fever has existed for some time in Des Moines. In 1906, the only year for which published statistics are available, there were recorded eighteen deaths from this disease. On an estimated population of 77,000, this makes the death rate for that year, per 100,000 population, 23.4—a rate considerably higher than that of many American cities. The following statement by Whipple¹ is significant in this connection. "It is commonly assumed that in the northern parts of the United States a continued typhoid death-rate above 20 per 100,000 indicates that the public water supply is of questionable purity."

PRESENT OUTBREAK

The present outbreak of typhoid fever began about November 15 and has continued, although with some falling off, up to the present date. It is said to be of a very virulent type, thirteen deaths having occurred in five weeks. On December 5, 106 cases had been reported to the health authorities, and it is probable that many more existed, as physicians in Des Moines are not required to report typhoid cases. On this date there were reported to be ninety cases in the hospitals. An investigation of the known cases was made by the city physician, Dr. Saylor, and presented to the council. According to a published summary of this report, the cases were fairly evenly distributed over the city—seventy-two on the west side, twenty-two on the east, eight on the north (including Highland Park), and four on the south. Rarely was there reported more than one case in a house. This distribution corresponds approximately to that of the population. The cases were about equally divided between adults and minors; forty-one were school children or students, while the remainder were scattered among a great variety of occupations; ninety-eight had used city water, exclusively or at times; there were sewer connections in the houses of eighty; and twelve dairies were represented.

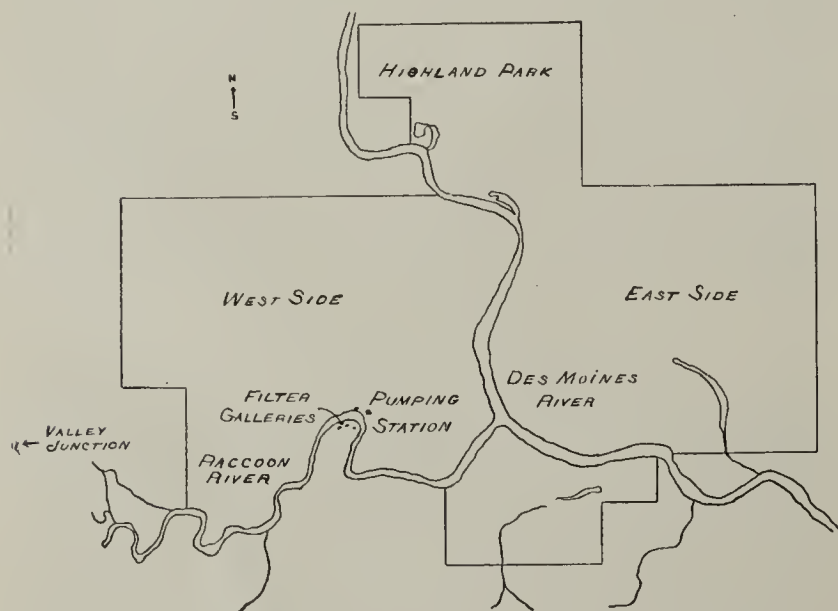
WATER SUPPLY

The water supply of Des Moines is controlled by a private company. In the report of the Health Department for 1906 a detailed description of the supply was made by Mr. Floyd Davis, at that time consulting chemist and sanitary engineer to the Water Works Company. This report, together with the facts obtained

1. Typhoid Fever, John Wiley & Sons, New York, 1908, p. 230.

from personal examination by your commissioner, is the basis for the following description. The water is taken from so-called filter galleries constructed parallel to the Raccoon River in the vicinity of the Eighteenth street viaduct (see diagram). No part of the supply is taken directly from the river. The principle involved in the use of filter galleries is that the ground water, which is continually flowing toward a river at some distance below the surface of the ground, should be intercepted, and collected for use. Ground water comes from rain water which in passing through the earth strikes an impervious layer, and runs off in the direction of the slope of the layer. Ground water is consequently filtered and of a high grade of purity for drinking purposes. Openings in the soil, however, are liable to be washed out so that the filtration is not perfect. Under these conditions house and privy drainage may run into the ground and pollute the ground water.

The galleries at Des Moines are built of gravel with a blue clay bottom and board sides. At the end of each is a collecting well from which the water is pumped into the city mains. In the spring and in wet weather the level of the ground water is considerably above that of



Map of vicinity of Des Moines, to explain water supply.

the river so that under these conditions the supply is very largely from the ground; but during dry times the water is mainly that which has filtered through from the river, and then the danger of pollution is greatest.

The Raccoon River rises in the northwestern part of the state and flows in a southeasterly direction into Dallas County where it is joined by the South Raccoon River. From there it flows east into Polk County, joining the Des Moines River at Des Moines. It is fed at frequent intervals by numerous creeks, some of which are of good size and drain fairly large areas. It is exposed to pollution from at least five communities—Valley Junction with a population of about 3,000, Adel with about 1,400, Jefferson with about 3,000, Perry with about 4,500, and Guthrie Center with about 1,500. Three of these have sewers discharging either directly into the river or into its tributaries. The numerous farming districts in the region of the river's flow are also possible sources of danger. The nearest of the main sources of pollution is Valley Junction, five miles by railroad and about ten by river west of Des Moines. A sewer at the Rock Island railroad shops at the west end of the town discharges into a creek which enters the river just below the town. An examination of this was

made by your commissioner. A sample collected on December 23 contained 29,300 bacteria per cubic centimeter, of which 200 were acid forming. This result indicates a rather high degree of pollution.

It must here be noted that the water company has recently opened a new filter gallery near the pumping station. The date of opening, according to a published statement made by representatives of the water company, was November 15.

For the past year the character of the water has been investigated for the company by means of weekly chemical analyses. The manager of the company has stated that these "tests have shown no strong percentage of impurities." No regular bacterial examinations are made.

The water supply has been under suspicion for some time. That the method of filtration used was not efficient was contended in the federal courts last June during litigation concerning the water rates. In a letter to one of the Des Moines newspapers Dr. Gabel, professor of biologic sciences in Highland Park College says:

You may call it a divine punishment or what you wish, but the facts are that last June we contended in the federal courts here that the system by which the city of Des Moines is supplied by water is antiquated, the filters are not properly constructed and do not keep out the bacteria and algæ which produce the bad odors and taste in the water and digestive and other disturbances in the consumers. I said that the water I had examined was not badly polluted, but of a suspicious character, which under conditions might become dangerous. As a result of my investigations I found and declared the filters inefficient and know of no one who proved them to be otherwise. In fact, I know of no one who ever made a complete scientific investigation of the water or of the efficiency of the filters. Although bacteriologic investigations were previously made we could find no records of them. . . . Regular examinations are necessary throughout the year.

Mayor Hanna is quoted in the same paper as saying that he believes that the present method is inefficient, and that tests made last year showed "evidences of typhoid germs" in the water. Dr. Albert, the state bacteriologist, is said to have found an excessive number of sewage bacteria in the river water, and to regard the filter galleries as a constant source of danger.

In addition to the sample of water from the creek at Valley Junction your commissioner has made bacterial examination of a sample of water from the Raccoon River just above the pumping station, and of city water. The samples were collected December 23. The river water showed an average of 137 bacteria per cubic centimeter, with *B. coli* present in 0.7 of a cubic centimeter. The city water averaged sixty-five bacteria per cubic centimeter, and no *B. coli* were present in 7 cubic centimeters. Although this examination shows that the city water is not badly sewage-polluted at the present time, still the bacterial count would be high for a good ground water to have. Also this does not prove that the water may not at some time become polluted.

CAUSE OF THE EPIDEMIC

As is well known, the most common means of infection in typhoid fever are water, milk, contact with cases and with carriers, and transmission to food, etc., by the agency of flies. No evidence has been adduced to show that infected milk is responsible for the 1910 Des Moines epidemic. A large number of dairies are represented among the cases, whereas in milk epidemics of such an extensive character only one or two dairies

would usually be involved. Contact infection may have played some part, but it is unlikely that this was the primary factor as the cases were scattered over a wide area. Fly-borne infection is hardly likely to have been an important cause in November and December. Simply by a process of elimination, therefore, the relation of the water supply to the epidemic assumes special importance.

From the statistics of 106 cases given above it will be noticed that nearly all patients had used city water prior to their illness. As this water is pretty generally distributed throughout the city this in itself would have little significance were it not for the fact that there has been practically no typhoid in Sevastopol, a suburb south of the city, where conditions are similar to those in Des Moines except that Des Moines water is used on only one street.

As stated above, examinations by your commissioner and others show that the Raccoon River is sewage polluted. That it contained typhoid bacilli just prior to the epidemic is rendered probable by the fact that there were in the autumn of 1910 at least two cases of typhoid fever in Valley Junction, and excreta from these cases may readily have passed into the river. That there has been considerable typhoid all over the state of Iowa increases the possibility of infection of the Raccoon River. According to Mr. Davis' report, referred to above, the conditions under which the galleries were operating at the time of the epidemic were exceedingly unfavorable. There was little rain in Iowa in 1910, the deficiency below normal at Des Moines from January 1 to December 23 being 13.88 inches. If any river water containing typhoid bacilli had entered the galleries imperfectly filtered, due to these unfavorable conditions, a typhoid epidemic would have been almost certain to follow.

That filter galleries after continued use do sometimes become inefficient has been shown by the case of Waltham, Mass., where the water supply was obtained for a long time from galleries dug near the Charles River, a method similar to that in use in Des Moines. Examination² showed that the supply had gradually become polluted, the contamination being due in the opinion of the State Board of Health partly to the passage of imperfectly filtered water from the river and partly to pollution of the ground water supply. At that time the level of the ground water was below that of the river, the same condition that recently existed at Des Moines. Waltham has been advised by the State Board of Health of Massachusetts³ to look for some better source of public water supply. It is evident that the condition at Waltham presents in some respects an interesting parallel to that which obtained at Des Moines.

It has already been stated that a new gallery was opened on or about November 15. Suggestions have frequently been made that this had some connection with the outbreak of the epidemic. Whether or not this is so is not clear. If it were the sole cause, the outbreak would not have occurred until about ten days after the opening, whereas it was coincident with it.

Briefly, then, the situation at Des Moines may be summarized as follows: Examination of the topography of Des Moines and of the surroundings of the pumping station show that the public water supply is exposed to dangerous contamination. The results of

bacterial examination confirm this view. At the time of the November outbreak conditions, meteorological and other, were especially favorable for an unusual degree of pollution. The sudden and extensive character of the outbreak, the uniform distribution of cases throughout the city in proportion to the population, the entire lack of evidence, so far as appears, that the disease was milk borne are other features that point to an infection of the public water supply as the main if not the sole cause of the Des Moines epidemic.

New and Nonofficial Remedies

BORNYVAL.—Bornyval is a name applied to capsules containing borneol isovalerate $C_{10}H_{17}O.C_5H_9O$, the isovaleric acid ester of borneol, 0.25 Gm. (4 minims).

It is prepared by the condensation of equal molecular quantities of borneol and isovaleric acid.

Borneol isovalerate is a clear aromatic liquid, having an odor resembling oil of rosemary and at the same time a weak odor and taste of valerian. It is insoluble in water, but dissolves in all proportions of alcohol and ether. The liquid boils at 225° to 260° C. (417° to 426° F.) under ordinary pressure. At a pressure of 50 mm. it boils at 150° to 170° C. (302° to 338° F.). Its specific gravity is 0.945 to 0.951; it is dextrorotatory. The alcoholic solution 1:10 after the addition of a drop of phenolphthalein solution should be distinctly reddened by a drop of tenth-normal alkali.

Actions and Uses.—As borneol isovalerate forms a large part of oil of valerian, its action is similar to that of the official drug. It reduces reflex excitability and acts as a nervous sedative.

It is said to be useful in the various neuroses, especially those of the circulatory, digestive and central nervous systems.

Dosage.—0.25 to 0.75 Gm. (4 to 12 minims) from two to four times daily. It is best given after meals with some milk, coffee or similar drink to avoid eructations.

Manufactured by J. D. Riedel, Aktiengesellschaft, Berlin, Germany. (Riedel & Co., New York). U. S. trade-mark No. 56,451.

ANTIFORMIN. Antiformin is a strongly alkaline solution of sodium hypochlorite. In each 100 c.c. it contains approximately sodium hypochlorite equivalent to 5.68 gm. available chlorine, sodium hydroxide 7.8 gm., and sodium carbonate 0.32 gm.

According to the patent specification chlorinated lime is dissolved in water at the temperature of 35° C. To this a solution of sodium carbonate is added. After standing the supernatant liquid is decanted and to this sodium hydroxide is added.

Antiformin is a yellowish, clear liquid having the peculiar odor characteristic of hypochlorites.

The per cent. of available chlorine, of alkali hydroxide and carbonate may be determined by the methods described in the Reports of the Chemical Laboratory of the American Medical Association, 1911.

Actions and Uses.—Antiformin rapidly dissolves the bodies of bacteria with the exception of acid-fast organisms like the tubercle bacillus, on which it has no solvent action and which resists its germicidal action to a great extent. It dissolves other organic matters, such as those contained in sputum and feces. It exerts a strong oxidizing action and is disinfectant, antiseptic and deodorizing. It is said to be more than three times as active in germicidal action as phenol.

Based upon its property of dissolving most bacteria and the insoluble constituents of the sputum, Antiformin is employed in testing for tubercle bacilli. It is said to be useful for the sterilization of the surgeon's hands, of instruments and of wounds and for general purposes of disinfection. It is also said to be useful in certain skin diseases.

Dosage.—Externally in from 2 to 10 per cent. solution. In from 4 to 1,000 solution as a spray. As a disinfectant 5 per cent. solutions are used. For the demonstration of tubercle bacilli 15 per cent. solutions are suitable.

Manufactured by the American Antiformin Co., New York. U. S. patent No. 691,671 (Jan. 21, 1902; expires 1919). A process for Cleaning Beer Vats and Pipes, said process consisting according to the patent specifications "in subjecting the walls of said vats or pipes to the action of a solution composed of about 1 part of alkaline hypochlorite with about a half to one part of alkaline hydrate, substantially as specified." U. S. trademark No. 61,693.

2. Annual Report of the State Board of Health of Massachusetts, 1904, p. 54.

3. Annual Report, 1905, p. 103.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JANUARY 7, 1911

CANCER AMONG THE AMERICAN INDIANS

Statistical investigations play an important part in the study of cancer, and modern methods are just as necessary here as in any chemical or microscopic research; faulty methods of collection or interpretation have made most of the earlier statistics of little worth. A large part of the energies of the German Central Committee for Cancer Investigation has been spent on statistics in these its earliest years of existence, if we may judge by the titles of the papers in its official organ; and one of the first reports from the newly established George Crocker Research Fund for the investigation of cancer indicates that the authorities directing this great American donation to medical science have considered statistical investigations an important basis for cancer research. It is stated in an article on cancer among American Indians, by Levin¹ of New York, that in order to study the ethnologic distribution of cancer an investigation under the Crocker Fund was begun simultaneously in the Hawaiian Islands, the Philippine Islands, Porto Rico, the Isthmian Canal Zone, and among the American Indians of the United States. That different races suffer to different degrees from cancer is a well-established fact, the low incidence of cancer in our own negro population being generally recognized, while British physicians in the scattered territory of that empire have testified to the infrequency of cancer in most of the dark-skinned subjects of the British crown. In Ceylon, for example, there were reported in one year but 234 cases in a population of nearly four millions, making a ratio of six cases per hundred thousand, as contrasted with the usual rate of seventy to a hundred cases per hundred thousand observed in the various countries of Europe.

So far as the Crocker Fund investigation is concerned, results complete enough for drawing conclusions have so far been received from two sources, the Canal Zone and the American Indians, because of the governmental organization and control of the medical service of these two groups. In the Colon Hospital there have been but

thirty-five cases of malignant neoplasm during five years, among 54,249 patients, a remarkably low figure which can probably be ascribed, at least in large part, to the fact that the population of the Canal Zone is three-quarters negro.

As to the American Indians, returns furnished by 107 of the 130 physicians of the Indian Field Service showed but twenty-nine cases of cancer observed in a population of 115,455 during a time of practice ranging from a few months to twenty years. Since these Indians are distributed all over the United States and in parts of the country where it is known that the white population presents the usual number of cancer cases, climate, geography and geology cannot be advanced as an explanation of the relative immunity of the aborigines to malignant disease. Whether race, habits or diet are responsible for the difference cannot be said. Levin seems inclined to accept the rather prevalent view that "it is the modern civilization and the conditions created by it that give rise to the mediate causes which produce the disease." This view, however, does not fit well with the fact that among one of the oldest, and commonly considered most decadent of civilizations, the Chinese, cancer is relatively rare. In the Chinese population of Hong Kong, for example, the cancer mortality averaged 4.45 cases per hundred thousand during a period when it stood at 71.0 in England. Furthermore, cancer is extremely common in some animals; in dogs, especially, cancer is said to be a more common cause of natural death than it is in man. Does this mean that the dogs are more civilized than the Chinese and Hindus, or are we to believe that the association of the dog with man causes the poor quadruped to acquire the cancerous proclivities of the higher civilization?

Another statistical study of cancer published in the same journal brings out a point in cancer etiology which will undoubtedly arouse much interest, namely, the relation of alcohol to cancer. As the outcome of an extensive study of the vital statistics of Bavaria by a special committee appointed for this purpose, it appears that cancer is distinctly most frequent among those whose trades render them most likely to indulge in alcoholic beverages; the highest incidence of cancer is found among those selling alcoholic liquors, a fact which has also been brought out in other countries by statistical inquiries as to the relation of occupation to cancer. If this is true it may be that the efforts of the government to keep Indians and fire-water apart, while sometimes eminently unsuccessful, have on the whole been able to prevent wide-spread habitual indulgence and thus to remove this possible factor in civilized cancer morbidity. If the relation between alcoholic habits and cancer is eventually shown to be one of cause and effect, temperance advocates will have an argument which probably will carry more weight with the average individual than any and all the excellent reasons for total abstinence which they can now command.

1. Levin, Isaac: *Ztschr. f. Krebsforsch.*, 1910, ix, 422.

THE BIRTH-RATE AND RACIAL STABILITY

The significance for the race of small families and the reduction of the birth-rate constitutes a problem of intense practical interest, especially at present. Many maintain that the children of small families, because they are better cared for, really grow up into better men and women—that is, better for the race—than do the less carefully nurtured and educated children of large families. This, of course, is on the assumption that the children of small families are, on the average, at least as well endowed with vital qualities as the children of large families. The subject, however, is by no means on a satisfactory basis for the drawing of final conclusions.

At the last meeting of the British Medical Association, in the section of medical sociology, a symposium was held on the social aspects of falling birth-rate. One of the speakers, Dr. D. W. Hunter,¹ believes that the elder-born children of a family are more liable to suffer from defects than the younger ones—that is, up to a certain limit. As a consequence, if the race or family stock is recruited mainly from the elder-born children, there is an inevitable tendency toward racial degeneration. As has been shown by biometric statistics, the earlier members of families of seven or eight children are likely to be less stable in physical health, less resistive in vitality to disease, more prone to neurotic conditions and with less mental equilibrium than those of later birth in the family. Where large numbers are taken, the physical and mental health of the children seems to increase on the average up to the seventh or eighth child. The descendants of earlier-born children, according to Hunter, show much more tendency to defect than the offspring of parents who are younger members. A series of generations of elder children would be especially likely to emphasize the defects of the family stock, whatever they might be.

The observation which has been made that successive children of the same mother, to the eighth or ninth child, show an average increase in weight of one-half pound at the time of birth, lends further support to the findings of the differences in physical and mental stability of the earlier and later offspring. The heavier children are likely to have better development, to be in better condition to stand the trials of existence during the early months particularly, and as a consequence, while the development of the nervous system is being completed during the first six months of extra-uterine life, disturbing factors in the process are fewer and less serious. The reason for this may be that the mother of later children is likely to be at a more suitable age to give strength of body and store of vitality to her child than the mother of an earlier child. Somewhere about twenty-five Hunter considers that a woman is best fitted to give birth to her first-born. After twenty-five the capacity to bear a vigorous, healthy child at the first

birth rapidly diminishes. With regular pregnancies the power to reproduce well steadily increases until the mother reaches thirty-five years of age.

From the fact that the earlier children in large families are inferior to those born later, Hunter infers that the children of small families, in which, as he says, there are no later-born, must be inferior on the average to the children of large families. The theory is interesting and worthy of further investigation, but cannot be regarded as proved by Hunter's data. At least one factor in the superiority of the late-born children—apparently the chief factor, according to his own theory—is the more matured vitality of the mother. But early marriages are the rule among the races and classes that multiply most rapidly. Women who marry at twenty-four (in time to give birth to the first child at the age which Hunter considers the most favorable for that event) are found more frequently among the classes in which children are not produced so numerous. It would seem as fair to say that there are no early-born children of comparatively late marriages as to say that there are no late-born children. It is at least possible to conjecture that the production of many children by immature parents might have as unfavorable an effect on the stability of the race as the production of but few children by better-matured parents.

Then, again, the infantile death-rate tends to be high where the birth-rate is high. Hunter offers no data to show whether the younger or the older children of large families survive in larger numbers. Among the poor especially, it seems possible that the inevitable increase of neglect and privation to which, during the critical period of infancy, the later comers in large families are subject, may counterbalance, to some extent, their superior physical endowment, thus favoring the survival of the inferior early-born rather than of the superior late-born.

It is held by some, moreover, that births in too rapid succession may so exhaust the mother's forces as to enfeeble her offspring. It was suggested by Professor Moore,² a speaker in the discussion that followed the symposium, that some nations have disappeared as world powers by allowing excessively prolific reproduction to sap the vitality of the race.

The whole subject needs further investigation; but at present Hunter's assertion that "the limitation of the family to two or three children inevitably means a nation of idiots, and that within a few generations," certainly seems to exceed the limits of sober scientific deduction. There are, no doubt, a number of elements in the problem of the falling birth-rate which have not been fully considered so far. The capacity to care for a few children is evidently a favorable factor for the race, and capacity to endow them with vitality and health of body and mind is an even more important one. As yet, however, we have scarcely begun to accumulate the data

1. Hunter, D. W.: *Brit. Med. Jour.*, Aug. 20, 1910, p. 453.

2. Moore, Benjamin: *Brit. Med. Jour.*, Aug. 20, 1910, p. 454.

required as a basis for any valid conclusions. These problems deserve careful study at the hand of physicians. Some very interesting statistics could surely be made by family practitioners of long experience, who have opportunities to see the differences between early and late-born children in large families, their relative chances of survival, and the comparative stamina possessed by children of late and early marriages, and of more and less prolific families.

FATIGUE AND SUSCEPTIBILITY TO INFECTION

The influence of fatigue on the development and course of infectious diseases was recognized long before the real nature of infection was known. There has existed a general belief, founded on observation during epidemics of plague and cholera, that physical or mental exhaustion rendered the organism more susceptible to the disease. In the writings of some of the earlier veterinarians we find statements that overexertion can cause glanders or anthrax in horses and cattle. The literature of the later part of the nineteenth century after the study of infectious processes had been put on a sound basis, abounds in clinical observations on the influence of fatigue in many diseases of microbic origin, such as pyemia, osteomyelitis, infective endocarditis and myocarditis, typhus, tuberculosis and influenza. In typhoid fever above all, fatigue plays an important rôle as a predisposing cause of infection; according to Roger it is more important than any other cause. Thus military surgeons note again and again that though soldiers while in garrison may be free from typhoid fever, they are liable to develop it as soon as they have undergone the strain of the maneuvers, although they are stationed in villages where there is no typhoid.

In 1890, twenty years ago, Charrin and Roger published their classical work on the breakdown of resistance to infection following physical exhaustion, a work which has until very recently remained the last word on this subject. They experimented on white rats, using the bacillus of anthrax and of symptomatic anthrax. The experimental animals were first made to run in a squirrel's cage for several hours till thoroughly tired, and were then injected, control rats being injected with an equal dose. Charrin and Roger found that the fatigued rats succumbed to the infection earlier than the non-fatigued, and that in some cases the latter survived a dose which killed the former in less than twenty-four hours. In one experiment five control rats, inoculated with the virus of symptomatic anthrax, survived, while all of the six fatigued rats, inoculated with the same amount, died, three of them in less than twenty-four hours.

These authors did not attempt to show what changes in the fatigued animals underlay this breakdown of resistance to infection, nor would it have been possible to do this twenty years ago with anything like the com-

pleteness which recent advances in the study of immunity have made possible. This next step has been taken by De Sandro,¹ working in Ferranini's clinic of industrial diseases in the University of Naples.

De Sandro repeated the work of Charrin and Roger, using, however, as his subjects dogs, rabbits and guinea-pigs, and for injection typhoid toxin. He has succeeded not only in confirming their results but in demonstrating some of the changes which take place as a result of fatigue and which seem to explain the loss of resistance to infection. He brought about fatigue in his animals by means of faradization, carried to the point of rapid contractions but without causing pain or extreme terror. Each series of animals experimented on consisted of four classes, Class 1 containing those which were fatigued by faradization each day for five to seven days before injection; Class 2 those which were fatigued just prior to injection and then daily after injection; Class 3 those which received the injection in a normal state and were then fatigued occasionally at intervals of several days; and Class 4 those injected and left at rest, the controls. After ten days the animals, if living, were given a second dose.

The task which De Sandro set himself was to ascertain the effect of overexertion, fatigue, on the duration of life, the body weight, the temperature, the character and number of leukocytes, the formation of agglutinin, opsonin, precipitin, antitoxin, antiendotoxin and bactericidin. On the last five substances his experiments are not very satisfactory and could hardly be regarded as conclusive, although the results obtained are significant enough to encourage further exploration into these fields. A brief review of the remainder of his work will show that he has been able to demonstrate very decided changes in the mechanism of resistance as a result of overfatigue.

All the animals which were subjected to fatigue died sooner than the controls, death coming more quickly in those which received the first injection in a state of exhaustion than in those which were exhausted only after injection.

Loss of weight was greatest in those animals which were fatigued repeatedly before injection. Thus one guinea-pig lost 245 gm., while the control lost only 105 gm.; one dog lost 1,500 gm., while the control lost only 200 gm.

In all the injected animals, fatigued and at rest, injection of typhoid toxin was followed by typical changes in the leukocyte count, namely, an immediate leukopenia, followed by a leukocytosis and then a return to the normal count. The polymorphs were first increased at the expense of the mononuclears, which later rose in number as the polymorphs fell, this being due to the increase in large mononuclears especially. In comparing the changes in the fatigued with those in the non-fatigued animals decided differences were observed,

1. De Sandro, Domenico: *Riforma Med.*, 1910, xxxv, 841, 871. Briefly noted in *THE JOURNAL*, Sept. 17, 1910, page 1064.

which point to the importance of the mononuclear leukocytes in the defense of the body against infection as well as the polynuclear phagocytes. These differences may be summarized as follows: First, the leukopenia following injection was more pronounced in the fatigued animals than in the controls, being most pronounced in animals of Class 1. Second, the subsequent polynucleosis was later by several hours, was less intense and persistent, these differences also being most pronounced in animals of Class 1. Third, the mononucleosis appeared later, was less intense and less lasting in the fatigued animals. Fourth, while the second injection of toxin in the control animals caused only a slight leukopenia, in the fatigued animals it caused a very decided leukopenia, with only a slight subsequent increase in polynuclears and in mononuclears.

The results of De Sandro's observations on agglutinin formation as affected by fatigue are also very interesting. He found that the slight agglutinative power of all the serums disappeared after the first injection (negative phase). The serum of the control animals began to exhibit agglutinative power by the third to the fifth day, that of the fatigued animals not till the fifth to the eighth day, animals of Class 1 being always slowest to respond. All the control animals exceeded the fatigued in the amount of agglutinin formed.

De Sandro concludes that overfatigue favors greatly the development of infectious processes by its effect on the mechanism of defense of the body. It is to be hoped that this interesting study will stimulate research into the influence of fatigue on the formation of opsonin, bactericidal substances, etc.

DEATHS OF PHYSICIANS IN 1910

During 1910, the deaths of 2,324 physicians in the United States and the Dominion of Canada were noted in *THE JOURNAL*. Reckoning on a conservative estimate of 137,000 physicians, this is equivalent to an annual death rate of 16.96 per 1,000. For the eight previous years the death rates were as follows: 1909, 16.26; 1908, 17.39; 1907, 16.01; 1906, 17.2; 1905, 16.36; 1904, 17.14; 1903, 13.73 and 1902, 14.74. The average annual mortality for the period from 1902 to 1910, inclusive, was therefore 16.21 per 1,000. The age at death varied from 22 to 97, with an average of 59 years, 11 months and 4 days. The general average since 1902 is 59 years, 5 months and 28 days. The number of years of practice varied from 1 to 72, the average being 32 years, 8 months and 9 days. The general average for the past six years is 31 years, 5 months and 29 days. The chief death causes in the order named were "heart disease," cerebral hemorrhage, pneumonia, violence and nephritis.

CAUSES OF DEATH.—There were 335 deaths assigned to general diseases; 378 each to diseases of the nervous

and circulatory systems; 231 to diseases of the respiratory system; 144 to diseases of the digestive system; 220 to diseases of the genito-urinary system; 172 to violence; 123 to senility; and 15 to unknown or vaguely described diseases. Among the principal assigned causes of death were "heart disease," 245; cerebral hemorrhage, 242; pneumonia, 193; nephritis, 166; senility, 123; accidents, 114; tuberculosis, 92; malignant disease, 77; after surgical operations, 71; angina pectoris, 57; paralysis and suicide, each 48; septicemia, 38; arteriosclerosis, 34; diabetes, 32; "uremia," 31; typhoid fever, 30; appendicitis, 25; gastritis, 22; anemia, 18; paresis, 17; myocarditis, 14; cirrhosis of liver, 13; cholelithiasis, 12; influenza, erysipelas, meningitis and intestinal obstruction, each, 11; homicide and insanity, each 10; rheumatism and gastric ulcer, each 9; locomotor ataxia and peritonitis, each 8; endocarditis and prostatitis, each 7; paralysis agitans, 6; aneurysm and pleurisy, each 5; dysentery, 4; tetanus, alcoholism and drug addiction, epilepsy, neuritis and pericarditis, each 3; typhus fever, anterior poliomyelitis, small-pox, scarlet fever, diphtheria, pellagra and gangrene, each 2; and yellow fever and Asiatic cholera, each 1.

The causes assigned for the 114 deaths from accident were railway casualties, 24; automobiles, 17; falls and poisons, each 15; horses and vehicles, 10; drowning, 7; fractures, 5; burns and exposure, each 4; ptomain poison, 3; sunstroke, gunshot wounds and asphyxia, each 2, and x-ray burns, poisonous gases and mines, each 1. The 48 physicians who ended their lives by suicide selected the following methods: firearms, 22; poison, 18; cutting instruments and strangulation, each 3; and asphyxia and drowning, each 1. All of the 10 homicides were due to gunshot wounds, and of these 3 occurred in feuds or affrays.

AGES.—Of the decedents 30 were between the ages of 91 and 97; 214, between 81 and 90; 456, between 71 and 80; 497, between 61 and 70; 434, between 51 and 60; 323, between 41 and 50; 235, between 31 and 40; and 83, between 22 and 30. The greatest mortality occurred at the age of 65, when 60 deaths were recorded; at 69 and 70, when 59 deaths occurred, at 72, when 57 died. There was 1 death each at 92, 94 and 97 years of age; 2 at 22; 4 at 96 and 5 each at 90 and 93.

YEARS OF PRACTICE.—By periods of ten years the deaths were as follows: in the first decade, 237; second decade, 338; third decade, 469; fourth decade, 497; fifth decade, 395; sixth decade, 275; seventh decade, 71; and eighth decade, 1, who had been in practice for 72 years.

MILITARY SERVICE.—During the year 397 died who had served in the Civil War, and of these 107 were with the Confederate cause, and 152 were surgeons of United States Volunteers. There were 12 veterans of the Mexican War; 3, of the various early conflicts with Indians on the frontier; 32 had served in the Spanish-American War and 13 in foreign wars. The Army lost 23 officers,

past and present; and in addition, 2 members of the Medical Reserve Corps, and 22 acting assistant surgeons; the Navy, 19; and the Public Health and Marine-Hospital Service, 9. The death loss of the Organized Militia was 35, of whom 6 had attained the grade of surgeon-general.

MEDICAL POSITIONS.—Medical colleges sustained the loss of 138 professors, lecturers, instructors and demonstrators during the year; hospitals lost 326 members of staffs; municipalities, townships and counties, 201 health officers or physicians; and boards of education and school boards, 91 members. There were 45 deaths of members of state boards of health and medical registration and examination; 49 of coroners and medical examiners; 87 of United States pension examining surgeons; and 118 of railway surgeons.

Of those who died, 3 had served in the House of Representatives of the United States; 15 had been members of state senates; 57 members of lower houses; 58 had been mayors; 39, aldermen or councilmen; 58 had served as justices of the peace or other civil officers; 19 as postmasters; 21 as editors; 13 were clergymen, of whom 2 were medical missionaries; 5 were attorneys; 4 were consuls, and 8 had been medical directors of life insurance companies.

THE NOTABLE DEAD.—Among the more prominent dead of the year are:

Sarah Read Adamson Dolley, Elizabeth Blackwell and Emily Blackwell, pioneer women physicians of America.

Wharton Sinkler, Philadelphia, neurologist.

Fred Byron Robinson, Chicago, anatomist and research worker.

Edward Champe Carter, U. S. Army, health commissioner of Manila and member of the Opium Commission.

Howard Taylor Ricketts, Chicago, research investigator, a martyr to science.

Herbert Leslie Burrell, Boston, ex-president American Medical Association, surgeon, educator.

Henry Granger Piffard, New York City, specialist on diseases of the skin and genito-urinary system.

Alexander Johnson Stone, St. Paul, surgeon-general of Minnesota, surgeon and gynecologist.

William James, Cambridge, Mass., psychologist and psychic research worker.

James Nevins Hyde, Chicago, specialist on skin and venereal diseases.

Carey Kennedy Fleming, Denver, gynecologist.

DeForest Willard, Philadelphia, orthopedic surgeon.

John Veitch Shoemaker, therapist, former surgeon-general of Pennsylvania.

Carl Svantè Nicanor Hallberg, Chicago, pharmaceutical publicist, editor and teacher.

Frederick Holme Wiggin, New York City, prominent in state organization.

Nathaniel Pendleton Dandridge, Cincinnati, surgeon and teacher.

Landon Brame Edwards, Richmond, Va., sanitarian, editor and teacher.

Christian Archibald Herter, New York City, investigator and chemical pathologist.

John Cummings Munro, Boston, surgeon and clinician.

CLEAN MILK PRODUCTION

It is well known that milk is commonly produced under conditions that are less hygienic and cleanly than those under which any other food article or beverage is produced.¹ Credit for recent improvement in this respect is due in part at least to the activity of milk commissions, who make contracts with milk-producers to produce milk for infants and invalids under certain prescribed conditions and who in turn have their milk certified. The amount of certified milk produced is but a small fraction of the total supply, but in spite of this the moral influence of milk commissions has been a large factor in bringing about an improved general supply.

It has been demonstrated that milk produced under rigorous conditions of cleanliness and care, coupled with prompt cooling, will keep sweet for a long time. This is explained by the fact that milk decomposes only when germs are present, and with the production of milk with a low bacterial content the keeping qualities are enhanced proportionally, especially when kept at a temperature below 40 F. Heinemann says that unfortunately heretofore certified milk has been produced at little or no profit, chiefly because of lack of demand and the higher price charged for it. It is generally marketed by dairies with considerable capital and occasionally from philanthropic motives, so that it is a belief among the ordinary producers that only a rich man or a crank will attempt to produce it. He believes that this is a misconception; that clean milk can be produced advantageously, and that even certified milk can be produced with a small outlay of money. He cites the instance of a dairy in Wisconsin which markets in Chicago, 100 miles away, milk with a bacterial content of less than 2,000 bacteria per cubic centimeter—in many instances less than 1,000—which returns a fair profit on the investment with milk at six cents a quart in bottles at the farm. This dairy has only thirty cows and produces 250 quarts of milk a day. It has been fitted up with the equipment and supplies of a modern sanitary dairy—cement floors, stalls and stanchions, water-supply, washing and sterilizing machines, bottling machine, bottles, cooling apparatus, pails, cans, etc.—for less than \$1,650. There is abundant light and ventilation in the stables, and every detail of clean milk production is carried out rigorously.

Dr. Heinemann believes that this example forms a justifiable basis for the assumption that certified milk can be produced with a small investment at a profit if the

1. Heinemann, P. G.: *Hoard's Dairyman*, Nov. 18, 1910.

owner or superintendent will look after each detail with proper care and intelligence, and that for the production of a milk of exceptional cleanness and quality, even if not up to the standard of certified milk, a much smaller investment than the estimate given would be sufficient. On account of the interest aroused by sanitarians and scientists in this subject, the public will soon demand of all milk-producers milk of this standard.

Current Comment

INDEX IN THE TWENTY-SEVENTH NUMBER

The last half of 1910 contained twenty-seven Saturdays. The last volume of *THE JOURNAL*, therefore, contained twenty-seven issues. As a result, our readers have received more than the usual amount of good reading, if we may be permitted to say so. Another result—one which we had not anticipated—is the receipt of a number of letters similar to the following, quoted from one: "As I failed to receive the index which has always accompanied the twenty-sixth number of each volume of *THE JOURNAL*, and as I value my files very highly and am anxious that all my bound volumes shall be complete, I trust you will pardon me for inquiring whether it was an oversight in my case or whether the index has been omitted from this volume." Of course, by this time, all of these valued readers have had their anxiety allayed by the arrival of the twenty-seventh issue—that of Dec. 31, 1910. We are not altogether sorry over their temporary disappointment, because it has served to bring a number of appreciative letters on the value of the index.

A CITY'S LIABILITY FOR TYPHOID FEVER

An interesting decision on the question of the liability of a municipality for typhoid infection through defective water supply is abstracted in our *Medicolegal Department* in this issue. This is a most important and far-reaching decision; we hope to comment on it editorially next week.

THE COMMISSION EVIL

The secret division of fees between surgeons and family physicians has recently given rise to considerable sensational discussion in the newspapers. From the degree of surprise manifested in these articles, one might be led to believe that the existence of this evil in the profession has not heretofore been suspected by the public. If this is true, it is because the frequent warnings of physicians on this point, in both medical meetings and medical journals, have been ignored. The records of the American Medical Association, as well as those of many other medical organizations, will show that the payment of commissions for patients—for that is what the division of fees practically amounts to—has been repeatedly and unsparingly condemned. Since the regulation of the acts of individual members lies with the local society, rather than with

the state or national organization, this question must necessarily be dealt with by county societies, many of which have denounced this practice in the past, as, from time to time, we have had occasion to note. This week we present the report of a special committee of the Erie County (N. Y.) Medical Society¹ on this subject. This committee was appointed nearly a year ago and has made a long and careful investigation of conditions. Its report, therefore, may be regarded as one worthy of notice, and for this reason we are glad to reproduce it. This committee has taken up the question calmly but fearlessly, as should be done by every county society in which there is a suspicion of the existence of this evil. The full light of publicity, not only professional but general, should be turned on all those who adopt such methods.

NOT MORE BUT BETTER-EQUIPPED MEDICAL COLLEGES NEEDED

Attention has repeatedly been called in these columns to the superabundance of medical colleges in this country and also to the general need for those which were better equipped, better conducted and better financed. Many improvements in this respect have been brought about by the merging of two or more colleges, thereby forming in each instance one college, which was invariably stronger and better equipped. Improvements by this process of merger are still being rapidly brought about. During the last year twelve colleges merged their interests, whereby six better-equipped and stronger colleges resulted. Two of these mergers were in Chicago. But the possibilities of obtaining better colleges by the merger of weaker ones are still numerous and could be brought about without a serious reduction in the number of colleges. The merger of two or more of the medical schools in Chicago or in other localities is probably the most important step that could be taken in the solution of the local educational problem. It is hoped, therefore, that reports of actual accomplishment will follow the rumors which come to us of proposed mergers in several places.

THE USE OF ULTRAVIOLET RAYS FOR STERILIZING WATER

The germicidal action of light, particularly the ultraviolet rays, on bacteria has long been known and has been already to some degree practically utilized. One of the latest applications is the exposure of polluted water to the ultraviolet rays from a quartz-tube mercury-arc lamp of the "Westinghouse-silica" type. The method is based on experiments carried out in Paris in the laboratories of the Sorbonne. Its bactericidal efficiency has been demonstrated by repeated tests on water containing large numbers of *Bacillus coli* and other microorganisms. The apparatus employed is very simple, consisting essentially of a trough or box provided with baffle-plates through which the water is run in close proximity to one or more of the sterilizing lamps. It is necessary, of course, to clarify a turbid water before treatment to insure adequate penetration. An ultra-

1. Department of Medical Economics, page 59.

violet ray plant has recently been installed as the result of a competitive test at Marseilles, France, a city long scourged with typhoid fever. The cost of this mode of sterilization is said to compare favorably with that of the ozone process.

AN AMERICAN CONGRESS ON MEDICAL EDUCATION

During the week of February 27 to March 4, 1911, several organizations interested in medical education and medical licensure will meet in Chicago. The Council on Medical Education and the National Legislative Council of the American Medical Association will hold their second joint conference March 1 to 3; the Association of American Medical Colleges holds its session February 27 and 28 and the National Confederation of State Medical Examining and Licensing Boards meets February 28. Since these organizations are all working toward the same end it is indeed encouraging to know that they are thus getting closer together. Working in harmony, they can exert most effective influence for good.

Medical News

ALABAMA

Personal.—Dr. E. Marion Mason, Montgomery, resigned as state bacteriologist and pathologist, December 1, and has moved to Birmingham.—Dr. Robert Nelson was elected president of the Education and Aid Association of the Birmingham Health Department at the annual meeting, December 16.

Society Meetings.—At a meeting of the Calhoun County Medical Society at Anniston, December 6, Dr. B. Dudley Williams, Oxford, was elected president; Dr. Erastus T. Barker, McFall, vice-president; Dr. Irwin P. Levi, Anniston, secretary for three years; Dr. Edmunds C. Anderson, Anniston, treasurer for three years; Dr. Robert L. Hughes, Choccolocco, county health officer for two years; Dr. William Y. White, Anniston, city health officer for two years, and Dr. William H. Kinnebrew, Piedmont, censor for five years.—At the annual meeting of Jefferson County Medical Society, held in Birmingham, December 5, Dr. James S. McLester, Birmingham, was elected president; Dr. Sidney H. Mann, Ensley, vice-president; Dr. Henry N. Rosser, Birmingham, county health officer for two years; Dr. Robert H. Hamerick, Birmingham, county physician; Dr. George Stubbins, assistant county physician; and Dr. Frank A. Lupton, Birmingham, censor for five years (reelected).

ARIZONA

Examination of School Children.—The first systematic medical examination of school children in Arizona has been inaugurated in Bisbee. The pupils of all schools of the district will be given thorough medical examination by the city health officers.

New Chief Surgeon.—Dr. Winfred Wylie, Phoenix, has been made chief surgeon of the Arizona Eastern Railway lines, vice Dr. George E. Goodfellow, Tucson, deceased. The headquarters of the chief surgeon will be moved at once from Tucson to Phoenix.

Medical Society Organized.—At a meeting for organization of the medical fraternity of Gila County, at Globe, recently, the Gila County Medical Society was organized. Dr. John Bacon, Miami, was elected president; Dr. Roderick D. Kennedy, Globe, vice-president; and Dr. John L. Wales, Globe, secretary-treasurer. Dr. Joseph N. McCormack, Bowling Green, Ky., was present, and addressed the meeting.

CALIFORNIA

Plague Prevention.—During the week ended November 12, 1,450 acres of land in Contra Costa County were covered with poison, the work being done in connection with making a squirrel-free zone around the cities on San Francisco Bay.

Personal.—Dr. George M. Bumgarner, Bakersfield, has been appointed health officer of Kern County, vice Dr. William S. Fowler, removed to Los Angeles.—Dr. Charles E. Stone, Marysville, superintendent of the Yuba County Hospital, is reported to be critically ill.—Dr. Edmund O. Sawyer has been appointed health officer of Los Angeles County, vice Dr. Owen R. Stafford, term expired.

Tuberculosis Notes.—Eight citizens of Riverside have given \$100 each to start a sanatorium at the foot of Box Springs Mountains for persons afflicted with tuberculosis.—The Free Clinic for Tuberculosis Patients has leased new quarters at 527 Seventeenth St., Oakland, and the new clinic was opened for patients December 6. The offices of the Alameda County Society for the Study and Prevention of Tuberculosis will also be moved to the new location.

Illegal Practice.—Lee Tie Bong, a Chinaman, was found guilty of practicing medicine without a license in San Francisco and fined \$100.—Chan Toa, who advertised himself as a doctor, was fined \$100 for practicing medicine without a license.—F. J. Lewzy, Mrs. May White and J. J. Leek, prosecuted by the California State Medical Board, and charged with the illegal practice of medicine, are said to have been found guilty and sentenced to pay a fine of \$100 each.

County Societies Elect.—At the annual meeting of Sonoma County Medical Society, held in Santa Rosa, December 5, the following officers were elected: resident, Dr. J. Walter Seawell, Healdsburg; vice-president, Dr. Reuben M. Bonar, Santa Rosa; secretary, Dr. Jackson Temple, Santa Rosa; treasurer, Dr. Fredd O. Pryor, Santa Rosa; and censor, Dr. Joseph W. Seamell, Windsor.—San Mateo County Medical Society, at its annual meeting in Belmont, elected the following officers: president, Dr. Franklin M. Seibert, San Mateo; vice-presidents, Drs. Archibald L. Offield, Burlingame, and Charles F. McCarthy, San Mateo; and secretary-treasurer, Dr. Wood C. Baker, San Mateo.

GEORGIA

Students Contribute to Fund for Alma Mater.—The student body of the Medical College of Georgia, Augusta, has made a contribution of \$1,620 toward the fund which is being raised for the improvement of the institution.

Small-Pox Epidemic Subsides.—The epidemic of small-pox in Coweta and Meriweather Counties along the lines of the A. B. and A. Railroad has practically ended, thanks to the painstaking labors of Drs. Andrew J. Mann, Alva-ton; William P. Ellis, Oakland, and Robert B. Gilbert, Greenville, county health officer, with the cooperation of the local authorities.

New Society Officers.—At the annual meeting of the Eleventh District Medical Society, held recently in Valdosta, the following officers were elected: president, Dr. Alexander G. Little, Valdosta; vice-president, Dr. Henry C. Wheelchel, Douglas, and secretary-treasurer, Dr. William E. Miller, Eastman. The next meeting will be held in Eastman in June, 1911.—The South Georgia Medical Association held its annual meeting in Cordele, December 7, and elected the following officers: president, Dr. Arthur R. Heyward, Warwick; vice-president, Dr. J. S. McKenzie, Cordele, and secretary-treasurer, Dr. T. E. Bradley, Cordele (reelected).—Bartow County Medical Society, at its annual meeting in Cartersville, December 14, elected the following officers: president, Dr. Robert I. Battle, Cartersville; vice-president, Dr. Tanner Lowry, Euharlee; secretary-treasurer, Dr. Howard E. Felton, Cartersville; censors, Dr. Alfred B. Greene and Alfred T. Calhoun, both of Cartersville, and delegates to the state society, Drs. Alfred B. Greene, Cartersville, and Ward Redwine, Cassville.—Fulton County Medical Society, at its annual meeting, December 15, elected the following officers: president, Dr. Edgar G. Ballenger; vice-president, Dr. L. Benjamin Clarke; secretary, Dr. Richard R. Daly (reelected); treasurer, Dr. Arnold H. Lindorme (reelected); and censor, Dr. Frederick G. Hodgson, all of Atlanta.

ILLINOIS

Personal.—According to the *Bulletin of the Illinois State Board of Health* for December, there are six physicians in the Forty-Seventh General Assembly: Drs. John H. Gray, Morrison, and James A. Womack, Equality, in the Senate, and Drs. James M. Bell, Rochester; I. N. Martin, LaHarpe; W. E. Stedman, Sullivan; and Hall Whiteaker, Mound City, in the House of Representatives.—Dr. J. H. Bacon, Peoria, was operated on for appendicitis at the Proctor Hospital, December 29, and is recovering nicely.

INDIANA

Ill and Injured.—Dr. W. W. P. McMillen, Decatur, slipped on an icy pavement, December 20, breaking his left arm.—Dr. R. W. Hurt, Indianapolis, fell December 3, fracturing his right leg.—Dr. Charles M. Coggins, Coal Creek, who has been seriously ill, is reported to be convalescent.—Dr. John H. Rerick, LaGrange, who has been seriously ill, is reported to be convalescent.

Pure Food Law in Indiana.—The enforcement of the pure food law in Indiana was much in evidence last week. In Indianapolis tests made in the food and drug laboratory of the State Board of Health, of several prepared breakfast foods of different brands, showed that packages marked 1 pound net contained only 10 ounces. A grocer in Indianapolis was arrested for adding water to oysters which he sold. In Terre Haute 10,000 bottles of tomato catsup from one establishment and 6,000 bottles and 340 gallon jugs from another establishment were seized. This catsup contained decomposed vegetable matter, and is said to have been made by a Cincinnati firm from refuse of canning factories.

Personal.—Dr. Thomas L. Taylor, Indianapolis, has been appointed house physician at the Indiana School for Feeble-Minded Youth.—Dr. E. E. Dougherty, a member of the staff of the Indianapolis City Dispensary, has resigned, under the new rule of the city board of health that no intern at the dispensary can be employed in any other capacity, and has been succeeded by Dr. John C. Irwin, Frankfort, Ind.—Dr. Hugh M. Hall, Camden, suffered the loss of his home and office in a fire, December 17.—Dr. Kent K. Wheelock, Fort Wayne, has returned from Europe.—Dr. Asa W. Brown, Bluffton, has been appointed secretary of the Wells County Board of Health, vice Dr. Louis Severin, Bluffton, resigned.—Dr. William A. Wildman has been appointed a member of the pension board of Butlerville, vice Dr. Green, deceased.

Preliminary Medical Curriculum.—President W. A. Mills of Hanover College; President Francis J. McConnell, DePauw University; Vice-President O. P. Kinsey, Valparaiso University; Prof. Stanley Coulter, Purdue University; Acting Vice-President M. E. Crowell, Franklin College; Dean M. B. Thomas, Wabash College; Dr. R. E. Lyons, Indiana University; and Vice-President T. A. Crumley, University of Notre Dame, met with the State Board of Health at Indianapolis, December 22, to establish a preliminary medical curriculum for the various state institutions. The regular amount of entrance work suggested was at least eighteen college months and should presuppose fourteen units of training in high schools or other preparatory institutions. The designation of special studies was referred to a committee for decision. The uniformity of courses offered by Indiana commissioned high schools was approved.

Society Meetings.—At the annual meeting of the Lake County Medical Association, held in Hammond, December 8, Dr. Edward E. Evans, Gary, was elected president; Dr. George W. Miller, Hammond, vice-president; Dr. Charles A. DeLong, Gary, secretary; Dr. George E. Miller, East Chicago, censor; and Dr. William F. Howat, Hammond, delegate to the state society.—The Fort Wayne Academy of Medicine held its annual meeting, December 9, and elected the following officers: president, Dr. Cecil C. Kimmel; vice-president, Dr. Homer E. Glock; secretary, Dr. Irvin W. Ditton; treasurer, Dr. Alfred L. S. Kane; and censors, Drs. John E. McArdle, Willis W. Carey and Allen Hamilton.—Laporte County Medical Association, at its annual meeting, December 9, elected Dr. Jesse B. Rogers, Michigan City, president; Dr. John N. Kelly, Westville, vice-president; Dr. George R. Osborn, Laporte, secretary and delegate to the state society; Dr. Edward G. Blinks, Michigan City, treasurer, and Dr. Benjamin W. Hollenbeck, Westville, censor.—Dearborn County Medical Society, at its annual meeting in Lawrenceburg, December 20, elected Dr. Jesse L. McElroy, Aurora, president; Dr. George W. Hansell, Guilford, vice-president; Dr. Orville S. Jaquith, Lawrenceburg, secretary; and Dr. Arthur T. Fagaly, Lawrenceburg, treasurer.

KANSAS

County Society Meeting.—The Republic County Medical Society met in Belleville, November 17, and elected Dr. William Kamp, Belleville, president; Dr. John B. Henry, Scandia, vice-president, and Dr. Jay C. Decker, Belleville, secretary.

Personal.—Dr. Allen W. Dortch, Arkansas City, was painfully injured in a runaway accident, December 5.—Dr. Josaphyne R. E. Davis, Ottawa, is reported to be critically ill in University Hospital, Kansas City, with septicemia due to an operation wound.

To Remain at Rosedale.—The regents of the University of Kansas are reported to have decided to retain the medical school property at Rosedale. The reorganization contemplates the establishing of a teaching hospital in Kansas City, Kansas, and the employment on salaries of additional capable instructors. Dr. Samuel J. Crumbine, Topeka, Secretary of the Kansas State Board of Health, has been elected dean.

Alumni Organize.—At the annual meeting of the Alumni Association of the Medical School of the University of Kansas, held recently, the following officers were elected: president, Dr. George M. Gray, Kansas City, Kan.; vice-president, Dr. Marion Truehart, Sterling, Kan.; secretary, Dr. Harold P. Kuhn, Kansas City, Mo.; and executive committee, Drs. Clifford C. Nesselrode, Kansas City, Kan., and Logan Clendening, Kansas City, Mo.

MARYLAND

Limit Professors' Salaries.—The authorities of the University of Maryland have limited the salary of medical professors to \$1,500 per annum.

Personal.—Dr. Augustine S. Mason, Hagerstown, is reported to be critically ill.—Dr. Frederick Taylor, Baltimore, is in University Hospital, suffering from fractured ribs as the result of a fall on the ice.—Dr. Howard A. Kelly, Baltimore, has gone to Mexico for a month.

For the Colored Insane.—The board of managers of the State Hospital for Colored Insane has purchased 561 acres of land near Crownville, Anne Arundel County, as a site for that institution. The remainder of the legislative appropriation will be employed in the erection of the necessary buildings.

Bequests.—By the will of Miss Ada George, the Nursery and Child's Hospital, and the Church Home and Infirmary, Baltimore, each receives bequests of \$1,000.—The late Edgar G. Miller left \$2,000 to the Baltimore Eye, Ear and Throat Charity Hospital.—Hebrew Hospital has been bequeathed \$1,000 by the will of the late Joseph Fredenwald.

Medical Society Meeting.—Dorchester County Medical Society met in Cambridge, December 13, adopted a new constitution, and elected the following officers: president, Dr. C. Frank Maguire, Hurlock; vice-president, Dr. Edward L. Jones, East New Market; secretary-treasurer, Dr. William H. Houston, Fishing Creek, and censors, Drs. John Mace, Cambridge, E. A. Jones and Joseph K. Shriver, Jr., Taylor's Island.

MICHIGAN

Lapeer Quarantine Temporarily Raised.—The quarantine against the Michigan Home for the Feeble Minded, Lapeer, was raised December 22, as there have been no new cases of small-pox in the institution in four weeks. The expense of the state troops on duty at the institution as a quarantine guard amounts to \$5,373. On December 28, the institution was again placed in quarantine on account of the occurrence of another case of small-pox.

Academy Election.—At the annual meeting of the Kalamazoo Academy of Medicine, held December 13, the following officers were elected: president, Dr. John H. Crosby, Otsego; vice-presidents, Drs. H. L. Stewart and Lemuel E. Clark, Otsego, and Francis C. Penoyer, South Haven; secretary-treasurer, Dr. Charles E. Boys, Kalamazoo; censors, Drs. Adolph Hoelstein, Edward P. Wilbur and George F. Inch, Kalamazoo; librarian, Dr. Edward J. Bernstein, Kalamazoo; delegates to the state society, Drs. Wilbur F. Hoyt, Paw Paw, and William A. Stone, Kalamazoo; and alternates, Drs. J. Charles Maxwell, Paw Paw, and John B. Jackson, Kalamazoo.

Deaths of Children in Detroit.—An investigation of the alleged incorrectness of the recent statement of the Census Bureau, of the proportion of deaths of infants in Detroit, as published in the official bulletin on mortality statistics for 1909, has been made by Dr. Cressy L. Wilbur, chief statistician of the bureau, acting in conjunction with the representatives of the secretary of state of Michigan. Subsequent to the issuance of the bulletin, the Detroit health authorities claimed that only 20 per cent. of the deaths at all ages in 1909 was of infants under 1 year, notwithstanding the fact that the census compilation gave a ratio of 29 per cent. Some local papers and the city health authorities of Detroit insisted that the bureau's figures were incorrect and injurious. After a thorough inquiry, Dr. Wilbur reports that the Detroit health authorities now admit that the census figures are correct, and that errors in the local compilation made it appear that 20 per cent. was the proper proportion. The health officer of Detroit has undertaken to reform the system in his office so that results hereafter will be strictly comparable with those of the Census Bureau.

NEW YORK

Sale of Red Cross Seals.—The manager for the sale of the Red Cross seals throughout the state reports that the sales outside of New York City and Buffalo will amount to at least \$75,000, which is three times the amount of the sales of last year.

Drink Wood Alcohol.—It is reported from Kingston, N. Y., that wood-alcohol drinking has reached such proportions among the laborers on the New York Aqueduct that several deaths and numerous cases of severe illness have occurred. Efforts will be made to educate the men in regard to the dangers of this drug.

New York City

Label Milk for Infants.—A set of resolutions drawn up at the milk conference held on December 2 and 3 states that of the 16,000 babies that die annually in New York City, 4,000 are killed by bad milk and improper food, and that the most important problem connected with securing safe milk for infants is that of securing the proper labeling of milk so that mothers will know what is safe.

Would Make Vaccination Optional.—A complaint was recently brought against a resident of Staten Island charging him with violating the compulsory education law because he kept his children from school rather than submit them to vaccination. The case was decided in favor of the defendant and it is rumored that it will be made the basis of a campaign against compulsory vaccination. It is planned to make a demand that the Board of Education establish five schools, one in each borough, where vaccination may be optional according to the inclinations or beliefs of the parents. The bill providing that vaccination be made optional which was defeated at the last session of the legislature will be presented at the next session.

Hospital Interns Meet.—The first regular clinical meeting of the Society of Hospital Interns of New York City was held in St. Luke's Hospital, December 19. After reports of cases by seven interns, a general discussion followed on the clinical methods pursued at the different hospitals. Dr. Nathaniel Bowditch Potter, visiting physician to the City Hospital, and the originator of the idea of organization among interns, delivered an address on the purpose, scope and advantages of the society, in which he spoke of the immense value of such a society, not only to its members but to the profession in general, also of the spirit of rivalry that would obtain and the cooperation and unanimity essential among hospital interns, and the diffusion of new ideas that its meetings are bound to promote.

OHIO

Columbus Practitioners' Society Meets.—At the annual meeting of the General Practitioners' Society of Columbus, December 8, Dr. Emma O. Jones was elected president; Dr. Harry E. Myers, vice-president; Dr. Albert S. Barnes, secretary, and Dr. Charles H. Wells, treasurer.

Gift to Hospital.—Announcement was made, December 15, of a donation of \$100,000 to the Babies' Dispensary and Hospital Association, Cleveland, by Mr. and Mrs. J. H. Wade, the only condition being that a memorial tablet to Mr. Wade's mother be placed in the new dispensary which is being erected by the association.

Tuberculosis Notes.—A tuberculosis sanatorium has been incorporated at Hamilton with a capital of \$20,000.—A bureau of tuberculosis has recently been established in the health department of Cleveland, of which Dr. Robert H. Bishop is chief. Five tuberculosis dispensaries are being maintained in the city, each having its own salaried physician.

Personal.—Dr. William T. Lindsay, Cincinnati, has been appointed physician of Hamilton county jail, vice Dr. Louis J. Feid, resigned.—Dr. Joseph W. Chetwynd, assistant physician at the Massillon State Hospital, has resigned and will practice in East Liverpool.—A dinner was given in Cleveland, December 15, to Dr. Giovanni A. Barricelli, by 150 Italian-American citizens in celebration of the physician's recovery from a critical operation.—Dr. Sherman E. Simmons, Norwalk, is reported to be convalescent after a long illness.—Dr. Adam L. Jackson, Zanesville, who has been ill with cerebral hemorrhage, is reported to be improving rapidly.—Dr. William W. Smith, Portsmouth, who sustained a fracture of the arm recently, has resumed practice.—Dr. James F. Madden, Toledo, sailed for Europe, December 21.

PENNSYLVANIA

To Compel Birth Reports.—In order to enforce the statute requiring a report of all births, the State Health Department caused the arrest of five physicians of Pittsburg, who were held in \$500 bail for court, and action is threatened against 100 others. Dr. James F. Edwards, registrar of vital statistics, says that physicians have been disregarding this statute for several years. In many cases, when burial certificates were asked for children, no certificate of birth could be found by the health department.

Philadelphia

Personal.—Dr. S. Weir Mitchell, who has been a trustee of the University of Pennsylvania since 1875, has resigned.—Arthur R. Cushny, M.D., F.R.C.S., professor of pharmacology in the University of London, will deliver the first of the series of "Weir Mitchell Lectures" at the Weir Mitchell Hall in the College of Physicians on January 17. His subject will be "Heart Irregularity from Auricular Fibrillation."

Death Rate in 1910.—With the exception of 1908 and 1909, the death rate in this city in 1910 was the lowest in the history of the community. The total number of deaths reported was 26,879 and the rate of mortality 17.35 per 1,000 population. In 1908, the rate was 17.17 per thousand population, and in 1910, 16.40 per 1,000 population; 1909 holding the record as determined by the Bureau of Statistics.

First Branch of Free Medical Library Opened.—A medical section of the Free Library at Lehigh Avenue and Sixth Street was opened during the last week in December. A selection of modern text-books, made by the Library Committee of the Philadelphia County Medical Society, is in place on the shelves and current numbers of the best medical journals are on the tables. The committee has likewise in hand a nucleus of a similar collection for the new Southwark Branch Library, now under construction.

GENERAL NEWS

Small-Pox on Transport.—News was received at San Francisco, December 27, of an outbreak of small-pox on the transport *Logan* en route from Honolulu to the Philippine Islands.

Hygienists to Meet.—The fifth Congress of the American School Hygiene Association will be held at the Academy of Medicine, New York City, February 2 to 4, under the presidency of Dr. Luther H. Gulick, New York City.

Prevention of Blindness.—At a meeting of physicians and laymen in New York, December 17, the National Association for the Prevention of Blindness and the Conservation of the Eyesight was formed. Dr. F. Park Lewis, Buffalo, was elected chairman of the board of directors.

Proctologic Society Prize.—The American Proctologic Society announces that the sum of \$100 will be awarded to the author of the best original essay on any disease of the colon, by a graduate or senior student of any medical college in the United States, not a member of the society. Essays must be submitted to the secretary of the committee, Dr. Lewis H. Adler, Jr., 1610 Arch Street, Philadelphia, before May 10. Each essay must be typewritten, designated by a motto or device without signature, and must be accompanied by a sealed envelope having on the outside only the motto or device contained on the essay, and within, the name and address of the author and motto or device used on the essay. The committee reserves the right not to make the award if no essay considered worthy of the prize is submitted. The object of the prize and competition is to stimulate increased interest in and knowledge of proctology.

FOREIGN NEWS

British-American Hospital for Chile.—The site has been secured and plans are under way for the construction of a hospital at Valparaiso, Chile, by the British and American colonies. The hospital is to cost up to \$50,000, and is intended to be modern in every respect.

The Netchaev Festschrift.—The issue of the *Russkiy Vrach* of November 25 is a special *Festnummer* of 175 pages in honor of Dr. A. A. Netchaev's continuous service for twenty-five years as chief of the Obuchow general hospital at St. Petersburg. It contains forty-seven articles from the internists and surgeons connected with the hospital and the proceedings for the last two years of the association of hospital physicians.

Cholera Passes the Hundred Thousand Mark.—The entire issue of the *Russkiy Vrach* of December 3 is devoted to articles on cholera and the great epidemic in Russia this year. The

disease had caused 100,679 deaths by that date according to the official register. The distribution, mode of spread, healthy carriers, treatment and other aspects of the problem are discussed in detail, with especially minute study of conditions at St. Petersburg. The epidemic is dying out.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 16, 1910.

The Discovery of Carbon-Monoxid Poisoning Long After Death

On May 11 occurred at Whitehaven one of those mining disasters which from time to time send a thrill of horror through the country: 136 men and boys lost their lives. An explosion occurred and the mine caught fire. After all attempts at rescue failed, the affected parts were bricked up to prevent the fire from spreading. Five months afterward the bodies were found, most of them being much decomposed. Specimens of liver and heart were sent to a physiologist for examination with the result the spectroscope showed that in 35 cases death was due to poisoning by carbon monoxid. This constitutes a record in the length of time for the detection of carbon-monoxid hemoglobin. In many of the other bodies it was supposed that death was due to the same cause but that the carbon monoxid was dissociated by heat and bacterial agency.

The Health of the Navy

The annual statistical abstract of the health of the navy for the year 1909, which has just been issued, shows a continuous improvement in the general health of the fleet as compared with the preceding five years. Not only are the ease, invaliding, and death ratios lower than the average for the preceding five years, but the average loss of service for each person has again dropped, from 10.8 to 9.76 days. The total force in the year 1909 was 112,700 and the total number of cases of disease and injury was 72,540, which gives a ratio of 643.65 per thousand, a decrease of 75.34 as compared with the average for the preceding five years. The total number invalided was 2,007, which gives a ratio per thousand of 17.8, a decrease of 4.3 in comparison with the average of the preceding five years. The total number of deaths was 362, giving a ratio of 3.21 per thousand, a decrease of 0.54 in comparison with the average of the preceding five years. Two hundred and fifty-eight were due to disease and 104 to injury. The number of days' loss of service due to venereal disease was 325,889, while the average daily number of men ineffective from these diseases was 892, as compared with 889 in 1908 and 903 in 1907.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 16, 1910.

Personal

The professors of the Paris medical college have just nominated Dr. Dejerine, professor of medical pathology, to the clinical chair of diseases of the nervous system at the Salpêtrière. This position, once made notable by Charcot, was recently occupied by Professor Raymond, who died last September. Professor Dejerine is to-day about 55 years old. He was a pupil of Vulpian, and, from the beginning of his career, specialized in diseases of the nervous system. His scientific work in this domain is of considerable extent, and his books on myopathy, neuritis, tabes, and motor and sensory spinal localizations, have brought him a great reputation. In collaboration with his wife, Mme. Dejerine-Klumpke, he has published an "Anatomy of the Nervous Centers," and in collaboration with Dr. Thomas, a work on diseases of the spinal cord, which appeared in Brouardel and Gilbert's treatise on medicine and therapeutics.

The House Where Pasteur Was Born

The municipality of Dôle, Jura, has just voted to buy and preserve the house where Pasteur, on Dec. 27, 1822, was born. It has decided, moreover, to ask the aid of "all of the admirers of that great benefactor of humanity."

Feminine Candidacy for the Academy of Sciences

In consequence of the candidacy of Mme. Curie for the place of M. Gernez in the section of general physics of the Académie des sciences, some members of the various academies composing the Institut de France (the Académie de médecine is not a part of the institute), influenced by the possibility of a prece-

dent, have petitioned these academies to lay the question before the central commission. The petition has aroused a very warm discussion on the part both of the defenders and of the adversaries of feminine candidacy. The idea of complete solidarity among the various academies which compose the institute has been defended against the theory of the entire autonomy of each academy. The fact has been especially emphasized that the election of a member to one of the five academies carries with it the title of member of the institute, and that in accepting feminine candidacy, the Académie des sciences runs the risk of sometime admitting a woman to the presidency of the institute, that is to say, of all the academies, even of those opposed to the admission of women. Failing to agree, the commission decided to send the petition to the administrative commissions of each of the five academies for their advice, and then to lay the question before the five academies assembled for the trimonthly joint session, which will be held in January.

In this connection it is not without interest to note that the section of chemistry of the Royal Academy of Science of Stockholm has just decided unanimously to elect Mme. Curie as a foreign member in place of the Italian savant Cannizzaro, deceased.

Resolution in Regard to the Premature Publication of New Remedies

In the course of its last session the Association des journalistes médicaux français passed the following resolution: "Considering the real danger presented by premature publication of new remedies, the association regrets the haste with which incomplete ideas relative to such remedies are placed before the public in the lay press."

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 9, 1910.

Personal

Privy Councillor Prof. Kirehmer of the Prussian department of education has been chosen to fill the place of Robert Koch in the board of directors of the Robert Koch foundation for the campaign against tuberculosis.

As a result of the founding of an institution for research under the auspices of the Kaiser, which I reported to you in connection with the centennial of the Berlin university, he has received the honorary degree of doctor from the medical faculty of the university of Prague.

Leyden Lectures

As a permanent honor to its founder, who was also for many years its honorary president, the Verein für innere Medizin und Kinderheilkunde of Berlin resolved, on motion of Professor Schwalbe, to establish a Leyden lectureship, the lecture to be given annually at the first session of the winter semester, by a speaker selected by the board of directors. This arrangement, which follows the English custom, is the first of the kind made in Germany. A large fee will be paid the lecturer, derived from the interest of the fund of \$14,000 (56,000 marks), established on the seventieth birthday of von Leyden. The rest of the interest on the fund is to be devoted to scientific research under the influence of the society for internal medicine (Verein für innere Medizin), as the president of the society is also president of the fund.

Strike of Contract Physicians at Halle

A short time ago a difficulty arose about fees between the management of the local sick insurance societies in Halle and their medical appointees, and the Leipsic league forbade any supply to the societies by other physicians. As the insurance societies on this account were unable to supply proper medical aid, the city government on the authority of the social insurance law deprived the insurance officials of their office and took over the management of the bureau. A contract has now been concluded between the city government and the insurance physicians, which meets the demands of the physicians. This affords new evidence of the power of the Leipsic league backed by the German medical profession.

This affair will doubtless tend to make the legislators, who are still busy with the new imperial insurance law, more careful to avoid conflict with the entire medical profession. The management of the Leipsic league has issued an announcement to the effect that physicians will combine for mutual aid if the projected unfavorable provisions of the new imperial insurance bill are enacted into law.

Proposed Professional Courts of Honor for Bavaria

After repeated unsuccessful trials to establish courts of honor by law, the Bavarian medical councils have attempted to make such an arrangement themselves. According to their plan, each society shall establish an arbitration and an honor court. The arbitration court shall have jurisdiction over all the members of the district society and the court of honor over all except military surgeons during their term of service and health officers who are not engaged in practice. The arbitration court has charge of all difficulties between physicians. Charges before the court of honor can be made by any physician and in certain cases even by laymen. The members of the district society are bound to apply to the arbitration court before suing a fellow practitioner. Laymen may be called as witnesses. The penalties may consist of warnings, notices, advice to resign from the society, money fines and expulsion. At the last session of the medical councils this plan was discussed but no decision was reached.

Wholesale Poisoning from Margarine

A few days ago a wholesale poisoning was caused in a number of cities, especially in Hamburg, by the use of Backa-Margarine from an Altona factory. The chemical investigation undertaken in Hamburg and other places showed the presence of a vegetable fat not more exactly characterized. The impression has been conveyed by an advertisement of the manufacturers, which offers a reward for the discovery of the person who adulterated the product, that it was a criminal action of some appointee. On the other hand, this view does not seem to be accepted by other manufacturing firms, for they have excluded the suspected firm from their association. It is to be hoped that further investigations will clear up this very deplorable affair.

Dental Students Boycott a School

The dental department of the Breslau university has been defective in room and equipment for a long time. Demands for improvement have been repeatedly made by the faculty and in parliament without success. Now about one hundred students have boycotted the institution, refusing to attend lectures and exercises. It is to be expected that this special protest will have a good effect.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 12, 1910.

A Discussion on Salvarsan ("606") in Vienna

The frequency of syphilitic affection in the patients frequenting the Vienna Policlinic and the various other hospitals and clinics of this city has rendered the experience of our syphilologists rather extensive. Postluetic and metaluetic affections are also very frequent in this country, and all such patients flock to Vienna from all Austria and from the south-eastern Slavonic and oriental states which have no nearer place whence to seek help. Thus Vienna has the advantage of seeing an enormous number of cases belonging to this group of diseases. Naturally the discovery of the powerful effects of Ehrlich's salvarsan has been followed up very quickly here, and Ehrlich has provided the Vienna hospitals with sufficient doses for the purpose.

A symposium was held recently in the two Vienna medical societies, in which the experiences gained within the few months were reported. Professor Finger's conclusions were that the remedy has a powerful and specific action; its chief indication is to be sought where a rapid action is necessary. Professor Finger cannot admit that the syphilitic process itself is influenced by it in a much better way than by the old remedies. Its harmlessness has not yet been proved; it seems to have a "neurotropic" action by sensitizing, so to say, certain nerves for the luetic toxin.

Professor Rehl has investigated the literature on bad results after injection of mercury and after salvarsan. Hitherto 40,000 injections of the latter have been made and not a single case of death could be attributed directly to the latter substance while since 1906 there are ninety cases of fatal result after mercury injection. Therefore there seems to be, in his opinion, reason for the preference of "606."

Professor Urbantschitsch has seen sixty cases of affections of the ear caused by syphilis or by salvarsan. The interesting point is that in many cases an isolated affection of the vestibular nerve, with nystagmus, dizziness and vomiting, has appeared a few days after the injection, but soon disappeared. On the other hand, inveterate luetic ear affections have improved wonderfully under "606," but it is yet a question whether the improvement will be a permanent one.

Professor Alexander has seen sixty-four cases of syphilis of the ear before the introduction of "606," among them only three in recent syphilis. Therefore the frequent appearance of ear trouble after "606" seems to show that this remedy has some undesirable effect on the auditory organs. Therefore Alexander thinks that salvarsan should be used only in inveterate cases of luetic labyrinthic dizziness and deafness.

Professor Matzenauer thinks that the remedy is very useful for obtaining rapid improvement of syphilitic symptoms, but that there is not yet a single proof that the action is a permanent one. In 3 per cent. it has failed altogether, while in five cases of lues maligna it has had in his hand a wonderful effect. Relapses appear to be frequent (8 per cent.) even in recent infections. In his opinion "606" has not only a "neurotropic" but also an "organotropic" action (fever up to 104 F., general malaise, sweating, vomiting, swelling of the syphilitic lesions.)

Dr. Oppenheim has found that the injection of the substance should be resorted to in all cases of luetic affection of the skin, the mucous membranes and the glands, which respond very quickly. Diseases of the nerves, however, were not so easily influenced and such cases could become much worse. Only if an *indicatio vitalis* was present he would, in opposition to Ehrlich, use it also in brain syphilis. The neurotropic action of the injection was well illustrated by the fact that optic neuritis has been observed by Professor Dimmer and by other ophthalmologists too, in very recent cases of syphilis treated by "606." This is a rarity and must be searched for further. Actual blindness has hitherto not been caused by "606" alone. Salvarsan seems to predispose the auditory and optic nerves to an attack by luetic toxins. Wassermann's reaction has not behaved uniformly. In some cases the reaction has disappeared within three days after the injection, and remained absent or returned after a lapse of three to six weeks or three months. In others, even a repeated injection did not make the Wassermann reaction negative. Therefore, even in this respect, the substance offers certain difficulties. It is the rule in this country to inject about 1/10 of a grain (0.007 gm.) per kilo body weight, in neutral solution preferably; intravenous injection has been recommended by Ehrlich only quite lately, and the results are said to be much better still.

Taking all the pros and cons into consideration, one is forced to admit that Ehrlich has added to the physician's armamentarium a most valuable weapon, the exact action of which has yet to be found. But in one respect it surely surpasses all other remedies. It is the best prophylactic we have at present, as Dr. Hobler said. He saw many hundreds of cases of old syphilis in Bosnia in South Austria, where the whole population may be regarded as more or less syphilitic or heredosyphilitic. He advises that all prostitutes known to the police be treated prophylactically with salvarsan. This would be, in his opinion, the safest means of eradicating the most dangerous and most frequent means of infection. If this were the law everywhere, syphilis might soon be mastered.

Marriages

BYRON F. BARKER, M.D., to Miss Mildred Todd, both of Bath, Me., December 14.

SAMUEL SALINGER, M.D., Chicago, to Miss Florence Whiteson of Philadelphia, December 26.

CLAY LLOYD NICHOLS, M.D., to Miss Effie Duckwall, both of Louisville, Ky., December 21.

SEYMOUR LEWIS HOMRIGHOUSE, M.D., to Miss Ada Gorss, both of Haganan, N. Y., recently.

ROBERT CADE PARRISH, M.D., to Mrs. Mary Barson Garrod, both of Philadelphia, December 15.

SOREN S. WESTLY, M.D., Manly, Ia., to Miss Susie Florynce Cron of Gladbrook, Ia., December 7.

ALAN GOODWIN BROOKS, M.D., Stov, Ill., to Miss Ruth E. Kenney of Oil City, Pa., December 17.

WILLIAM S. EHRLICH, M.D., Evansville, Ind., to Miss Bertha Jubad of Louisville, Ky., December 19.

WALTER EDWIN WALKER, M.D., Graham, N. C., to Miss Carrie Stanford of Marion, N. C., December 22.

CHARLES E. SMITH, M.D., Johnson City, Tenn., to Miss Dora Kinney of Mitchell County, N. C., recently.

WILLIAM EDGAR HOLLAND, M.D., Fayetteville, Pa., to Miss Rose Viola Byers, at Harrisburg, Pa., December 23.

Deaths

Willis Goss MacDonald, M.D. Albany (N. Y.) Medical College, 1887; a member of the Medical Society of the State of New York; professor of abdominal and clinical surgery in Albany Medical College; attending surgeon and consulting surgeon to the Westfield Hospital; a member of the Albany Board of Education; one of the prime movers in the establishment of the Raybrook State Hospital for the Treatment of Incipient Tuberculosis; major and surgeon of volunteers in the Spanish-American War; died at his home in Albany, December 30, from pneumonia, aged 47.

Frederick Wilcox Chapin, M.D. College of Physicians and Surgeons, New York City, 1873; a member of the American Medical Association; consulting physician and surgeon to the Springfield (Mass.) Hospital; a member of the local pension examining board; at one time trustee of the Northampton Insane Hospital; chairman of the camp committee of the local society for the prevention of tuberculosis; died at his home in Springfield, December 16, from angina pectoris, aged 61.

William Marsh Proctor, M.D. Hahnemann Medical College, Philadelphia, 1899; of Braddock, Pa.; surgeon to the Braddock works of the American Steel and Wire Company; who was operated on in the new Homeopathic Hospital, Pittsburg, December 13, leaped from a window in the hospital, December 14, while delirious, sustaining injuries from which he died an hour later, aged 36.

Charles Merrill Bertholf, M.D. Kansas City Medical College, 1904; a member of the Kansas Medical Society; physician for the Hamilton and Fidelity Coal and Mining companies, Cherokee; died in Peabody, December 16, from the effects of morphin, self-administered, it is believed with suicidal intent, while despondent, aged 35.

William MacQuigg, M.D. Western Reserve University, Cleveland, O., 1861; assistant surgeon of the Twenty-sixth Iowa Volunteer Infantry during the Civil War; a member of the local pension examining board; died at his home in Clinton, Iowa, December 18, from cerebral hemorrhage, aged 82.

Frank Whitman, M.D. Berkshire Medical College, Pittsfield, Mass., 1863; of Bellows Falls, Vt.; surgeon of the Fifty-eighth Massachusetts Volunteer Infantry during the Civil War; died at the hospital of Dr. Henry O. Marey, Cambridge, Mass., December 20, from arteriosclerosis, aged 75.

William H. Swander, M.D. Cincinnati College of Medicine and Surgery, 1859; for two years prospector to the chair of surgery; surgeon in the Federal service during the Civil War; for many years a resident of Washington, D. C.; died in Hampton, Va., December 11, aged 75.

Isaac H. Brewton, M.D. Medical College of the State of South Carolina, Charleston, 1886; formerly quarantine officer of Eagle Pass, Tex., and railway surgeon; died at his home in San Antonio, December 9, from septicemia, due to a carbuncle of the nose, aged 74.

Elizabeth Gallimore, M.D. Cooper Medical College, San Francisco, 1887; a member of the American Medical Association; of San Jose, Cal.; died in the Petry Sanitarium in that city, December 16, three weeks after an operation for appendicitis, aged 50.

Myron Watson Hunt, M.D. University of Vermont, Burlington, 1882; of Moreland, N. Y.; twice coroner of Oneida county, and a member of the board of education of Holland Patent; died in a hospital in Oklahoma City, December 5, from typhoid fever, aged 55.

Albert Reeder (license, years of practice, Massachusetts, 1894); was found dead in his apartments in Boston, December 25, from the effects of the inhalation of illuminating gas, aged 55. The medical examiner's decision was that the case was one of suicide.

Marquis L. Martin (license, Ind., years of practice); representative in the state legislature in 1872 and 1873; a practitioner of Indiana for 66 years; died at the home of his daughter in Rossville, December 14, from heart disease, aged 89.

J. W. F. Parker, M.D. University of Louisville, Ky., 1850; a member of the Kentucky State Medical Association; for several years president of the Pulaski County Medical Society; died at his home in Somerset, December 18, from pneumonia, aged 75.

James L. Clayton, M.D. University of Arkansas, Little Rock, 1891; representative from Concordia Parish in the Louisiana legislature from 1892 to 1896; and a member of the parish school board; died at his home in Clayton, December 23, aged 52.

Henry Parsons Terry, M.D. New York University, New York City, 1866; formerly supervisor of Riverhead, Long Island, N. Y.; and president of the Suffolk County National Bank; died at his home, December 5, from heart disease, aged 71.

Austin W. Foreman, M.D. American Medical College, Eclectic, St. Louis, 1878; of Vinita; a member of the Oklahoma State Medical Association; died in St. John's Hospital, Springfield, Mo., December 18, from disease of the stomach, aged 55.

Robert Hall, M.D. College of Physicians and Surgeons, New York City, 1856; a member of the Massachusetts Surgical and Gynecological Society; died at his home in Providence, R. I., December 13, from cerebral hemorrhage, aged 81.

Hugh L. Ferguson, M.D. Cincinnati College of Medicine and Surgery, 1869; at one time mayor of Westerville, O.; a veteran of the Civil War; died at the home of his son in Plain City, O., December 11, from osteosarcoma, aged 75.

George Scott Locke, Jr., M.D. Dartmouth Medical School, Hanover, N. H., 1900; formerly of Concord, N. H., and Fort Davis, Tex., died on his father's ranch in Jeff Davis County, Tex., November 4, from pneumonia, aged 35.

George Washington Smith, M.D. Hahnemann Medical College, Philadelphia, 1876; visiting physician to the Children's Homeopathic Hospital; died at his home in Philadelphia, December 14, from heart disease, aged 67.

William S. Elliott, M.D. Vanderbilt University, Nashville, Tenn., 1883; of Langford, Port Royal, Tenn.; died in a hospital in Rochester, Minn., December 12, after an operation for cancer of the intestines, aged 54.

John Selden Parker, M.D. Medical School of Maine, Brunswick, 1849; for many years a practitioner of East Lebanon; died at the home of his son in Providence, R. I., December 18, from senile debility, aged 86.

Ludwig Wehlau, M.D. University of Würzburg, Germany, 1874; a member of the American Medical Association; died at his home in Scranton, Pa., December 23, from carcinoma of the intestine, aged 59.

Montraville Waddle (license, years of practice, Ill., 1878); for 45 years a practitioner; hospital steward during the Civil War; died at his home in Carmi, Ill., December 22, from rheumatism, aged 77.

John Burgess Gaither, M.D. College of Physicians and Surgeons, Baltimore, 1869; a member of the Medical Society of the State of North Carolina; died at his home in China Grove, December 17, aged 63.

Frank W. Rodgers, M.D. Chicago Homeopathic Medical College, 1888; a member of the Ohio State Medical Association; died at his home in Findlay, O., from nervous prostration, December 18, aged 47.

James H. Harris (license, Md., 1873); professor of operative dentistry in the Dental Department of the University of Maryland; died at his home in Baltimore, December 12, from pneumonia, aged 76.

David L. Todd, M.D. Tulane University, New Orleans, 1854; surgeon in the Confederate service during the Civil War; died at his home in Washington, La., December 15, aged 83.

John Robert Culbertson, M.D. Atlanta (Ga.) Medical College, 1883; a member of the South Carolina Medical Association; died at his home in Gray Court, December 15, aged 65.

Giles F. Roosevelt, M.D. Denver Homeopathic College, 1902; a member of the Colorado State Medical Society; died at his home in Denver, December 10, from tuberculosis, aged 36.

John R. Miller, M.D. Cleveland, O., 1854; College of Physicians and Surgeons, Keokuk, Ia., 1861; died at his home in Elvaston, Ill., December 24, from senile debility.

Luther Cochran Cook, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1863; died at his home in Ellsworth, Kan., December 19, from cerebral hemorrhage, aged 82.

Henry Vigor, M.D. Eclectic Medical Institute, Cincinnati, 1870; for 60 years a practitioner; died at his home in Brandon, O., December 11, from senile debility, aged 89.

Benjamin Hill, M.D. Ensworth Medical College, St. Joseph, Mo., 1891; died suddenly at his home in Hmutsville, Wash., December 6, from heart disease, aged 68.

James Frost, M.D. University of California, San Francisco, 1877; of San Francisco; died at the home of his daughter in Sacramento, December 11, aged 74.

D. L. Whaley, M.D. Missouri Medical College, St. Louis, 1888; died at his home in Browning, Mo., December 10, from disease of the stomach, aged 60.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

THE VAN BYSTERVELD MEDICINE COMPANY

A Fraudulent Concern that Makes Fake Diagnoses by Means of Farcical Urinalyses

If it were not for the fact that self-drugging is always dangerous and that swindling people is always criminal, the study of the genus *Faker* would often be amusing. Some quacks are so naively dishonest, so frankly fraudulent, so transparently tricky that one can but stand aghast at the stupendous gullibility of the public which makes their trade a thriving one. Some medical frauds show care in conception and expertness in execution; they show, in fact, that skilled lawyers have been consulted to determine just how immoral a concern may be without becoming illegal. On the other hand there are some fakes of a medical nature which in their crudeness of operation excite disgust for their inventors and contempt for their victims.

The Van Bysterveld Medicine Co., Ltd., is a fraudulent concern with headquarters at Grand Rapids, Mich. It advertises in cheap magazines that it "will locate the cause of your aches and pains" free. All you need do is to send in a sample of your urine "stating age and sex" and they will do the rest. The "expert" who performs these marvels in diagnosis is A. W. Van Bysterveld, who, we are told, "has spent a lifetime in examining human urine."

A LETTER IS WRITTEN

A few inquiries having come in to THE JOURNAL concerning this company, it seemed worth while to make some investigation of the methods employed by the Van Bysterveld Medicine Company. Accordingly a letter from a supposititious patient was sent last March, asking for "full particulars about your cure for disease." In reply the company sent a mailing case containing a small 1-dram vial (for the urine), a leaflet and a letter. The leaflet had for its front cover a picture of "A. W. Van Bysterveld, Expert Inspector of Urine." Mr. Van B. seems, from his picture (Fig. 1) to be a man of mediocre intelligence who runs to naturally curly hair and an artificially curled mustache. The analytical methods employed by Mr. Van B. in examining urine are described as follows:

"This is done by a careful and secret process handed down generation after generation, and most carefully guarded by the old families of Europe. Its age alone entitles it to the confidence of all. It has stood the test of years upon years, giving at all time substantial proof of its undoubted efficacy."

The "expert examiner" is characterized thus:

"A. W. Van Bysterveld, the chief inspector, whose secret methods are not taught in schools, examines on an average of 25,000 bottles of urine a year. This alone stamps him as an authority and of exceptional qualifications. In conjunction with him are the

consulting physicians who prescribe the remedies. This combination assures you of a medicine that goes direct to the root of the evil."

SEVERAL LETTERS ARE RECEIVED

The letter that came in answer to the inquiry, referred to the mailing case and pamphlet that were being sent and then went on to say:

"Our method of examining the urine and thereby locating the CAUSE of trouble and prescribing medicine to remove the cause, has proved most successful in the past.

"Our fees, when urine is sent by mail, are \$1.25 per week, which includes a careful examination of the urine and medicine enough to last one week."

This letter was signed by the company but the initials of, presumably, the writer were given as "G. R. S." In a clipping which we have on file from a Grand Rapids (Mich.) paper we learn that George R. Stark, M.D., of Grand Rapids, is secretary of the Van Bysterveld Medicine Company. Whether Dr. Stark wrote the letter quoted above can only be surmised.

The company's letter was purposely unanswered for eight months, during which time a number of "follow-up" letters were received, each urging the prospective victim to send in the sample. The November "follow-up" letter—also bearing the initials G. R. S.—had the following statement:

"Perhaps you have overlooked the fact that we make the first examination free, that you have the benefit of the best expert advice upon your condition without any cost to yourself, and that should you decide to take a course of treatment the cost is only \$1.25 for one week or \$2.25 for two weeks."

SAMPLE ONE

On receipt of the November letter it was decided to test the analytical and diagnostic powers of the Van Bysterveld concern. For this purpose the Association's chemists made up a few ounces of the following mixture and

a vial full of it was sent to the company:

Hydrant water	about 1 dram
Pepsin	trace
Anilin dye	enough to color
Ammonia	trace

This solution was sent to the Van Bysterveld Medicine Company for its "expert inspector" to examine and a letter was written asking the company to diagnose the supposititious patient's case. Here is its diagnosis:

Diagnosis 1.—"Careful examination of the urine shows there is too much acid in the blood, which will cause a rheumatic condition, the back is weak, and you will have a tired nervous feeling most of the time."

SAMPLES TWO AND THREE

In the meantime two persons, one in Iowa and the other in Michigan, had been asked to correspond with the concern, so as to obtain the mailing cases and vials. These vials were filled in the Association laboratory but were mailed to the Van Bysterveld Company from the towns in which their respective recipients lived—and *they were filled with a part of the same mixture that was sent in the first vial!* Back came the following diagnoses:

Diagnosis 2.—"Careful examination of the urine shows the circulation of the blood to be very poor, the liver is not working



Fig. 1.—Photographic reproduction (reduced) of the outside cover and the first page of the folder sent out by the Van Bysterveld Medicine Company.

properly, which will cause gas in the stomach and bowels and will effect [sic] the heart, you have caught a little cold which has settled in the back and stomach and you will have a nervous feeling."

Diagnosis 3.—"Careful examination of the urine shows you are losing too much albumin in the urine, which will cause the back and kidneys to be weak, and there is a catarrhal condition of the stomach and bowels, and you will have a tired nervous feeling most of the time."

It seems, therefore, according to the "careful and secret process" of examining the urine that is so "carefully guarded by the old families of Europe," that a mixture of hydrant water, pepsin, anilin dye and a trace of ammonia indicates many pathologic states. Only one condition seems to be common to the three cases diagnosed and that is the "tired, nervous feeling." According to Van Bysterveld, whatever else may ail a person who is excreting pepsin, anilin dye and hydrant water through his kidneys, he will unquestionably be both "tired" and "nervous."

Seriously, though, the reason for tacking on the "tired, nervous feeling" to every "diagnosis" is perfectly evident. Every individual who is sick and every individual who *thinks* he is sick, to say nothing of a large number of people who belong to neither class, will have a "tired, nervous feeling," at least once in a while. It will be noticed that whenever the Van Bysterveld "diagnoses" deal with anything but the broadest generalities they describe such indefinite little aches and pains as any person suffering from the slightest indisposition would be likely to have. And naturally, it is the indisposed who, as a rule, write to these fakers.

SAMPLES FOUR AND FIVE

Still further to demonstrate the worthlessness of the alleged uranalysis two more specimens were sent from two different persons in Chicago.

These specimens also were prepared in the Association laboratory and had the following composition:

Hydrant water 95 per cent.
Glucose 5 per cent.

Nothing was added to give either color or odor to this last mixture! Now, as every physician knows, the presence of glucose in urine in such a large proportion as 5 per cent. is not only one of the easiest things to ascertain but any person excreting that amount of sugar would be in a desperate condition. Evidently, therefore, if any examination, worthy the name, of the last two specimens had been made the presence of sugar must have been evident. What did "expert inspector" Van Bysterveld have to say regarding these two cases?


Diagnosis 4.—"Careful examination of the urine shows there is poor circulation of the blood, which will cause a general weakness, the liver is not working properly, which will cause gas in the stomach and bowels, and you will have a weak, tired nervous feeling, also headache and backache spells." [See Plg. 2 for a photographic reproduction of this "diagnosis" letter.]

Diagnosis 5.—"Careful examination of the urine shows there is too much uric acid in the blood, which will cause a rheumatic condition, the back and kidneys are weak, and there is a catarrhal condition of the stomach and bowels."

Not a word about the presence of sugar! No mention of the danger that a person excreting 5 per cent. of glucose would be in!

CONCLUSION

The whole thing shows conclusively that the "examination" of the urine is a farce, the diagnosis is a fake and the taking of money from victims for the "treatment" of a purely imaginary disease is a fraud and a swindle. It shows, too, that those publications which accept the advertisements of this concern are, wittingly or unwittingly, participating in the profits of scoundrelism. We sincerely hope that the overworked fraud-order department of the United States postoffice will in the near future get around to this picturesque, but vicious humbug. We trust, also, that if the operators of the Van Bysterveld Medicine Company cannot be given board and lodging at either state or federal expense, they will at least be forced into a more reputable, even if less profitable line of human activity. The swindler who sells stock in bogus companies to presumably intelligent human beings is a gentleman compared with those scoundrels who lie to the sick, humbug the suffering and fraudulently take the money of the incapacitated.



Van Bysterveld Medicine Co., Ltd.

Inspectors and Examiners of
URINE
MANUFACTURERS OF
PROPRIETARY MEDICINES

Grand Rapids, Mich., Dec. 26th, 1910.

MAIN OFFICE, 17-19-21 SHELDON ST

Mrs. W. S. [redacted]
[redacted] E. 4th St., Chicago, Ill.

Dear Madam:--

Careful examination of the urine shows there is poor circulation of the blood which will cause a general weakness, the liver is not working properly which will cause gas in the stomach and bowels and you will have a weak, tired nervous feeling also headache and backache spells.

We can see no reason why a few weeks treatment should not show you very beneficial results and trust that you may see your way clear to favor our method with at least a trial, which we feel confident will convince you of its merits. You can receive treatment either by the week or month at \$1.25 per week or

Thanking you for favors and hoping to be of further service to you, we remain,

Yours respectfully,
VAN BYSTERVELD MEDICINE CO., LTD.

GRS-H.

Fig. 2.—Photographic reproduction (much reduced) of one of the "diagnosis" letters sent in reply to a supposititious patient who had submitted a mixture of hydrant water and glucose. The name of the person and the house number have purposely been obliterated.

PALATABLE LAXATIVE

Dr. L. F. Cummings, Hopkinton, Iowa, sends the following formula for a laxative devised by his daughter "to take the place of the similar high-priced preparations":

R	gm. or c.c.	
Phenolphthalein	gr. cxxviii	8.
Salicylic acid	gr. x	or .60
Baker's chocolate	3j	30.
Syrup of acacia	3j	ad 500.

Melt the chocolate by aid of heat, mix with the syrup of acacia, then add the salicylic acid and phenolphthalein and mix thoroughly. Dispense with "shake label." Dose: 1 to 3 teaspoonfuls. Each fluid dram contains about 1/15 grain (.004 gm.) salicylic acid and 1 grain (.06 gm.) phenolphthalein.

Correspondence

A Preliminary Report on the Mortality of Cancer in the United States, as Given by the Census of 1910

To the Editor:—Bulletin 8, Mortality Statistics, 1909, Bureau of the Census, just issued, gives valuable information regarding the mortality from cancer in the registration areas of the United States. This list includes eighteen states in registration areas and fifty-four cities in non-registration states with an estimated population in 1909 of 48,776,893, being 53 per cent. of the estimated population of the United States.

It is thus seen that the estimated population is a little larger than the real population, which, in round numbers, is 91,500,000, as shown by the latest census report. Taking the above official statement as a basis for comparison, it appears that the registration area in the United States includes one-half of the population. Therefore, by doubling the number of deaths indicated by these mortality statistics, the entire death totals would be approximately determined. In the report mentioned cancer ranks sixth in the mortality list.

On this basis, the mortality tables show (Bulletin 8, page 20) that the deaths in 1909 are in point of frequency in round numbers as follows:

1. Tuberculosis	163,000	4. Pneumonia (all kinds)	98,000
2. Heart disease	132,000	5. Nephritis	97,000
3. Diarrhea and enteritis	105,000	6. Cancer	75,000

The same statistics show the increase of cancer from 1908 to 1909 on the same basis of comparison to be 8,000 (Bull. 8, Table 8, pp. 128-129).

Comparing the deaths from cancer (7,034) for the same year (1909) in the State of New York as published in its monthly Bulletin January, 1910, with its population by the recent census of 9,000,000, the relative mortality in New York is found to be relatively a little greater than in the registration area of the United States. These statistics indicate that one person out of every 1,200 of our population dies every year from cancer. A recent writer, after compiling statistics of the mortality from cancer in European countries, and basing his comparison on population, asserts that there are 80,000 cases of cancer in the United States with a yearly mortality of 40,000. It is difficult to obtain from reliable statistics the average duration of cancer of all varieties. It is, however, believed to be a conservative estimate that the average duration of cancer is three years. On this basis it would appear that at this time there are about 225,000 cases of cancer in the United States. The fact remains, however, that according to the best analysis of statistics attainable, there is a yearly mortality from cancer in the United States of 75,000. In this connection it must be remembered, first, that cancer is not (usually if ever) in the lists of diseases which boards of health require to be reported. This being the case, not all cases of death from cancer are reported as such. Some individuals and families are averse to having the cause of death known and it is not accurately reported, the death being attributed in death certificates to some other cause.

In the second place, doubtless a very considerable number of cases of internal cancer and tumors in various parts of the body are never correctly diagnosticated, and are never included in mortuary tables as such. Thirdly, as the census was taken nearly nine months ago, the natural increase in population would tend to correct any overestimate of the mortality from cancer for 1910.

Until the work of the Bureau of the Census is completed, it will be impossible to know the exact population in registration areas, as compared with that in non-registration areas, and this basis must be known before the ratio of mortality of cancer can be established. Further analysis as related to race, sex and locality cannot be determined until the information in Bulletin 8 has been completed by the census bureau.

When this information is accessible, it is my purpose to make a supplemental report, which will give more accurate data concerning the presence, increase and mortality of cancer in the United States. Enough, however, is known to fix approximately the mortality and demonstrate the rapid increase of cancer.

WALTER B. CHASE, M.D., Brooklyn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CLASSIFICATION OF TUBERCULOSIS

To the Editor:—Please give me any information possible in regard to the classification of the various stages of tuberculosis, especially in regard to the Turban-Gerhardt classification.

W. B. LAFFER, Cleveland.

ANSWER.—Turban's classification, put forward in 1899, forms the basis of the classification in use to-day. In Europe it has been modified by the general adoption in addition of part of Gerhardt's scheme. In this country the National Association for the Study and Prevention of Tuberculosis has modified Turban's scheme by adding certain clinical data. Trudeau has a scheme of his own. The three classifications are given below in parallel columns as given in "Tuberculosis," edited by A. C. Klebs, 1909, p. 362.

TURBAN-GERHARDT	NATIONAL ASSOCIATION	TRUDEAU
I	I. INCIPIENT (FAVORABLE)	I. INCIPIENT
Disease of slight severity, limited to small areas of one lobe, that, for instance, in case of affection of both apices, may not extend beyond the spine of the scapula and the clavicles; in case of affection of one apex, frontal, beyond the second rib.	Slight initial lesion in the form of infiltration, limited to the apex or a small part of one lobe. No tuberculous complications, slight or no constitutional symptoms (particularly including gastritis or intestinal disturbances or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially if at rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.	Cases in which both the physical and rational symptoms point to but slight local and constitutional involvement.
II	II. MODERATELY ADVANCED	II. ADVANCED
Disease of slight severity, more extensive than I, but affecting at most the volume of one lobe, or severe disease extending at most to the volume of one-half lobe.	No marked impairment of function, either local or constitutional. Localized consolidation, moderate in extent, with little or no evidence of destruction of tissue. Or disseminated fibroid deposits. No serious tuberculous complications.	Cases in which the localized process is either extensive or in an advanced stage, or where, with a comparatively slight amount of pulmonary involvement, the rational signs point to grave constitutional impairment or to some complication.
III	III. FAR ADVANCED	III. FAR ADVANCED
All cases extending beyond II, and all such with considerable cavities.	Marked impairment of function, local and constitutional. Localized consolidation, intense or disseminated areas of softening, or serious tuberculous complications.	Cases in which both the rational and physical signs warrant the term.

GATE CITY MEDICAL COLLEGE CONDEMNED

To the Editor:—1. Is the Gate City Medical College a reputable medical school?

2. Are graduates of this school allowed to become members of the American Medical Association?

J. A. BURNETT, M.D., Calvin, Okla.

ANSWER.—1. This college, formerly located in Texarkana, Texas, but now located in Dallas, was mercilessly exposed by the *Journal of the Arkansas Medical Society*, August, 1907. A circular sent out in that year by that college offered "a course in home reading (mail course) in medicine for \$25," on finishing which, a "special diploma" would be granted. The statement was also made that "it takes from four to six months to finish the mail course." There had long been rumors that the college was little better than a diploma mill, but when summoned to appear before the Arkansas Medical Society, Dr. J. W. Decker, the dean, denied the allegations and invited an inspection. The inspection was made, and a part of the report is as follows: "A medical college organized and launched in the midst of an era of the greatest medical energy and progress the world has ever known, (a) that has practically no educational requirement for admission; (b) that is without an anatomic laboratory; (c) that does not require its students to dissect; (d) that makes false representations in its catalogues, thereby attracting many students; (e) that is without sufficient hospital advantages, thus depriving students of the best means of studying diseases clinically; (f) that gives lectures by mail for which credit is given;

(g) that is conducted dually, brazenly, irregularly and unprofessionally, in a Dr.-Jekyll-and-Mr. Hyde manner, should meet its just reward at the hands of the courts. The 'stigmata' of fraud were so much in evidence as to warrant the conviction that not only is Dr. Decker guilty of unprofessional conduct meriting the unqualified condemnation of the profession, but the charter under which he is authorized to conduct his school should be summarily revoked by the Arkansas and Texas authorities, thereby putting an end to a brief but disgraceful chapter in the history of an Arkansas-Texas medical college." Graduates of this college have not been admitted to the examinations of the Texas State Board of Medical Examiners since November, 1907.

2. The school of graduation is not a direct factor in determining eligibility to membership in the American Medical Association. The By-Laws provide that "any physician reported as a member in good standing of a constituent association by the secretary of that association" shall be eligible to membership. In practically all of the states, all members in good standing of the component societies are, *ipso facto*, members of the state association. Consequently all members in good standing of component county societies are eligible to membership in the American Medical Association. A county society may adopt such restrictive regulations regarding membership as its members see fit. Such restrictions, however, exist in very few county societies, admission being on the basis of personal merit.

SODIUM CACODYLATE

To the Editor:—In THE JOURNAL (Nov. 12, 1910, p. 1750) "P. L. M." inquires concerning sodium cacodylate. I note that in your answer as to literature on the subject you make no mention of an article on that subject by Prof. Holmes C. Jackson and myself which appeared in THE JOURNAL, June 22, 1907. Inasmuch as this article is the only one thus far published that gives an authentic description of the physiologic action of the drug, based on pharmacologic investigation and clinical observations, I am surprised that it escaped your notice.

As the question of organic arsenic preparations is now attracting so much attention, I would esteem it as a favor if you would publish a request that anyone who desires information on sodium cacodylate or anyone who has used the drug, successfully or not, communicate with me.

SPENCER L. DAWES, Albany, N. Y.

The Public Service

Medical Department, U. S. Army

Changes during the week ended Dec. 31, 1910.

Patterson, Robert U., major, ordered to Boston, about Jan. 26, 1911, to read a paper before the School of Medical Officers, Massachusetts Volunteer Militia.

Casper, Joseph, lieutenant, ordered to Fort Slocum, N. Y., for temporary duty until Jan. 20, 1911.

Girard, Joseph B., colonel, retired from active service.

Sweazey, Verge F., captain, retired from active service with rank of major.

Whitmore, Eugene R., major, leave of absence extended two months.

Ashford, B. K., major, leave of absence extended twenty days.

Collins, C. C., major, leave of absence extended ten days.

Haverkamp, C. W., lieutenant, left Fort D. A. Russell, Wyo., on fifteen days' leave of absence.

Carr, William B., lieutenant, reported for temporary duty at Fort Myer. Left Fort Monroe, Va., on Dec. 26, 1910.

Smith, A. M., major, in addition to his other duties, will take charge of the office of chief surgeon, Department of Texas.

Wolveu, F. R., dental surgeon, reported for temporary duty at Fort Ward, Wash.

Mason, George L., dental surgeon, reported for temporary duty at Fort Missoula, Mont.

Challen, Charles W., Medical Reserve Corps, reported for temporary duty at Fort Duchesne, Utah.

Medical Corps, U. S. Navy

Changes during the two weeks ended Dec. 31, 1910.

Field, J. G., surgeon, ordered home to await orders.

Taylor, J. L., P. A. surgeon, detached from the naval hospital, Philadelphia, and ordered to the *Chester*.

McLean, A. D., P. A. surgeon, detached from the *Chester* and ordered home to await orders.

Muison, F. M., P. A. surgeon, detached from the *Buffalo* and ordered to the *Independence*, temporarily.

Backus, J. W., P. A. surgeon, detached from the recruiting station, Detroit, and ordered to the *Pennsylvania*.

White, E. C., P. A. surgeon, detached from the *Vicksburg* and ordered to the *Buffalo*.

Robbins, I. W., asst.-surg., detached from the *Pennsylvania* and ordered to the *Vicksburg*.

Field, J. G., medical inspector, commissioned medical inspector from Oct. 7, 1910.

McDowell, R. W., asst.-surg., ordered to the Naval Academy on the expiration of sick leave.

DeValin, C. M., surgeon, detached from the marine recruiting station, Philadelphia, and ordered to the navy recruiting station, Detroit.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE SECRET COMMISSION EVIL

Report of the Committee Appointed by the Erie County (N. Y.) Medical Society to Investigate the Division of Fees and Its Causes and Remedies

At a meeting of the Erie County Medical Society, held Feb. 21, 1910, Dr. M. D. Mann presented a paper entitled "Dividing Professional Fees." The address was fully discussed and a resolution was unanimously adopted directing the president to appoint a committee to investigate the entire subject, including the causes and possible remedies. In obedience to such instructions a committee was appointed and respectfully reports as follows:

Frequent meetings have been held and the matter assigned us has received careful investigation and consideration. With the object of securing cooperation and information from the profession, a circular letter containing twelve questions was sent to each member of the society and a reply requested. The response revealed disappointing apathy and lack of interest in problems which vitally affect the welfare, standing and ideals of the medical profession. About 540 circulars were sent and thirty-one replies received. Attention is simply directed to this demonstration of indifference; no comment is ventured. The result of the inquiry revealed a practically unanimous agreement that the chief causes of commercialism and its attendant abuses were overcrowding of the profession and too low a standard of education. Your committee has sought information wherever it could be obtained and has tried to arrive at definite conclusions after mature deliberation.

DR. MANN'S CHARGES SUSTAINED

It has been found that Dr. Mann's statements and charges are true—that the practice of dividing fees or giving of commissions by some surgeons to physicians has existed in this city for several years, and that the exposure and criticism of the abuse was justified. We thoroughly approve acquainting the profession with the facts concerning this vicious and dangerous innovation, and favor warning the public of the unhappy results which will follow its continuance or increased prevalence.

SECRET METHODS EMPLOYED

The division of fees has been accomplished by numerous methods. All of them are more or less adroit, deceitful and dishonest. The principal effort has been directed to provide secrecy. In the course of time some operators have become bolder than others and have gradually converted the practice of surgery into a traffic of operating on commission. No one publicly justifies the commercial bargain. If it is defended privately, the excuse or argument is cynical, shifty, selfish or sophistical. After examination from every side there is no honest course except emphatic and unequivocal condemnation of this rather new species of hidden graft.

No matter how cleverly the division of a fee is accomplished, it is done almost invariably without the knowledge of the patient. The person who pays for an operation does not know that part of the amount, which has varied from 25 to 50 per cent., occasionally goes to the physician who recommended the operator. The physician and the surgeon are supposed to render their individual bills, and the afflicted person is entirely ignorant of the "gentlemen's agreement" or "community of interest" which has been introduced from the realms of high finance and legal honesty. The real purpose of the deal is to encourage the physician to send his patients where he can obtain a share of the money paid for relief or attempted relief. The surgeon may be highly competent or he may not be, and the physician may be influenced by financial encouragement. At all events, the performance must pay because it has flourished and been profitable at times when other methods would probably have failed. At times, the demands of the physicians have been quite high and some of the prosperous merchants in surgery may begin to wonder if they have not created a Frankenstein monster.

PERNICIOUS RESULTS OF PRACTICE

The practice may lead to unnecessary operating and junk surgery through increasing zeal to be busy and to establish a false measure of success by the amount of income derived from business instinct and sagacity. The untrained and inex-

perienced cutter who has learned that there is money in operating, which is lost by the physician, is encouraged to obtain work which should go to the experienced, skilful surgeon who clings to the traditions and ideals of the profession, and will not cringe, stoop or barter to obtain his earned and rightful privilege of employment. The fee may be increased or stretched by agreement to provide for distribution of the spoils, and altogether there is something about the whole wretched proceeding which smells of the rebater, the promoter and the greed for disguised plunder.

MATTER SHOULD BE AIRED

Some members of the profession keenly regret and reprobate any public exposure and discussion of the subject, and fear that the public will become suspicious of all the members of the profession. The answer is simple: it is time that the people knew of the practice and be given an opportunity to penetrate some of the mysteries surrounding the sick-bed. In time the intelligently suspicious may distinguish between types of doctors and exhibit a tendency to investigate conditions quite puzzling to-day.

There is at least one profession that should be clean and have the confidence and trust of the public. Whatever may be its shortcomings in ability to help or save, the effort and purpose must be free from the taint of sordid commercial deals dependent on human suffering and woe. There is very often no more complete picture of helplessness than that of the sick who yearn for relief and know not where to seek it. If abuses exist, the profession must decide whether it will abolish them or allow them to prevail until the public is compelled to undertake the task. Your committee believes that the medical profession should perform the disagreeable work, and that an element is not afraid to expose or denounce iniquities which tend to degrade those who decently follow a noble calling.

LOCAL SITUATION

Honesty and a sense of duty compel us to call attention to the local aspects of this question and confess that an evil has existed. Surgeons can apply a prompt remedy, if they will, by simply stopping the practice. The committee has learned with pleasure and gratification that practically all of the operators in this county have signed an agreement that they will not indulge in any division of fees, and that any violator of the agreement will submit to a penalty which may be fixed by the Erie County Medical Society. It remains for the society to determine the value of this agreement and what steps shall be taken to ensure enforcement. The appointment of a committee to act as a court of honor, and consider complaints, examine evidence and devise methods of punishment—when acts in violation of certain standards of professional dignity are perpetrated—is certainly worthy of careful consideration.

We are sadly deficient in safeguards relating to professional conduct unless flagrant crime supplies a chance for decisive and wholesome action. The legal profession has more efficient control and well-defined direct methods of procedure when they are employed. At present the purpose is to be suggestive in the hope of arriving at some consideration of this theme by the society or its proper committee. If no other penalty can be found at this time, publicity in some form deserves attention as a possible corrective instrument. Something should be done to discriminate between the man whose influence is thoroughly damaging to the profession, and the one who helps to make it reputable and worthy of the highest admiration and confidence.

OVERCROWDED PROFESSION PRINCIPAL CAUSE

Any study of the causes and possible remedies of forms of commercialism, and especially of the division of fees, must be considered in a broad way. The evils are not local but general, wide-spread and probably national in scope. Other cities and localities throughout the country report that the same conditions are prevalent, and have developed in recent years. It would be misleading and unjust to search for causes or seek for explanations in this region, when we fully realize that we are dealing with an epidemic and not an endemic variety of infection. In classifying causes, the chief factor seems to be the unfortunate and unnecessary overcrowding of the medical profession. Those who have studied this phase of the problem arrive at the conclusion that about one-third or, at most, one-half of the present number of physicians and surgeons in the populous districts of this country could fulfil all legitimate demands for human relief and secure a competent living. The average income is far below the amount required to permit of a mode of life consistent with the modern practice of med-

icine. A large proportion of the profession cannot obtain sufficient practice, experience or skill to become proficient. If the number of doctors in this country were diminished by two-thirds or at least one-half, that proportion to the population would ensure adequate work and emolument, and correspond more closely to conditions in other nations.

The lamentable overcrowding has a most deleterious effect on the profession and the type of men who join its ranks. But the most baleful results will certainly be more keenly felt and appreciated by the public as they are discovered and better understood. At present this nation is in a semibarbarous state so far as provisions for control of national health is concerned. The full meaning of the conservation of natural resources has not yet been recognized as including human beings. In considering overcrowding no attempt has been made to include the army of new "pathies," faddists and variegated assortments of healers, pseudoscientists, or the old contingent of perennial quacks and nostrum-venders. Perhaps, in the advance of preventive medicine and medical education, we are wasting too much sympathy on the class "who never considered it necessary to add the incident of learning to the accident of brains." It has been asserted that overcrowding has long existed, and that evidences of many tricks to secure advancement are comparatively recent. There is no time for judicious discussion of the question whether there has been a decline in the moral standards of the profession, and how much any change is due to imitation and the influence of business crookedness and predatory customs which abound in a favorable environment. The important thing is to call attention to the fact that conditions have changed which make the effects of overcrowding more acute, the scramble for employment and a living more intense, and the temptation to resort to shrewd tactics more common and glaring.

PROGRESS OF PREVENTIVE MEDICINE

During the last twenty years, preventive medicine has made gigantic strides. The incidence of illness, particularly of childhood, has undergone a vast diminution, and the general death-rate has practically been cut in half. The marvelous advance in surgery has removed a large group of patients from the field of medicine, and new discoveries have shortened the period of illness or changed its course. The tardy awakening to the importance of public health will add more and more force to the crusade against disease.

CONTRACT PRACTICE AND OTHER EVILS

Vicious, dangerous and cheap modes of practice have developed to a surprising extent in latter days. Medical and surgical relief under contract, and stultifying agreements with lodges, societies, benefit associations, etc., and underpaid services to life-insurance companies, have demoralized practice among young men and robbed others of just remuneration. These abuses are largely indefensible, being delusive to the patient and public, as the results are mostly ineffective, the service superficial and careless, and often of no genuine value. It is only just to young physicians and the public that this increasing abuse should be investigated and fully considered at a future time. There is much harm and humbug in the practice, and the physician should no longer be a tool for crude, cheap work. Positions held by medical men almost invariably yield totally inadequate compensation, and any protest is unavailing because the supply is apparently unlimited. The young practitioner seeks opportunity for experience and a chance to escape idleness while waiting for employment in a profession where there is little or no room. There are two classes—one seeking the sick to make a living, and another expecting a reference of a patient or a consultation.

Practice legitimately belonging to competent physicians has been given over to faddists with a squint or kink, largely through the fault of narrow dogmatic members of the medical profession who could not or would not realize that the mentality of a patient required thought and attention, and that exercise of the body or its components was a physiologic aid or necessity in treatment.

Hospitals and other institutions have been monopolized or exploited by a few, and some of the hospitals supported by philanthropy are simply hotbeds for fee-splitting and commission jobbery. The industry is tolerated and winked at because the new method fills the private rooms. The amount of revenue the candidate can supply has occasionally become more essential than the amount of ability and character he can offer, when appointments are considered by trustees, or dictated by the staff.

GENERAL PRACTITIONER UNDERPAID

The division of a fee is only one abuse. There are many others harder to perceive and reach, and some of them have given an impetus to this method of trading and may perpetuate it. Undoubtedly this inducement of a commission has been extended in a pernicious effort to compete and grasp a share of operative work. Again it has been used as furtive evidence of sympathy toward the lesser-paid physician. This leads to a consideration of one of the principal contributing factors related to superabundance of doctors and their fees. The cost of living has decidedly increased, and the mode of life has undergone a transformation too little appreciated. The fee and the income have not changed in proportion, if at all. Extravagance is the fashion and the necessities of a progressive physician accumulate each year. He belongs to a class which is struggling along, surrounded by combinations, and the waves of prosperity lose their force before reaching him.

The surgeon and the specialist have educated the public to place a higher value on their services, and there is force in the contention as a rule. Special skill, experience, long training, responsibility and technic are required, and the qualified surgeon is rarely overpaid. Whether the surgeon who gives away half his fee regards himself as overpaid, is another question. The increase of operators and the lure of the knife, because it loosens the purse-strings, will soon equalize and distribute opportunity, and lower the rate of compensation. The surgeon has enjoyed halcyon days and deserved many of them, but he will have to guard and discipline the recruits to his guild, or the public will revolt.

PHYSICIANS MUST DEMAND PROPER REMUNERATION

The physician is actually and proportionately underpaid, and it is almost entirely his own fault. If overcrowding prevents the demand for proper remuneration because others will act for less, let him place the responsibility for the overproduction of doctors where it belongs and register his protest, not alone for selfish reasons, but vastly more for the benefit of the whole profession and the community. The competition that affects livelihood is keenest and most demoralizing among the mass and not among the few. There is no way by which the public can distinguish between the physician who has spent time and labor to become proficient and the one who has not. We have but one degree, and it may mean much or little. Nor is there any good reason why the fee of the physician should be rigidly fixed with no reference to the value of service. He should charge for the thoroughness, efficiency, skill, and time employed in his study of an individual case. Many times his diagnosis, advice and treatment are more valuable than surgical interference. The proper examination of a patient has become a problem involving time, wide knowledge, and chemical and microscopic analysis and search, requiring more and more special training and skill. The time has come for the physician to assert his position and claim what he deserves. He should receive his reward openly and not secretly, and demand due recompense of the patient and not of the surgeon. Let him stand on his own feet and not beg or barter with the surgeon for a hidden share which he has not the courage to ask for. Let him seek assistance, when he needs it, with motives as unmixt as if he were the patient, and receive it with a clean hand from a clean hand, and preserve a decent opinion of himself and his possibly more fortunate confrère.

SUPERABUNDANCE OF MEDICAL COLLEGES

The explanation of the overcrowding in the medical profession will be found in riveting attention on the character of medical education in this country; and recently an opportunity has been afforded to reflect on this interesting subject by the publication of Carnegie Foundation Bulletin No. 4. It should be read by every member of this society. This report may be considered intolerant and radical, but a great service has been performed; and the collection of facts based on investigation will have a tremendous educational value and influence. Already its effect has become manifest, and the supplemental report will probably furnish a guide to action by comparison with European standards. It seems to be true that there are as many medical colleges in this country and Canada as in all the rest of the world. Canada still protects its population from the flood of graduates poured into this country. It also seems to be true that about one-third of the medical colleges in this country could be lifted to a higher modern standard and supply all the doctors needed for an indefinite time and growth of population.

The facility with which medical colleges could be established in this country has long been a disgrace. There probably was a time when the proprietary medical school, with all its schemes for profits among a few, was tolerable or even seemed to be necessary. That time has passed and the school of the proprietary type and its self-created professors, will be eliminated. The medical school will ultimately be obliged to cease depending on students' fees for support, and liberal funds will be required to furnish the tuition which should be supplied to-day. The connection with a university will be close, true and actual—not spurious or non-existent, and trustees and councils will probably cease to be rubber stamps or respectable, irresponsible nonentities, well described by Dickens.

NEW STANDARD OF MEDICAL EDUCATION IMPERATIVE

Many so-called medical colleges are still proprietary in spite of evasion and strenuous efforts to escape from that category. There are direct and indirect profits, and scrutiny will go deeper and deeper to discover the true purpose and objects of these prolific institutions of learning. Is it not very strange that we have such a prodigal supply of medical colleges and that overproduction of the graduates continues unabated, while the professors must know that the oversupply is unnecessary and that the fresh product cannot be assimilated? Is it not perfectly plain that doctors are responsible for the superabundance of doctors and the attendant evils which result from the wholly unnecessary excess? The most wholesome, natural remedy would follow an awakening of the whole profession to its interest and duty in dealing with a national disgrace. The united profession should decide on the necessity for medical colleges, what status they should have and maintain, what shall constitute a medical education, and what shall be required of a licentiate to practice on humanity. There should be control of the appointments of professors, and their duties and obligations to those really concerned should be defined. These matters should not be left to a few self-perpetuating and self-constituted faculties who have enjoyed too much power and freedom from restraint and domination. National and state supervision and radical reorganization of medical teaching and requirements is imperative and inevitable.

There is no reason at present why the standard of qualification cannot be raised more rapidly and the comparison with other countries made less apparent or glaring. The flood of graduates can be checked with safety. It is sophistical to claim that a better class will gradually replace those who are striving to-day. That is the old cry heard with every advance. The real demand is for increased intelligent and stringent legislation and some guarantee that a state license assures true proficiency.

PRESENT STATE EXAMINATION NOT PROPER TEST

A beginning has been made in this state by extending the power of the state regents and providing for a state board of medical examiners. Objections and obstacles had to be overcome before this step was taken, and some good has been accomplished; but an examination for fitness to practice medicine and surgery by present methods must be obviously incomplete and unsatisfactory to anyone who has given the matter any careful thought.

The regents appoint the examiners. If any plan for selection because of special training or attainments is employed, some of the results are truly surprising. A recent excellent appointment deserves warm commendation. The schools, dogmas, creeds and sects are represented, and possibly the recommendation of candidates may emanate from medical societies during political sessions. The board of examiners is presumed to safeguard the public and to act as a clearing-house and check on the medical colleges. When the graduate satisfies the examiners and the law, he is licensed to practice on anybody in any way he chooses.

The candidate is subjected to a written examination and is supposed by many to answer correctly 75 per cent. of the questions. As a matter of fact, he is given fifteen questions, allowed to select ten, and must gain a marking of 75 on them. Consequently, he is really obliged to answer correctly 50 per cent. in accordance with the opinion of the examiners. The questions and answers are published frequently, and it seems as though the students who make a collection of them and cram, or are quizzed assiduously, might find it advantageous. No time need be consumed in explaining to an intelligent physician how crude, farcical and unreliable such a test for admission into one of the highest professions must be of necessity. High percentages obtained in this way are cited

with pride by the medical colleges as proof of superior teaching and preparation. The professors and the examiners are both anxious to advance the standards, but new obstacles and conservative policies seem to block the way.

NEW STANDARDS MUST REPLACE OLD

Your committee has learned with gratitude that the time is now near when the candidates will be compelled to reach a percentage of 75 on answers to the full fifteen questions. Thus progress is gradually assured. The time seems to be ripe to insist that the state examinations should in reality prove a candidate's fitness to practice medicine and surgery by demonstration of his knowledge at the bedside and in the laboratory, as well as by written evidence. Before entering such an examination, the applicant should be required to show that he has had actual experience and training in branches of medicine and surgery in a general hospital. It seems eminently fair to request that the licentiate to practice on humanity in this state should be as well qualified as the one the government carefully provides for the sailor and soldier. If such competence could be required, there are a great many problems which would be effectually settled. Of course, the machinery would have to be changed. More money and a reorganization would become necessary, but the real purpose in creating a state board of examiners would be achieved, and their function as sentinels fulfilled. The requirements in preliminary education should certainly be increased in this state.

Legislation should be secured, if necessary, to assist progressive action on the part of the regents, and to transform the personnel, organization and duties of the board of examiners in accordance with present conditions and the need of remedial measures. This society may as well lead in this direction and make its influence felt in the state medical society. It will take time and wisdom to sift the facts and arrive at safe conclusions. There are many interests involved, and while radical action is needed, it should be sane and practical. If there is need of reformation and a sincere desire for improvement, relief seems to lie along that path. If the manifold taints of commercialism are to be discouraged and decreased, and the tone of the profession is to be raised, paramount causes must be attacked. There may be full indulgence in garrulity and strong disapproval of wrongs expressed, but there are only two methods of gaining a greater height. The one who ought to climb must be helped, or lift himself. It is about time to drive home the truth that "a little integrity is better than any career."

PUBLICITY RECOMMENDED

Your committee unanimously recommends that this report be published in medical journals and copies be given to the daily press to be fully presented to the public if possible. Publicity is the safest, sanest course to follow. The confidence of the people must be maintained without equivocation or deception. If the revelation or confession hurts, let the blame rest where it belongs. The mass of the profession is sound, clean and unafraid to condemn ignoble motives and improper conduct which have stealthily stolen into its ranks. Regret is blended with the hope that frank disapproval will make any other action unnecessary.

FUNDAMENTAL CAUSES EXPLAINED

The causes and effects seem easily discernible if they are fearlessly examined and the microscope is occasionally employed instead of a telescope. The historic course of events follows a natural sequence, and it is not surprising that an avenging Nemesis is crying for retribution. When these events are recited in proper order, we can perceive a vast new nation with a rapidly increasing scattered population and no provision for the inception or control of medical education as it existed in older civilized countries. Medical colleges were of necessity created by small practically self-appointed groups, with little or no restraint. Later they were too often established and employed for personal aggrandizement, questionable advantage, and direct and indirect profits. The false system, inculcating special privileges, spread without proper jurisdiction or supervision. In the course of time the outcome was a multitude of proprietary medical schools and gradually a vast superabundance of diploma factories and an oversupply of the product. Substantial benevolent returns from the alumni in proportion to the annual crop were most enticing. Then came control and domination of institutions and increase of lieutenants. Nothing paid so well as professorships and titles, when used to promote the reference of cases and consultations. Frequently the aim in supply was quantity, not quality. Ultimately lamentable overcrowding and

a struggle for existence became only too evident. Ambitious doctors endeavored to advance and seize a share of reputation and compensation. Competition was difficult and became keener and fiercer. Many means were suggested to check the flood of graduates and a state examination was introduced. The hoped-for benefit has not been obtained. The number of unnecessary colleges and professors, the yearly flux of deluded graduates, the overcrowding and the baneful competition, continued to exist. Then came the increased cost of living and the added expense of modern practice with no increase and often a decrease in income. This condition is tremendously influenced by industrial and financial revolutions, accompanied by a toleration for moral obliquity and censurable methods in business enterprise. At last a vicious, misdirected mode of competition is found which proves financially successful. It is devoted largely to a pitiful scramble for the dollar, and is still limited to a small part of the profession. One mode of gaining ascendancy and its tribute was followed by another much less tolerable and more reprehensible from a moral standpoint. It is one symptom of reckless revolt, and an adaptation of the policy "after us the deluge." The great mass of the profession has a right to protest and complain of the character and amount of competition to which they have long submitted, but the fee-splitter and the schemer by any method only add another more dangerous incubus. It is the outcropping of the worst, polluted with a desire to substitute one abuse for another of which many have become thoroughly tired and exasperated.

The blame for the degradation and turmoil in the profession should be traced to its true origin, and the labor of reformation belongs largely to those who are responsible for the conduct and output of institutions ostensibly intended for ethical and medical education, and the laxity of government control, which is the core of the whole problem. Let there be no privilege not beneficial to the whole profession and a fair field on level ground. The cleansing process should extend beyond any one evil now exposed to the light. Its associates and their ancestors need ventilation and disinfection also.

REMEDIES SUGGESTED

As the work of the committee progressed, many cynical remarks have been heard to the effect that any exposure and consequent action will prove ephemeral and futile. It is claimed that this society has no legal power to check or abolish such an evil as has been described. But there are methods which can be used in a drastic manner, if necessary. We ask that this report shall not fall cold and be deposited quietly in the archives of this society. What the Erie County Medical Society begins should be thoroughly finished. A form of bribery must be starved by ostracism and denunciation, or strangled by some form of punishment. Let the matter be kept before the society at future meetings. Investigation should continue. Activity and determined persistence will encourage other societies to follow, and the benefit will be widespread. Now that the facts are known and the dangers appreciated, reform or supine toleration are the only courses left open.

RECOMMENDATIONS OF COMMITTEE

To ensure and possibly to guide effective remedial efforts, the following recommendations are submitted and approval requested:

1. Publication of this report in the medical journals and the daily press is recommended.
2. Reference of that portion relating to complaint, investigation and devising some form of punishment, to the committee on professional relations, is recommended, provision being thus made for continued watchfulness and further consideration.
3. It is recommended that the secretary transmit a communication to the state board of regents, urging the necessity of a higher preliminary educational requirement, and definite changes in the method and scene of the examination for a license to practice in this state; and that this matter be referred to a proper standing or special committee to arouse interest, stimulate inquiry and promote necessary progressive action leading to higher medical education.
4. It is also recommended that a special committee be appointed to report at an early date on the extent, character, effects of professional services under contract or by agreement with companies, corporations, fraternal societies and life-insurance companies; this report to include if possible practical remedies which may be applied to diminish this form of employment or place it on a different basis.

Your committee was assigned a difficult, unpleasant and undesired task, and has discharged a duty with honest intent, free from any malice, prejudice or unkind feeling.

Respectfully submitted.

JOHN H. PRYOR, M.D., Chairman.
M. D. MANN, M.D.
BERNARD BARTOW, M.D.
F. PARK LEWIS, M.D.
WILLIAM GAERTNER, M.D.
IRVING P. LYON, M.D.
E. A. BOWERMAN, M.D.
T. J. WALSH, M.D.
GROVER WENDE, M.D., *ex officio*.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

General subject for the month: Anesthesia and Surgical Shock

Sixth Month—First Weekly Meeting

ANESTHESIA—HISTORICAL

Crawford W. Long, W. T. G. Morton, Charles Jackson, Horace Wells, Simpson.

ANESTHETICS

CHLOROFORM: Chemical and physical properties. Physiologic effects: Locally. By inhalation; stimulant, narcotic, anesthetic, paralytic stages. Effects on central nervous system, respiration, circulation, liver and kidney, metabolism, pupils.

ETHER: Chemical and physical properties. Physiologic effects; differs from chloroform.

NITROUS OXID GAS: Chemical and physical properties. Physiologic effects. Use in combination with air and oxygen. Teter's method.

ETHYL CHLORID: Mixtures of ethyl chlorid.

ETHYL BROMID.

REFERENCE BOOKS FOR THE SIXTH MONTH

Buxton: Anesthetics.
Luke: Guide to Anesthetics.
Patton: Anesthetics.
Turnbull: Artificial Anesthesia.
Crile: Surgical Shock.
Crile: Blood-pressure in Surgery.
Bryant and Buck: American Practice of Surgery, 1.
Keen: Surgery, i.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 10. Chairman, Dr. W. H. Sanders, Montgomery.

DISTRICT OF COLUMBIA: The District Bldg., Washington, January 10. Sec., Dr. George C. Ober, 125 B St., S.-E.

ILLINOIS: Coliseum Annex, Chicago, January 11-13. Sec., Dr. J. A. Egan, Springfield.

INDIANA: 120 State House, Indianapolis, January 10-12. Sec., Dr. W. T. Gott.

NEW MEXICO: Santa Fé, January 9-10. Sec., Dr. J. A. Massie.

NEW YORK: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr. Charles F. Whetlock, Albany.

SOUTH DAKOTA: Aberdeen, January 11-12. Sec., Dr. F. W. Freyberg, Mitchell.

VERMONT: Montpelier, January 10-12. Sec., Dr. W. Scott Nay, Underhill.

WISCONSIN: Milwaukee, January 10-12. Sec., Dr. John M. Beffel, 3200 Clybourn St.

Nebraska May and August Reports

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examinations held at Lincoln, May 23-24 and August 10-11, 1910. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75.

At the examination held May 23-24, 1910, the total number of candidates examined was 59, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical College of the Pacific.....	(1902)		82.7
Hering Medical College.....	(1910)		87.2
Washington University, St. Louis.....	(1910)		83.9
Lincoln Medical College (1910)	77.5, 82.1, 83, 83.1, 83.4, 84.7, 85.1, 86.5, 87.9.		
University of Nebraska, College of Medicine (1910)	79.7, 80.9, 82.6, 84.4, 85, 85.5, 86.9, 87.2, 87.7, 88, 88.9, 91.		
John A. Creighton Medical College (1910)	75, 75, 75.6, 75.7, 76.6, 78, 78.1, 78.2, 78.6, 78.6, 78.9, 79.7, 80.2, 81.1, 81.6, 81.7, 82.2, 82.2, 82.5, 82.6, 83, 83.1, 83.2, 83.4, 83.4, 84.5, 84.6, 84.9, 85.2, 85.7, 86, 86.9, 87.7, 88.6, 88.7.		

At the examination held Aug. 10-11, 1910, the total number of candidates examined was ten, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Phys. and Surg., Chicago..	(1897)	80.7	75.4
Bennett Medical College.....	(1910)		83.5
Ensworth Medical College.....	(1910)	77.4	77.5
University Medical College, Kansas City.....	(1910)		83.4
Barnes Medical College.....	(1909)		75.4
Lincoln Medical College.....	(1910)		82.5
John A. Creighton Medical College.....	(1910)		80.5
University of Nebraska, College of Medicine.....	(1910)		82.6

Twelve candidates are reported as having been licensed through reciprocity. The following colleges were represented:

College.	Year Grad.	Reciprocity with
University of Colorado.....	(1907)	Colorado
College of Phys. and Surg., Chicago.....	(1900) (1909)	Iowa
Rush Medical College.....	(1891)	Michigan
Drake University.....	(1909)	Iowa
Kentucky School of Medicine.....	(1907)	Kentucky
Tulane University of Louisiana.....	(1903)	Tennessee
St. Louis University.....	(1906)	Illinois
Washington University, St. Louis.....	(1903)	Missouri
John A. Creighton Medical College.....	(1904)	Iowa
Eclectic Medical Institute, Cincinnati.....	(1897)	Iowa
Medical College of Ohio.....	(1889)	Oklahoma

Arkansas November Report

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, November 8-9, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 24, of whom 8 passed and 16 failed. Nineteen candidates were licensed through reciprocity, including one osteopath. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Louisville and Hospital Medical College.....	(1908)		86.7
Tulane University of Louisiana.....	(1904)		77.5
Harvard Medical School.....	(1909)		86
University of Michigan, Dept. of Med. and Surg....	(1901)		87.3
Jefferson Medical College.....	(1902) 81.4; (1909)		85.5, 89.7
Queen's University, Kingston, Ontario.....	(1909)		87.4

College	Year Grad.	Per Cent.
University of Arkansas.....	(1910)	64.5, 71.5
College of Physicians and Surgeons, Little Rock	(1908) 64; (1910) 50.6, 68.6, 68.7.	
St. Louis College of Phys. and Surg..	(1908) 73.5; (1909) 64	66.7
Barnes Medical College.....	(1910)	62
College of Physicians and Surgeons, Memphis....	(1909)	66.5
Memphis Hospital Medical College....	(1893) 53.4; (1910)	56.8
Vanderbilt University.....	(1888)	71.6
McHarry Medical College.....	(1910)	65.5, 73.8

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago....	(1907)	Illinois
Physio-Medical College of Indiana.....	(1901)	Texas
University of Louisville.....	(1909)	Illinois
Kentucky School of Medicine.....	(1897)	Kentucky
University of Kansas.....	(1906)	Oklahoma
Tulane University of Louisiana.....	(1908) (2, 1910)	Louisiana
Barnes Medical College.....	(1900)	Oklahoma
Washington University.....	(2, 1910)	Missouri
St. Louis Woman's Medical College.....	(1895)	Indiana
Kansas City Medical College.....	(1898)	Kansas
Columbia University, College of Phys. and Surg..	(1889)	Vermont
Vanderbilt University.....	(1895)	Oklahoma
University of Tennessee.....	(1902)	Texas
Physio-Medical College of Texas.....	(1906)	Oklahoma
University of Texas.....	(1898)	Texas

Book Notices

DIE EXPERIMENTELLE CHEMOTHERAPIE DER SPIRILLOSEN (SYPHILIS, RÜCKFALLFIEBER, HÜHNERSPIRILLOSE, FRAMBÖSIE). Von Paul Ehrlich und S. Hata. Mit Beiträgen von H. J. Nichols, New York; J. Iversen, St. Petersburg; Bitter, Kairo, und Dreyer, Kairo. Paper. Price, 6 marks. Pp. 164, with 50 illustrations. Berlin: Julius Springer, 1910. Rebman Co., 1123 Broadway, New York City, Agents for the United States.

In this book we have accounts of the fundamental work which led to the introduction of salvarsan ("606") as a therapeutic agent, especially in syphilis. This work is based throughout on the principles of chemotherapy developed by Ehrlich to the effect that a medicine acts only on those cellular structures with which it unites. After long and arduous labors he finally has reached constructive results of the greatest therapeutic importance.

Hata describes succinctly the biologic experiments on which the chemotherapy of the spirilloses is based. For the purpose of these experiments spirilla of recurrent fever, of chicken spirillosis, and of syphilis were used. The action of various substances on spirilla, *in vitro* as well as in infected animals, was determined. The course of the experimental infections and the technic used are described fully. Of the stains tested some were found to be spirillicidal in the test-tube but without effect in the animal body; a large number of arsenical preparations were tested also, and in the course of this work the prompt spirillicidal effect of "606" in non-toxic doses was discovered. In the meantime it had been shown that syphilis was communicable to rabbits, and Hata found that salvarsan, in doses of 0.015 to 0.01 per kilo, promptly kills the spirochetes and hastens the healing of the lesions. The experiments show that the affinity of salvarsan for the spirochetes of syphilis is so great that they are easily destroyed in the animal body without danger to the latter.

In the part written by Ehrlich he discusses, with his usual clearness and brilliancy, the chemical origin of dioxidyamidoarsenobenzol and the chemotherapy of trypanosomiasis and their consequences, the work on which preceded that on the spirilloses. He lays especial stress on the value of his demonstration of the true constitution of atoxyl for the experimental construction of "606," the arsenical radical of which carries the spirillicidal function. When this book was issued, Ehrlich had at hand reports concerning more than 9,000 cases of syphilis which had been treated with salvarsan. Not a single case of blindness or of sudden loss of any other sense is noted. Only a single death in any way directly traceable to the remedy had occurred, and in that case it may have been due to shock incidental to the injection. On account of possible dangers Ehrlich cautions against the use of the remedy in patients with extensive degenerations of the central nervous system, with paresis and tabes, with heart disease, especially angina pectoris, and with aneurysm. The specific action of the remedy is shown not only by its wonderful effects on many of the lesions of syphilis but also by the apparently prompt development of antibodies which, in the case of women, pass into the milk and favorably influence congenital syphilis in nursing children. It has been found also that serum of a patient freshly cured or treated by "606" has a definite action on syphilis in both adults and children. It would seem that such effects indicate the development of antibodies, the stimulus to the formation of which is to be found in the disintegration of the spirochetes and the setting free of antigens. Ehrlich points out that the curative effects of "606" are superior to those of any other remedy in syphilis; a single injection accomplishes practically what mercurial treatment of from four to six weeks will do. He recommends that special attention be given to improvement in the method of administration, to the matter of dosage and the repetition of the injections, and to the discovery of combinations of remedies which would increase the action of "606."

In a short note Nichols (U. S. Army) describes experiments with "606" to test in animals its action on the *Spirocheta pertenuis*, the cause of frambesia. In twenty-four hours after the injection, no more spirochetes could be found and the animals so treated were promptly cured. He advocates a trial of the remedy in the human disease in the tropics.

Iversen (St. Petersburg) details observations on the treatment of recurrent fever with salvarsan; after an injection of 0.2 to 0.3 gm., the spirilla disappeared completely from the blood within four to ten hours, and at the same time the subjective symptoms permanently subsided. Intravenous injection was found to be painless and the results therefrom more prompt than after the painful intramuscular injection. Bitter and Dreyer (Cairo) report similar results, the number of cases treated being, however, smaller. Iversen concludes that the specific spirillicidal effect is marvelous; the spirilla being destroyed with mathematical accuracy without injury to the host, the process constituting a striking instance of a most effective *therapia sterilisans magna*.

From the reading of this book one receives a very definite impression that the introduction of salvarsan marks a permanent step in advance in the treatment not only of syphilis but also of other diseases, like recurrent fever, a step which in no sense is traceable to accident but to the direct result of systematic experimental work guided by genial theoretical conceptions.

A TREATISE ON DISEASES OF THE EYE. By John E. Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College (Medical Department of New York University). Cloth. Price, \$6 net. Pp. 944, with 553 illustrations. Philadelphia: Lea & Febiger, 1910.

This recent candidate for text-book honors opens with a chapter on the development and comparative embryology of the visual apparatus—subjects too often neglected even in larger treatises on the eye and its diseases. A knowledge of the ordinary evolutionary steps through which the organ of vision passes, from the appearance of the primary optic vesicle to the full development of the organ, is necessary not only to a rational understanding of ocular pathology, but to an enlightened appreciation of physiologic optics. We are glad to see that these matters are as fully discussed as is consistent with the scope of a student's manual. There are several other chapters that demonstrate completeness in the treatment of ophthalmic subjects, among which are a description and a colored illustration of the chlamydozoön (not chlamydozoan, as entered in preface, text and index) of Prowazek and Halberstädter, a chapter devoted to special remedies, a full account of serotherapy as applied to eye diseases, and practical suggestions for the preparation of specimens for diagnosis in the search for microorganisms. The author furnishes plainly worded descriptions of the remedial measures and other subjects included in his thirty-one chapters, and has not burdened, obscured or padded the text with unnecessary matter. He has been fortunate in his selection of collaborators, who have written several attractive chapters. Among these are William N. Souther, who contributes the section on the "General Principles of Optics," and Alexander Duane, who writes on "Movements of the Eyeballs and Their Anomalies." The book has, however, the usual defects of its class—defective illustrations; and yet most of the colored plates and some of the black-and-white reproductions are a distinct improvement on those that do duty in the average text-book. Altogether, this treatise will be found to mirror the wide experience and independent views of its well-known author.

THE CAUSE AND CURE OF COLDS. By William S. Sadler, M.D., Professor of Physiologic Therapeutics, the Post-Graduate Medical School of Chicago. Cloth. Price, \$1 net. Pp. 147, with illustrations. Chicago: A. C. McClurg & Co., 1910.

There is a need for just such a book as this, which can safely be recommended to the laity. It is sensible, comprehensive and yet not discursive. It is gratifying to see the author admit the danger of drafts in the cause of colds. The slogan of some, who are carrying the fresh-air theory to the extreme, "Drafts do not cause colds," is on the one hand dangerous to health and on the other destructive of the poor victim's confidence in the adviser. Sadler places drafts where they belong as exciting causes and lays just weight on the more important underlying causes of overeating, under-elimination, inactive skins, and improper habits of bathing, clothing, etc. Prophylaxis and treatment are clearly given, with the reasons for their effectiveness, and the patient is frequently reminded of the conditions which are serious enough to make it wise to have a physician's advice.

GYNÉCOLOGIE OPÉRATOIRE. Par Henri Hartmann, Professeur de Médecine opératoire à la Faculté de Médecine. Paper. Price, 18 francs. Pp 498, with 422 illustrations. Paris: G. Steinheil, 2, Rue Casimir-Delavigne 1911.

This volume is to be regarded as the personal experience of one of the leading operators in Paris rather than as a complete systematic exposition of the subject. Some topics are very inadequately considered and out of all proportion to their importance—for example, ectopic pregnancy. The book is therefore more fitted for specialists in gynecology than for students or general practitioners. The illustrations are numerous and for the most part satisfactory.

Medicolegal

Liability of Municipalities for Deaths from Typhoid Due to Negligence in Permitting Water Furnished to Become Contaminated

The Supreme Court of Minnesota holds, in an opinion filed December 23, 1910, in the cases of Delia Kever and Kate Flanagan, each as administratrix, against the City of Mankato, that the municipality was liable for its negligence in its private or corporate capacity, if it negligently allowed the water supply in its waterworks system to become polluted, causing deaths from typhoid fever.

The complaint alleged that the defendant, a municipal corporation, negligently allowed waters and the water supply in its waterworks system to become infected and polluted with poisonous substances "and large quantities of filth and sewage, all of which were saturated with the germs of diseases * * * and did carelessly, negligently * * * permit * * * filthy, foul and dangerous substances, common sewage and other filth to escape into and saturate the water supply"; that by reason thereof the water became imminently dangerous to life and health, of which the defendant had full notice and knowledge; that the plaintiff's intestate, a citizen and resident, used the water, contracted typhoid fever and died in consequence, etc. The defendant city demurred to the complaint, and its demurrer was sustained, but the order sustaining it is now reversed by the Supreme Court.

It is to be noted, the Supreme Court says, that the complaint in this case set forth not a mere action against the defendant to recover damages because the city failed to provide an adequate supply of pure water. The question here was whether the city was liable for, among other things, recklessly causing dangerous substances like common sewage and other filth to saturate its water supply and the wells, mains and appurtenances thereto.

The first essential question was whether the city was exempt because it was carrying out a governmental function, or whether it was liable because it operated the waterworks in its private or corporate function. The defendant naturally insisted that it was performing merely a governmental function. But the court holds that it was liable for its negligence in its private or corporate capacity, and was not exempt as carrying out a governmental function.

The defendant also insisted that the city could make no profit out of its operation of these waterworks. Doubtless this was in a general way true; at all events it might be here admitted. But the sequence which the defendant sought to draw did not at all follow: i. e. that therefore it should be exempted from all liability for mismanagement. For the city is liable for neglect in connection with its streets, sidewalks, and sewers, from which in their very nature no profit is or can be made. The city operates the waterworks for profit in the sense that it is voluntarily engaged in the same business which when conducted by private persons is operated for profit. The city itself makes a reasonable and varying charge. The undertaking is partly commercial. It is enough that the city is in a profit-making business.

Then the defendant insisted that it would not be sound policy to open the door and permit actions like the present to be maintained for the reason that as a result the defendant city as well as any other city would be liable at any time to have the same misfortune and would be bankrupted

thereby. But the court must regard the defendant's figures as purely hypothetical. The question is one of general principles recognized by the law and not of the private views of court or counsel as to what the convenience or necessity of a particular city may dictate under particular circumstances. The general experience of public and private waterworks is that ordinarily their operation involves no such financial disaster as the defendant portrayed. It is obvious that a sound public policy holds a city to a high degree of faithfulness in providing an adequate supply of pure water. Nor does it appear why the citizens should be deprived of the stimulating effects of the fear of liability on the energy and care of its officials; nor why a city should be exempt from liability while a private corporation under the same circumstances should be held responsible for its conduct and made to contribute to the innocent persons it may have damaged.

The cases in which a city has been held responsible or irresponsible for damages by fire consequent on an inadequate supply of water are in a class of cases by themselves. From many points of view the rule holding the city liable for its negligence is not inconsistent with the rule there announced. The law does not undertake to achieve the impossible.

The defendant also urged that in no case has the city been held liable for negligence in the operation of its waterworks unless the act involved a trespass, or an invasion of a direct property right. Thus water escaping from a city reservoir runs onto another's property and does damage; this is trespass and there is liability. But if the escaping water should do damage to a person on a public highway there would be no trespass, but the law would recognize liability. Liability of the city is recognized in the case of streets and sidewalks which cannot properly involve trespass. Nor did the defendant show any reason for imposing liability in the case of trespass or the breach of insurance of safety which does not logically apply to cases of negligence. On general principles liability for negligence is more just and more generally recognized because it is based on culpability.

Lastly, the court holds that, on the assumption that the plaintiff's intestate could have maintained an action against the city had he lived, his administrator, or administratrix, could maintain an action under the Minnesota statutes.

Society Proceedings

WESTERN SURGICAL ASSOCIATION

Twentieth Annual Meeting, held at Chicago, Dec. 19-20, 1910

The President, DR. JOHN P. LORD, Omaha, in the Chair

Officers Elected

The following officers were elected: president, Dr. Amos W. Abbott, Minneapolis; vice-presidents, Drs. A. E. Halstead, Chicago and William J. Frick, Kansas City, Mo.; secretary-treasurer, Dr. Arthur T. Mann, Minneapolis.

Kansas City, Mo., was selected as the place for holding the next annual meeting, Dec. 18-19, 1911.

Desmoid Tumors of the Abdominal Wall After Operation

DR. E. WYLLYS ANDREWS, Chicago: I have seen only two cases of desmoid tumor in several thousand abdominal operations, both of which followed herniotomies. Most of the cases on record followed pregnancy or injury of the fascia above the inguinal region. Unlike keloids, true desmoids are found in the fascia and aponeurosis, especially of the abdominal wall. Histologically desmoid tumors are pure fibromata of the hard white form, showing coarse whirls of cut fibers macroscopically, like uterine myomata, and spindle cells microscopically with numerous fibrillae. The cells show oval nuclei. Myxomatous and even malignant degenerations may occur. Desmoid tumors should be removed by operation inasmuch as the tendency is to grow larger and occasionally to start degenerative retrograde or malignant changes.

DISCUSSION

DR. J. CLARK STEWART, Minneapolis: The point of greatest interest in Dr. Andrews' report is the analogy which he shows as to etiology between desmoid tumors and keloids. I doubt whether the term "desmoid" should be used. Originally desmoids were tumors of the posterior sheath of the rectus muscle, and I must differ with Dr. Andrews that these tumors are found in the majority of cases in the upper part of the abdomen. The majority of the reported tumors I have run across have been found in the lower half of the abdomen. They grow inward, so that ultimately they become covered only by peritoneum. They attain considerable size. Quite a number of the reported cases of desmoid tumors are undoubtedly sarcomatous, and it is hard to differentiate a sarcoma under the microscope from the ordinary desmoid. The after history of these cases has shown several times that they were sarcomas, yet I do not think there is any question about the malignancy of desmoid tumors as originally described.

DR. A. E. HERTZLER, Kansas City, Missouri: It is easy, I think, to fix the pathogenesis of these desmoid tumors. Any tissue which contains a large amount of the original substance, will, when irritated long enough, short of suppuration, give rise to this fibrous tissue hyperplasia. One sees the same tumors subperitoneally about the duodenum. They are histologically very much the same. Microscopically they differ from fibroma in that they are long, with large oval vacuolated cells, many round cells, and polynuclears. This point is sufficient to separate the desmoid tumor from the fibromatous tumor or any tumor analogous to sarcoma.

DR. E. WYLLYS ANDREWS: As to the identity of keloid and desmoid, keloid, although it appears in scar tissue, never involves anything but skin. Keloids are confined to the skin, no matter how great the size they may attain, and are movable and free.

Non-Suppurative Osteomyelitis

DR. J. CLARK STEWART, Minneapolis: Three distinct clinical conditions may be classed under this title. First, cases of osteomyelitis, in which owing to the non-virulence of the invading germ or to unknown conditions increasing the resistance of the individual, no necrosis is caused. There is no pus, no sequestrum, but instead there is great overproduction of bony tissue. These cases are quite common, regularly recognized and properly treated. Second, cases of injury, generally fracture, in which a small piece of bone is entirely separated and dies, forming about it a shell of dense new bone in which it lies until absorbed, but without suppuration. These cases differ from those of the first class in that the irritant is not bacterial, but a fragment of the third class differs from the others in that it has an insidious onset. The disease is essentially chronic, but progressive and is diagnosed and treated as rheumatism. The etiology seems to be unknown. Text-books on surgery term this condition "chronic osteoperiostitis," which is a misnomer, for the periosteum is normal. The characteristics pathologically are the transformation of the marrow cavity into a multicellular labyrinth filled with a tissue which macroscopically resembles red marrow, and subperiosteal production of bone which results in a fusiform enlargement, the new bone being spongy. Symptomatically these cases are characterized by an insidious onset, so-called rheumatic pains, worse in damp weather and at night, with slight evening rise of temperature. What would ultimately happen to a case of this kind without operation can only be surmised. It seems probable that the bone would remain enlarged and painful until stirred up by a fresh injury or infection, when there would be suppuration. The diagnosis is easy, after syphilis is excluded. Tuberculous osteomyelitis causes cold abscess and sinus formation, while periosteal sarcoma is generally more rapid and can be eliminated by skiagrams. Fusiform enlargement of a long bone, increasing very slowly in size, with point pressure tenderness in various places, and slight afternoon temperature, is a characteristic picture. The treatment consists in curetting the bone each way until normal bone is reached, cleansing, and filling the cavity with Moorhof's wax.

DISCUSSION

DR. D. S. FAIRCHILD, Des Moines, Ia: I have seen a number of cases of this kind which seemed to have arisen from some injury which had been inflicted to the bone, with involvement of the periosteum to some extent, but the trouble seems to extend throughout the entire shaft of the bone, the tibia being most commonly affected because it is more subject to traumatism. In the cases I have seen the bone has been dense. In the recent cases where the disease has not been progressing for a long time the bone is softer, and when the medullary canal is examined it is found almost entirely occluded by the proliferation of this bony tissue. These cases are more like cases of osteitis in which the inflammation has extended not only into the medullary canal and from the periosteum, but into the bone substance itself, and in the cases of long standing the bone has been very dense so that when a gutter was tunnelled out, it required a considerable amount of chiseling to do so.

DR. W. W. GRANT, Denver: The diagnosis of these cases is not made early, and that is why we do not see more of them. I believe that there will be ultimately death of the part and either pus formed or sequestrum, and an involucrum. We saw these cases formerly much oftener than now, because no one thought of operation until there were several sinuses leading to the canal. To-day the diagnosis can be made earlier, and if it is, operation should be done earlier when the patient will be saved several months and years of suffering, and will get well with a better leg. It is necessary to exclude syphilis and tuberculosis especially in arriving at a proper diagnosis.

DR. JAMES E. MOORE, Minneapolis: The principal difficulty in diagnosis is between non-suppurative osteomyelitis and chronic bone abscess. Therapeutic tests will eliminate syphilis. As a rule, syphilitic disease of the bone is bilateral, while non-suppurative osteomyelitis is usually unilateral. Chronic abscess of bone is likely to be limited to one end of the diaphysis, while the condition under discussion affects the entire diaphysis. The history of these cases is that of a low form of inflammation, with gradual enlargement, the principal symptom being pain, more particularly at night. When we operate, we find the main part of the bone proper eburnated, and the older surgeons amputated many of these limbs, showing how great the pain is at times. The modern treatment is that pointed out by the essayist.

DR. ARTHUR T. MANN, Minneapolis: I have had two cases of this type of osteomyelitis in which I used the Moorhof wax. One patient was a girl, thirteen years of age, who had symptoms for two years. She had the usual symptoms of chronic osteomyelitis in the lower third of the tibia, the pain being worse at night, and the temperature sometimes running up to 102 F. At the end of two years, when I saw her, she had a fusiform swelling at the junction of the lower third of the tibia, which was very tender. She cried at night on account of the severe pain. On opening this there was a mass more dense than cancellous tissue, but much thinner than ordinary cortical bone, so that the cortex had thinned out and the medullary cavity had filled in. In the center there was pale granulation tissue. This tissue was scooped out and the cavity filled with Moorhof's wax, and the usual closure of the wound made. There was healing by first intention. The pain stopped immediately following the operation. There had never been suppuration.

DR. WILLIAM H. MAGIE, Duluth, Minn.: In a recent case I had previously troughed the bone. Recurrence took place four or five months later, when Dr. Judd, of Rochester, operated. Later the patient returned to me with all the symptoms reestablished. I found the tibia enormously enlarged for fully eight inches, so that the case looked like one of sarcoma. I adopted the plan of chiseling down at the extreme end of this enlargement, splitting it, removing one-half of the tibia, then I applied skin direct on the raw surface of the bone that I had left, after removing half of the diameter of the tibia for fully eight inches. The wound healed by first intention, and the pain was relieved immediately. The patient has been well since and is working with a lumber crew.

DR. A. E. HERTZLER, Kansas City, Mo.: I do not think we would make a mistake if we called this a desmoid tumor of the bone. In the chronic sclerosing type of bone disease we have a milder form of infection which produces an exudate which is capable of being organized, and not as in the more acute types which form an exudate which is not organized. Rather unconsciously, I suspect, in the use of Moorhof's bone plug, you are imitating, in a measure, a very mild type of infection. The iodoform produces an exudate which is capable of being thrown down into fibrin, and it is by active hyperemia acting on the substance which produces an exudate, after forming fibrin, that healing is brought about.

DR. M. L. HARRIS, Chicago: In the cases belonging to the subgroup which has been described, there is no material enlargement of the bone, no condensation of the bony cortex. The disease usually affects the shaft of the bone. In the interior of the bone we find the red marrow which Dr. Stewart mentioned; it is very soft, almost semiliquid in some cases. These cases are characterized by extreme pain. The most interesting and typical case of that kind I saw was a man who had been treated for syphilis. He had visited several watering places in Europe, but returned to this country without being relieved. His pain was so severe that he was obliged to take morphin to afford relief. There was extreme pain in the shaft of the humerus. In these cases there is sensitiveness when the bone is percussed or when deep pressure is made. All that is necessary to do is to open the medullary cavity, remove a portion of the cortex and relieve tension.

(To be continued)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-Third Annual Session, held at Nashville, Tenn.,
Dec. 13-15, 1910

The President, DR. W. O. ROBERTS, Louisville, in the Chair

Officers Elected

The following officers were elected for the ensuing year: president, Dr. Rudolph Matas, New Orleans; vice-presidents, Drs. Guy Leroy Hunner, Baltimore, and J. Garland Sherrill, Louisville; secretary, Dr. William D. Haggard, Nashville; treasurer, Dr. William S. Goldsmith, Atlanta.

Washington, D. C., was selected as the place for holding the next meeting, in December, 1911.

The Importance of Preserving the Gall-Bladder

DR. J. W. LONG, Greensboro, N. C.: An analysis of eighty-six cases convinces me of the value of retaining the gall-bladder. Cholecystectomy should be done in the presence of new growths, especially primary carcinoma; also in gangrene when the whole thickness of the bladder-wall is involved, but not otherwise, since I have had several recoveries following drainage for gangrenous mucosa of the bladder. Infection and empyema are only relative indications for doing cholecystectomy, most patients doing well under cholecystostomy. The cystic duct obstruction always present in empyema is gradually overcome under the influence of drainage, and after a varying interval of one to seven days, in one instance fifteen days, bile begins to discharge through the duct. Stone impacted in the cystic duct is only a rare indication for cholecystectomy. Even perforation cannot be considered an absolute indication for cholecystectomy. Drainage is second in importance only to removal of stones. Removal of stones cannot cure a pancreatitis, but drainage does. Drainage is the *sine qua non* for curing the patient of the widespread sequelæ of gall-bladder infection. It is prudent in doing a cholecystectomy to leave a forceps rather than a ligature on the cystic duct in order to provide for a free flow of bile, should untoward symptoms arise. The gall-bladder is not a storage pouch for bile, but rather is an expansion tank for the bile-duct system. Its removal is always followed by dilatation of the ducts, even the nub of the cystic duct compensating for the loss of the expansion tank. Pure bile injected into Wirsung's duct causes pancreatitis, bile mixed with the bladder mucosa does not,

a cogent reason for preserving this function. The only avenue through which to treat chronic pancreatitis is the bile-duct system, preferably through the gall-bladder.

DISCUSSION

DR. THOMAS S. CULLEN, Baltimore: We have for several years made it a practice to drain all gall-bladders, except in those cases in which there is a suspicion of malignant disease, or in which there is empyema of such a character that it is impossible to drain satisfactorily, and the danger of removing the gall-bladder is not as great as that of infection from drainage.

DR. HOWARD A. KELLY, Baltimore: Under no circumstances would I remove a gall-bladder that is apparently sound or even moderately diseased which evidently may easily recover with drainage; nor would I remove a gall-bladder in which there is any suspicion of trouble in the common duct or any pancreatic disease. It is best to remove a gangrenous gall-bladder or one that is suspected to be malignant.

DR. J. GARLAND SHERRILL, Louisville: There has been a tendency to do too radical operations in this region. I have saved a number of gall-bladders that were full of pus by drainage. The reparative power of the tissues is very great and the opening becomes patent in a short time, and drainage of bile free.

DR. RANDOLPH WINSLOW, Baltimore: I operated in a case some time ago in which the duct was evidently obstructed; although bile reappeared, it did not flow. However, in the course of time nothing but mucus came from the external opening; the gall-bladder was distended, and bile did not pass. There occurred stricture of the cystic duct which necessitated a second operation for the removal of the gall-bladder.

DR. R. E. FORT, Nashville: In those cases in which we have a small contracted, rigid, friable gall-bladder, not larger than the finger, in which drainage cannot be instituted, I think it not only proper, but essential to do a cholecystectomy. There are cases in which we have common duct obstruction and it becomes necessary to do cholecystectomy, but in other cases it is not necessary to do this radical operation.

DR. BACON SAUNDERS, Fort Worth: In these old chronic gall-bladder cases it is necessary to continue drainage sometimes for six weeks in order to get satisfactory results.

DR. WILLIAM B. COLEY, New York City: When I remove a gall-bladder I institute drainage in the cystic duct and this does as much good to the pancreas as if we drained through the gall-bladder itself.

DR. J. W. LONG, Greensboro: In gall-bladder surgery, as in all other surgery, it is largely a matter of personal equation in deciding what is the best thing to do in the individual case.

Chronic Urethritis and Chronic Ureteritis Caused by Tonsillitis

DR. GUY L. HUNNER, Baltimore: Certain cases of chronic urethritis and chronic ureteritis heretofore of obscure origin are due to tonsillitis, although the great majority of these cases are due to gonorrhea, most of the cases of rheumatic urethritis of the older text-books being of this nature. Some cases can be traced to trauma and infection in childhood, or trauma and infection of non-gonorrheal character in the newly married. Other cases may possibly be due to onanism, and some may be classed as autoinfections, the short female urethra and the myriads of microorganisms normally present in the outer orifice being factors that would make autoinfection probable. After ruling out gonorrhea and these rarer causes of infection, there still remains a certain large percentage of chronic urethritis cases, which, in recent years I have associated with the rheumatic diathesis. In a large proportion of this class of cases the disease is due to infections or toxins from the tonsils, and the importance of this observation is appreciated only when we recognize that the urethritis cannot be cured permanently until the tonsils are thoroughly extirpated. Of the four operative cases, two had been treated for months without appreciable permanent benefit to the urethra, whereas after removal of the tonsils, one patient recovered promptly and has been well for fourteen months, after having had bladder trouble eight years. A second patient after removal of the tonsils, had an irritable spot in the base of the right fauces, which for seven months

gave periods of sore throat, accompanied by rheumatic symptoms in the knees and urethritis symptoms. For the past four months the throat symptoms have been absent, and the joints and urethra are apparently well. The third patient had been treated on two occasions in the past nine years with prompt recovery from the urethral symptoms each time. When last seen in March, 1910, the tonsils were clipped with the tonsillotome, and the patient reports a return of all her symptoms soon after going home. The fourth patient had a tonsillectomy after two urethral treatments, so that no conclusions can be drawn in her case as to the futility of urethral treatments, without removal of the tonsils. She has apparently recovered after having had bladder trouble three years, although only four months have elapsed since the tonsillectomy. The fact that acute prostatic abscess sometimes follows inflammation of the tonsils suggests a possible relationship between the tonsils and certain chronic urethritis cases in males. These cases are often associated with chronic prostatitis, in which gonorrhea can be excluded as the cause, and for which no definite etiology has heretofore been obtainable.

DISCUSSION

DR. J. M. MASON, Birmingham: All the cases reported have occurred in unmarried women in whom there is some possibility of nervous disturbance or reflex irritation of the urethra. I would like to ask Dr. Hunner whether he has had any cases in married women or in women whose sexual relations are normal.

DR. G. R. HOLDEN, Jacksonville: Did the discharge in these cases contain pus cells as seen by the microscope?

DR. HOWARD A. KELLY, Baltimore: The wife of a professional colleague had been under my care for fifteen years. She had more or less malaise. Careful examination revealed pus in the urine in varying amounts, but so far as the local conditions were concerned, the patient was without symptoms. She was in ill health. I catheterized and found pus coming from the left kidney. I dilated the ureter on that side, washed out the kidney, she got better, and after a few months returned for further investigation and treatment. She had for twelve years been troubled with rheumatism. She had enlargement of the joints. Last spring, in examining her, I found a large, tender kidney, with a good deal of pus in the urine. I drained this kidney, and did a plastic operation on the semilunar ureteral valves. I cut down on the fascia at the end of the ureter and drained from the side. She continued to suffer with rheumatism through the summer, although she experienced some relief from the drainage in the side. This fall I took out the kidney and her rheumatism disappeared.

DR. JOHN F. OECHSNER, New Orleans: It seems from the cases cited that the tonsils were at fault. I fear, however, that what has been said may lead to more or less universal tonsillectomy; if we regard the tonsils as always at fault in cases of urethritis, where the specific organism, the gonococcus more particularly, cannot be determined. I would, therefore, make a plea to educate the practitioner to be more specific in determining the nature of a local infection, whatever it may be, and find out exactly where the focus of infection is.

DR. GUY L. HUNNER, Baltimore: Some of my patients were married women. They did not have pus in the urine. You cannot milk pus out of the urethra as you can in an acute gonorrheal case.

The Best Method of Exposing the Bladder for Aggressive Operations by the Suprapubic Route

DR. HOWARD A. KELLY, Baltimore: I make a transverse crescentic incision above the pubis out to or even beyond the semilunar line on each side. I then separate the fascia from the muscles after the manner proposed by Pfannenstiel for operations on abdominal and pelvic tumors. In bladder cases, however, the abdominal cavity is not opened. The recti muscles, freed from their overlying fascia, are flaccid and easily drawn apart, thus affording a very broad exposure of Retzius' space. The bladder is brought into view by inflation with air and is widely incised in its transverse axis; thus, all parts of the organ are perfectly exposed to view and made easily acces-

sible to operation. The whole question of dealing with extensive ulcers, papillomata, malignant disease and cystitis requiring resection is by this means greatly simplified. Further help in bringing the base of the bladder up within reach may be secured by introducing two fingers into the vagina in women and pushing the anterior wall upward. At the conclusion of the operation, the bladder is closed with fine silk or catgut sutures, the investing fascia is also carefully united with catgut or silk, and the rest of the abdominal wound closed, in suitable cases leaving a small drain extending down to or into the bladder.

DISCUSSION

DR. J. S. HORSLEY, Richmond, Va.: For more than a year I have been using the Pfannenstiel incision as a routine measure in all suprapubic cystotomies. It takes very little more time than the ordinary incision and it leaves the abdominal wall in a much better condition afterward.

DR. ERNST JONAS, St. Louis: The Pfannenstiel incision gives a very good view of the bladder. This incision was advocated for clean gynecologic cases where there is no pus in the pelvis, and not for cases in which the pelvis is badly infected.

DR. REUBEN PETERSON, Ann Arbor, Mich.: The Pfannenstiel incision is only suitable for clean cases. While the technic demonstrated by Dr. Kelly is fine for clean cases, I can see objection to this incision in suppurative cases.

DR. GEORGE H. NOBLE, Atlanta, Ga.: I have made use of the transverse or Pfannenstiel incision quite frequently in cases in which I did not expect to encounter a septic process, both in placing the uterus in its normal position and in opening the bladder. A point I want to bring out especially is, that in this dissection you can increase the opening very materially and satisfactorily by making a section of the lower ends of the recti muscles, where necessary. This is particularly the case where you want to open the pelvis to go into the peritoneum.

DR. ALEXANDER HUGH FERGUSON, Chicago: I can see how this method of exposing the inside of the bladder would be of great utility to those surgeons who practice suprapubic prostatectomy; also in removing papillomata to avoid the ureter. We must remember that there is no fascia behind the rectus muscle in this region, and that it retracts easily and acts as a bar to infection in the operative area.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

December 22

- 1 *Care and Management of the Tabetic Bladder. J. D. Barney, Boston.
- 2 *Case of Bilharziasis with Appendicitis. C. G. Lane, Woburn, Mass.
- 3 Tuberculosis Among the Philippine Scouts (Native Troops) of the United States Army. I. W. Brewer, U. S. Army.

1. **Care of Tabetic Bladder.**—According to Barney, trabeculation of the bladder in tabes is found in more than 80 per cent. of cases, and may occur before any symptom or other sign of vesical disturbance. In tabetic bladders it is found in the fundus and side walls only, in typical cases. It is more delicate and regular than that seen with mechanical obstruction. Probably it is due to a primary detrusor hypertrophy. Residual urine is found in more than 70 per cent. of the patients, often before any symptoms begin. In over 50 per cent. of all cases the urine is infected. Cystoscopy is generally a painless procedure, a fact which is of some diagnostic value. Urinary disturbances, variable in character, are observed in over 90 per cent. of all patients with tabes.

2. **Bilharziasis.**—Lane reports a case of both intestinal and genito-urinary bilharziasis, complicated with acute appendicitis. Sections of the appendix showed many bilharzia ova in the wall. A review of the reported cases brings out the fact that there are only five undoubted cases of the South

African *Bilharzia hematobia* among them. Investigation shows that the lateral spined ova may belong to one species of bilharzia and the terminal spined to another.

New York Medical Journal

December 24

- 4 The Law of Degeneracy in Its Relation to Medicine. C. P. Noble, Philadelphia.
- 5 Psychotherapy—Its Uses and Abuses. E. D. Fisher, New York.
- 6 Pulmonary Tuberculosis as Studied in the General Medical Dispensary. E. J. G. Beardsley, Philadelphia.
- 7 Ear Disease and Its Prevention. A. Bardes, New York.
- 8 Prevention of Abortion. C. Rosewater, Omaha, Neb.
- 9 Removal of the Fauces Tonsils Followed by Exophthalmic Goiter. C. J. König, Paris.
- 10 Liquid Air and Carbonic Acid Snow. J. D. Gold, Bridgeport, Conn.
- 11 The Dislocated Puerperal Uterus. W. L. Marsden, Burns, Ore.
- 12 Magic and Medicine: A Study in the Borderland of Light and Darkness. J. Knott, Dublin, Ireland.

Medical Record, New York

December 17

- 13 Salvarsan. M. S. Kakels, New York.
- 14 Intussusception of the Appendix. A. V. Mosehcowitz, New York.
- 15 Typhoid Spine. N. B. Potter, New York.
- 16 *Stab Wound of the Heart. J. F. Erdmann, New York.
- 17 Spontaneous Rupture of a Glaucomatous Eyeball. B. Chance, Philadelphia.
- 18 Heart Stimulants Used During Fevers with a Recommendation of the Preordial Compress. W. L. Seor, St. Petersburg, Fla.
- 19 *Chancroids Due to Mercury Bichlorid. W. J. Robinson, New York.

December 24

- 20 Neurology in Zurich. E. W. Scripture, New York.
- 21 Immunity Reactions as Products of Natural Selection. R. G. Eccles, Brooklyn.
- 22 Probable Duration of Life. A. H. Stewart, Lawton, Okla.
- 23 *Treatment of Paralysis Agitans with Parathyroid Gland. W. N. Berkeley, New York.
- 24 A Case of Pyloric Obstruction. A. Goldman, New York.
- 25 A Simple Clinical Method for Measuring the Diameter of the Pupil. T. A. Williams, Washington, D. C.

16. Stab Wound of the Heart.—A man received a stab wound in the chest, made by a knife three-quarters of an inch wide by 6 inches long. The puncture—three-quarters of an inch long—was on the right side of the chest, $1\frac{3}{4}$ inches to the right of the median line, penetrating the fifth costal cartilage obliquely, and splitting its lower three-quarters. The distance from the left nipple was 6 inches to the right of the median line and on a line $1\frac{1}{4}$ inches below the right nipple. The patient was received at the hospital shortly after the injury, stating that he struck his assailant a blow and knocked him down subsequent to his being stabbed. His condition at the time Erdmann saw him was one of profound shock. The heart sounds were distant and almost imperceptible. The patient complained of constant abdominal pain, and on palpation he was found to be exceedingly tender on the right half of the abdomen. On percussion, dullness and flatness extended over this entire region, being particularly marked in the upper half.

An exploration was begun at the angle between the seventh costal cartilage and the ensiform process. On reaching the peritoneum a deep blue-black appearance, such as is seen in extrauterine pregnancy with rupture, was observed. The exploration was then extended 2 inches further in the abdominal wall and the peritoneum opened, when the dark blue mass was seen to be the liver, driven downward 4 inches below the costal margin. It was deeply cyanotic. The peritoneal cavity and the dome of the liver were explored and nothing found to indicate puncture. The seventh costal cartilage was then raised, the diaphragmatic musculature was detached, and the cartilage cut at its juncture with the rib. The sixth, the fifth, and the fourth were also cut through. A retractor was placed on the cartilages, the skin raised from the sternum at the upper limit of the incision, and the sternum cut through at the upper limit of the incision with a pair of bone-cutting forceps. On raising the flap, a hole admitting the index finger was found penetrating the pericardium, and a similar hole was found in the right ventricle. An exposure was made 4 inches in length. The palm of the hand above and the thumb below grasped the heart, while the index finger was retained within the ventricle. A curved needle, threaded with No. 2 plain catgut, was then placed down to the heart, and during a systole a puncture was made, irrespective of

penetrating the cavity or not. As soon as the needle had pierced one side of the incision, the finger was withdrawn and the needle made to make its exit from the opposite side. A knot was tied and the heart held dangling from this suture. The subsequent stitches—eight or ten in number—were readily placed, one more being placed in the line of the heart wound proper, and two more rows placed after the manner of Lembert. A long cigarette drain was placed in the pericardial cavity, and the incision in the pericardium closed up to the emergence of the drain, which was led out at the angle of the seventh costal cartilage and the sternum. Catgut stitches were taken in the costal cartilages between them and the ribs. Nothing was done to the sternum, except to hold it in place by the dressings after the skin wound was sutured. The patient was back in bed in about thirty minutes, and was out of bed and well on the fourteenth day.

19. Chancroids Due to a Peculiar Cause.—In Robinson's case a bichlorid tablet inserted in the vagina proved sufficiently irritating to cause the formation of ulcers.

23. Treatment of Paralysis Agitans.—Berkeley is of the opinion that paralysis agitans has all the marks of a chronic toxemia. The symptoms following parathyroidectomy are remarkably like those of paralysis agitans. In cases of myxedema and exophthalmic goiter, paralysis agitans has not infrequently occurred as a complication or sequela. Of fourteen reported autopsies on paralysis agitans, eleven showed negative parathyroid glands, three showed distinct pathologic changes; and lastly, a remarkable percentage of patients with paralysis agitans treated with properly identified fresh gland, or a properly made extract, have been greatly benefited. Berkeley's first patients were treated with commercial parathyroid gland. This worked well in a few cases, but was found so variable and uncertain in its action that it had to be given up. He next tried a preparation of properly identified gland rubbed up in the crude fresh state to a dry powder with milk sugar. This was distinctly better, but still seemed to be variable and unstable. Later, he tried a nucleoproteid solution of the parathyroid made up by Beebe's method and preserved with a few drops of chloroform in the bottom of each bottle. This has still further raised the percentage and degree of improvement, but it precipitates rapidly, and is susceptible to damage from temperatures above 5 C., therefore hardly admitting of transportation to any great distance. His latest process is this: The nucleoproteid extraction process (Beebe's method) is adhered to generally, but all the preliminary steps are hurried, and the precipitated nucleoproteid is not redissolved, but quickly dried in a draught of cold air; so that within eight or ten hours after the warm glands leave the bullock a minute amount of smooth yellow powder is obtained which stands physiologic tests admirably, is stable, easily handled, and does not require a freezing temperature (though for safety's sake it is recommended to keep it on ice). The powder is rubbed up with milk sugar as a menstruum and is placed in sealed containers.

American Journal of Public Hygiene, Columbus, Ohio

November

- 26 Hygiene of the Swimming Pool. J. W. M. Bunker.
- 27 Spread of Scarlet Fever and Diphtheria in Schools. C. V. Chapin, Providence, R. I.
- 28 Water Analysis and the Public Health. D. G. Revell, Edmonton, Alberta.
- 29 Functions of a Public Health Laboratory. D. G. Revell, Edmonton, Alberta.
- 30 Germicidal Value of a Few "Commercial" Coal-Tar Disinfectants. F. H. Slack and E. M. Wade, Boston.
- 31 A New Form of Anaerobic Jar. S. H. Ayers, Washington, D. C.
- 32 Social Economics and Public Health. E. Seidel, Milwaukee.
- 33 Cholera. M. J. Rosenau, Boston.
- 34 Infantile Paralysis. R. W. Lovett, Boston.
- 35 Municipal Sanitation. C. V. Chapin, Providence, R. I.
- 36 Personal Hygiene. P. G. Stiles, Boston.

American Journal of Medical Sciences, Philadelphia

December

- 37 *Pleurisy as a Complication and a Sequel of Lobar Pneumonia; Its Diagnosis and Treatment. J. M. Anders, Philadelphia.
- 38 *Use of the Soy Bean as a Food in Diabetes. J. Friedenwald and J. Ruhrah, Baltimore.
- 39 *Auscultatory Signs of the Respiratory System. J. H. Barach, Pittsburg.

- 40 *Clinical Method of Estimating the Coagulation Time of the Blood. R. D. Rudolf, Toronto, Canada.
 41 *Clinical Significance of Transitory Delirium Cordis. G. H. Fox, Ann Arbor, Mich.
 42 Erythremia or Polycythemia with Enlarged Spleen and Chronic Cyanosis. E. C. Seufert, Chicago.
 43 *Tuberculosis and Menstruation. D. I. Macht, Baltimore.
 44 Smooth Atrophy of the Base of the Tongue. D. Symmers, New York.
 45 Syndrome of Sphenopalatine Ganglion Neurosis. G. Sluder, St. Louis.
 46 *Clinical Value of the Cammidge Reaction. L. C. Kinney, Philadelphia.
 47 Determination of Chlorin and the Purin Bodies in Urine. R. W. King, Las Animas, Colo.

37. Abstracted in THE JOURNAL, July 9, 1910, p. 155.

38. **Soy Bean as a Food in Diabetes.**—The most striking point about the soy bean is the fact that it contains no starch, or, at least, a very small quantity, which is strange when one considers it resembles the various beans very closely, and all other varieties are extremely rich in starchy materials. As it contains no starch, it is exceedingly difficult to make a bread without the introduction of a certain amount of some other flour, but Lecerf, a French pharmacist, is said to have made a bread which resembled somewhat ginger bread, which was not at all disagreeable, and which contained no starch whatever or a very small percentage. Lailleux is said to have treated a number of cases of diabetes in Algiers with the soy bean with admirable results. The experience of Friedenwald and Ruhräh with the soy bean in diabetes extends over a series of eight cases. The beans may be taken as a vegetable by soaking them for from twelve to sixteen hours, until the skins come off, and stirring until the skins rise to the surface and can be removed. They are then boiled in salt water or with bacon until soft, and seasoned with pepper, salt and butter and served hot. When the bean is not available the gruel flour from the soy bean is even more serviceable. Each ounce of this soy gruel flour yields about 13 grams of protein and 120 calories, and there are several ways in which it can be used: 1, As a gruel; 2, in broths; 3, in making biscuits.

In the study of the authors' eight cases of diabetes, the patients were placed, first, on an unlimited diet; second, on the restricted (usual diabetic) diet; and third, on restricted diet, together with the soy bean. The soy bean replaced largely the gluten of wheat bread, while the patient still remained on the usual diabetic diet. In nearly every instance there was a marked diminution in the glycosuria.

39. **Auscultatory Signs of the Respiratory System.**—Barach calls attention to certain findings relative to the conduction of auscultatory sounds by the bony framework of the chest. The first observation is, that typical bronchial breathing may be heard at the acromion end of the clavicle. By placing the bell of the stethoscope over this area and having the patient make deep respiratory efforts, typical bronchial breathing will be heard. Not only is bronchial breathing heard, but the spoken and whispered voice sounds are transmitted clearly. These auscultatory findings are present in nearly all chests and are heard especially well in those persons who do not have a thick subcutaneous and fatty covering. In the normal individual they are usually heard with more distinctness on the right side than on the left. Very often the bronchial sound is transmitted to, and may be distinctly heard by applying the stethoscope over the occipital and other bones of the cranium. It may also frequently be heard below the fifth dorsal vertebra. These observations prove conclusively to Barach that the bony framework of the chest is capable of transmitting auscultatory signs from points near their source of origin to distant points on the contour of the chest.

40. **Coagulation Time of the Blood.**—The chief object of Rudolf's communication is to advocate and describe a method of measuring the coagulation time of the blood which is convenient clinically and which seems to give reliable results. Thin glass tubes 1.5 mm. in diameter and about 7 inches in length are used. A pint thermos bottle is employed, and its ordinary cork is replaced by a rubber cork perforated in three places. In these perforations rest two brass tubes, 7 inches long and just large enough in caliber to hold easily the glass blood-tubes. The third perforation in the cork contains a

thermometer. The apparatus rests on its side on a special stand, which prevents it rolling about. The bottle is filled with water at the temperature at which it is desired to work, say 20 C., and the cork put in position. The temperature of the contents will remain for fully an hour at the same point in a room of 55 F. or more.

The back of the finger or thumb near the nail is cleansed with soap and water and then with alcohol. As soon as it is dry the digit is wrapped about with a piece of twine loosely and at once punctured, the exact time of puncture being noted. Two glass tubes are partially filled from the same drop, the blood being made to run nearly to the far end of each, and each as filled is placed in a brass tube of the thermostat, the first in that to the left and the other in that to the right. Then the protruding ends, which are the ends at which the blood entered the tubes, are sealed at one's leisure with a spirit lamp. If the test is being made on an apparently healthy individual, in about five minutes the first tube is drawn out of its holder by the left hand (which is covered with a thick glove, in order that the heat of the fingers may less affect the tube) and touched with a glass-file and broken across between one's fingers and thumbs, and the broken ends are slowly separated. Probably the blood-column also breaks across sharply, if one may so speak of a column of fluid. The tube is at once replaced in the thermostat. In half a minute the second tube is removed and treated in the same way. Soon on breaking the tube across and separating the ends a thread of fibrin appears between the broken ends. At once the tube is broken farther on, and probably the thread of fibrin again appears. Very rarely a thread appears at the first break and not at the next one. This would be counted as a negative finding, and the tube would be at once replaced in the thermostat and tried again in fifteen seconds. If one is careful to begin the breaking at the first blood which entered the tube, such a thing seldom happens. One of the alternating tubes having given a positive finding, the other one almost certainly will do so in the next half minute, but if not, then usually in the next. With quick working one can try them every quarter of a minute, but the half-minute intervals give more time to make sure that a given tube has really coagulated, as it can be broken several times before the next one is due.

The temperature at which the experiment is carried out makes a marked difference in the results. This difference is about one minute for each degree centigrade. At 20 C. (68 F.) the average coagulation time is about eight and one-half minutes. Age (beyond early childhood) and sex seem to have no influence on the coagulation time. A diurnal variation does not seem to occur; possibly there is a slight increase in coagulability as the day advances, but this is probably due to experimental error. There appears to be a slight tendency to decrease in the coagulability about two hours after a meal, but it is too slight to put much weight on. Calcium lactate does not appear to have any marked influence on the coagulation time of the blood of normal individuals. Citric acid appears to have a slight retarding influence on the coagulation. Considerable variation occurs in the coagulation time of a healthy individual from time to time, the nature of which is not evident.

41. **Transitory Delirium Cordis.**—Of six patients in whom transient attacks of delirium cordis were observed by Fox, five eventually developed the permanent type of irregularity. Many features of the attacks themselves would suggest a nervous condition, especially the onset under excitement and the complete recovery between attacks with no demonstrable heart changes. The prognosis, however, should be guarded and efforts made to avert the onset of permanent irregularity, which is practically always accompanied by symptoms of cardiac insufficiency.

43. **Tuberculosis and Menstruation.**—The histories of nearly all the female patients between the ages of 12 and 45 years, about 1,600, applying for treatment to the Phipps Dispensary of the Johns Hopkins Hospital were analyzed by Macht. Over one-half of the patients, or 51.6 per cent., at the time of admission gave a history of no change in menstruation at all; 27.3 per cent., or over one-fourth, gave a history of amenor-

rhea, or more or less scanty flow or suppression; and 4.6 per cent. complained of a more profuse flow than ordinarily, without any history of uterine or adnexal disease. Of the patients under 20 years, 32.5 per cent. and 39 per cent. of those between 20 and 30 years of age, making a total of 71.5 per cent., or nearly three-quarters of all the patients with amenorrhea below 30 years of age; 45.8 per cent. of the amenorrheic patients, or nearly one-half of them, were in the first stage of the disease; 41.9 per cent. of the patients were ill for not more than six months. Taking these three data together, it will be seen that amenorrhea is, therefore, a sign of considerable diagnostic importance. Macht has repeatedly been led to suspect tuberculosis in young patients by this sign alone. Menorrhagia, when it does occur, is an early symptom, preceding amenorrhea, and unless carefully inquired for, may be easily overlooked. For this same reason it is a valuable diagnostic sign.

The course of events is usually something like this: A patient's menses being regular and normal, begin without apparent cause to grow more profuse and of longer duration. This continues for a few months, and is followed by a gradual development of amenorrhea, which may eventually end in complete suppression of the menses. The effect of the tuberculous process on the menstrual function is manifested chiefly in changes in the menstrual type. (a) Tuberculous patients may menstruate regularly to the end, especially after the age of 35. (b) The patients may have amenorrhea, passing into complete suppression of the menses. (c) An appreciable number, 4.6 per cent., may have menorrhagia preceding the amenorrhea. The age of the patient is the most important factor in these conditions. Some cases of dysmenorrhea are of a purely tuberculous origin, and are relieved by tuberculin treatment. The effect of treatment in general is to restore a normal type of menstruation. The changes in the menstrual type are of considerable diagnostic and prognostic value. The influence of menstruation on the tuberculous process is manifested by aggravation of all symptoms, and accentuation of physical signs. The effects of ovulation may continue after the menstrual flow has been suppressed.

Periodic variations in temperature are very common, occurring in probably 50 per cent. or more of all cases, and are of diagnostic and prognostic value. These rises in temperature may be (a) premenstrual, (b) menstrual, (c) postmenstrual, (d) intermenstrual. Periodic hemoptyses and other hemorrhages in tuberculous patients are more common than is generally assumed. These hemoptyses may occur simultaneously with the menstrual flow, or may take the place of the menstrual flow. True vicarious menstruation does occur, but it is exceedingly rare, so that in most cases of vicarious hemoptysis a tuberculous lesion is to be suspected. Tuberculin should not be administered at the time of menstruation. The evil effect of the menstrual processes on the patient's constitution can be minimized by proper treatment.

46. Clinical Value of the Cammidge Reaction.—In 105 cases with a negative Cammidge reaction there was no evidence of disease of the pancreas; seventy-five of these cases came to operation at which the gall-bladder region was explored, and in them palpation of the common duct made it necessary for the operator to feel the consistency of the pancreas. In these cases the pancreas was recorded as normal to palpation in twenty cases, but in the remaining fifty-five no note was made as to its condition; thirty patients not operated on were not considered from clinical examination to have pancreatic disease. A lesion of the pancreas was diagnosticated in fifteen patients who gave negative findings; eleven individuals with chronic interstitial pancreatitis were found at operation in which the pancreas was stated to have been abnormally enlarged, firm, or nodular; two patients with carcinoma of the pancreas (one diagnosis being confirmed at postmortem examination) and one with acute pancreatitis failed to give positive "C" crystals. The single case of cyst of the pancreas gave a negative reaction before operation, but twenty-one days after, while the rubber-tube drainage was still in place, the reaction was decidedly positive. In thirty-four cases the Cammidge reaction was positive. Of these, fourteen patients came to operation and one to postmortem examination. The diagnosis of chronic pancreatitis was confirmed by palpation

in seven cases, and in one case of acute exacerbation of a chronic pancreatitis the diagnosis was confirmed microscopically after death. In two cases the pancreas was normal to palpation, that is, one case of chronic cholecystitis and one case with a stone occluding the ampulla of Vater. No note was made of the condition of the pancreas in the four other cases in which the patients were not operated on—subhepatic abscess following perforation of the gall-bladder, cholelithiasis with 258 stones in the common duct, empyema of the gall-bladder, and abdominal adhesions. Twenty patients with a positive reaction were not operated on. In seven cases a lesion of the pancreas was diagnosticated clinically as follows: three cases of chronic pancreatitis, one of acute pancreatitis and one of carcinoma of the stomach and pancreas.

The remaining thirteen patients were not considered to have pancreatic disease. These cases were as follows: Neurasthenia, catarrhal jaundice, four cases of cholelithiasis, chronic cholecystitis, acute cholecystitis, diabetes, epigastric distress (not diagnosticated), duodenal ulcer, carcinoma of the stomach, and carcinoma of the liver. Thus, in the thirty-four cases in which the Cammidge reaction was positive, a diagnosis of pancreatic disease was made in fifteen cases, or 44 per cent. The positive reaction in 33 per cent. of the patients with carcinoma of the pancreas agrees with Cammidge's report. Kinney has had cases of both acute and chronic pancreatitis in which the Cammidge reaction has been negative. There were forty-three cases in the series which came to operation or postmortem examination, in which the condition of the pancreas was definitely recorded. The pancreas was found to be normal in twenty-two cases, twenty of which gave a negative, and two a positive Cammidge reaction; eighteen cases of chronic interstitial pancreatitis gave eleven negative and seven positive findings. The acute exacerbation of a chronic pancreatitis gave a positive reaction, while the cyst and carcinoma were negative.

Laryngoscope, St. Louis

November

- 48 Infectious Diseases of the Labyrinth. H. Neumann, Vienna.
- 49 Osteomyelitis of the Temporal Bone. C. W. Richardson, Washington, D. C.
- 50 Exfoliation of the Bony Tympanic Wall Including the Major Portion of the Semicircular Canals. J. A. Stucky, Lexington, Ky.
- 51 Bacteriologic Examination of the Tonsillar Crypts at the Manhattan Eye, Ear and Throat Hospital, New York. J. G. Dwyer and Miss Gignoux, New York.
- 52 Subcutaneous Surgical Emphysema. B. D. Parish, Philadelphia.
- 53 Foreign Body Removed from the Bronchus. S. Yankauer, New York.
- 54 Mishaps in Tracheobronchoscopy and Esophagoscopy. S. H. Large, Cleveland.
- 55 Bismuth Paste in Chronic Suppurative Diseases of the Nose, Accessory Sinuses, Ears, and Mastoid Process. J. C. Beck, Chicago.
- 56 Complicated Cerebral Case with Pathologic Findings. C. F. Welty, San Francisco.

Annals of Surgery, Philadelphia

December

- 57 Treatment of Scalping Accidents. J. S. Davis, Baltimore.
- 58 Responsibility of the Tonsil in Tuberculous Adenitis. F. S. Mathews, New York.
- 59 *Treatment of Tuberculous Glands of the Neck. E. S. Judd, Rochester, Minn.
- 60 Metallic Foreign Bodies in a Bronchus. G. R. Fowler, Brooklyn, N. Y.
- 61 *Sarcoma of the Clavicle: End-Results Following Total Excision. W. B. Coley, New York.
- 62 Transgastric Excision of Calloused Ulcer of the Posterior Wall of the Body of the Stomach. W. J. Mayo, Rochester, Minn.
- 63 *Relation Between Appendicitis and Disturbance in the Gastro-duodeno-Hepatico-Pancreatic Physiologic System. W. C. MacCarty and B. F. McGrath, Rochester, Minn.
- 64 *Technic of Appendicostomy. F. C. Yeomans, New York.
- 65 Anomalous Renal Arteries and Their Relation to Hydronephrosis. A. L. McDonald, Grand Forks, N. Dak.
- 66 *Anatomy and Treatment of Undescended Testicle. A. V. Moschcowitz, New York.
- 67 Resection of the Male Rectum for Cancer. W. C. Lusk, New York.
- 68 Fracture of the Tarsal Scaphoid. W. R. MacAusland and B. E. Wood, Boston.

59. Tuberculous Glands of Neck.—During the past fifteen years there have been performed at the Rochester clinic 668 operations for complete excision of glands of the neck, sixty-two operations for partial excisions and curetting, and twenty-four excisions of tuberculous glands in the axilla in patients

who also had tuberculous cervical glands. In all, 649 patients were operated on, on one side at a time. Of these, nineteen have since died of pulmonary tuberculosis, and nine have died of tuberculous lesions elsewhere. Ten of the patients had pulmonary tuberculosis at the time of the operation. In operating on these individuals, it has been the aim to do a thorough and radical excision of the groups involved. Having made the incision from the mastoid to the clavicle, the skin and platysma are reflected well forward and backward. The sternomastoid is not cut except a few posterior fibers of its upper attachment on the mastoid process. The entire posterior border of this muscle is freed and the fascia dissected from it. The dissection is started at the lower angle underneath the clavicular attachment. The omohyoid pulley is exposed and this is the lowest point of the dissection. The glands are all left together in the fascia as much as possible. Care should be taken to avoid important nerves. Lymphatic glands within the parotid should be shelled out in a manner that will not interfere in any way with the branches of the seventh nerve.

Having completed the dissection, if caseous material has soiled the wound, it should be mopped out with tincture of iodine well diluted with water; or, as suggested by von Eiselsberg, the entire wound may be mopped for an instant with boiling water. Drainage should be provided through a stab incision; preferably, a small rubber tube split spirally. This drain is for the purpose of withdrawing serum and is removed in from 24 to 48 hours. The platysma muscle is carefully sutured with fine catgut, and the skin edges approximated by a subcuticular suture approximating as much of the cut of the skin as possible, giving the appearance of a ridge. A rather small, snugly fitting gauze dressing is used. The next day the patient is gotten up and encouraged to move the head freely to prevent any stiffening of the muscles. From this time general outdoor treatment is advised. In this series of cases there has been no mortality due directly to the operation. One patient died a few weeks after the operation of general tuberculosis, and a second died in about three months from diffuse sepsis.

61. **Sarcoma of the Clavicle.**—In view of the favorable results obtained in the few cases of sarcoma of the clavicle, and the much larger number of cases of sarcoma of the long bones in general, by the use of the mixed toxins of erysipelas and *Bacillus prodigiosus* immediately after operation, as a prophylactic, Coley believes that such use would seem to be strongly indicated as a routine measure. The histories of sixty-three cases are given in full.

63. **Appendicitis and Associated Disturbances.**—The possibility of an etiologic relationship between the appendix and pathologic conditions in the stomach, duodenum, liver, bile passages and pancreas arose as the result of an investigation by MacCarty and McGrath of the embryology, anatomy and physiology of these organs in view of clinical experience and pathologic findings in studying the material from 216 gastrectomies, 365 cholecystectomies, 5,000 appendectomies, three duodenal ulcers and the experimental experience of Cannon, Litthauer, Tsunoda, Roger, and others, all of which, when taken together, strongly suggest that the appendix is at least a part of the etiology of conditions which have been and are being treated as local conditions but which may possibly arise secondarily. Autopsy has shown that duodenal ulcers when they occur at or near the papilla of Vater are sometimes, if not always, associated with cholecystitis, and occasionally with chronic interstitial hepatitis (cirrhosis). Clinical experience presents strong evidence that there are gastric disturbances which are relieved and often completely dissipated by the removal of the appendix. Examination of the appendices removed in association with "pyloric spasm," gastric and duodenal ulcers, cholecystitis and cholelithiasis shows that there is a higher percentage of appendices with partially or completely obliterated lumina in all of these conditions, than at general autopsy or at operations for appendicitis. It was found that of 365 patients in whom cholecystectomy was performed, 13 per cent. gave definite histories of pain and soreness in the region of the appendix. In fifty-nine of these patients with cholecystitis the appendices were removed and

69 per cent. showed undoubted gross or microscopic evidence of inflammation, varying from a chronic catarrhal condition to complete obliteration and periappendicitis.

In the examination of 2,000 appendices with the histories, 52 per cent. of 175 patients with cholecystitis with and without stones gave histories of pain in the region of the appendix. In 1,147 histories, which include all the cases of appendicitis and appendices removed during operations, for conditions other than cholecystitis with or without stones, there was a history of pain in the epigastrium or right hypochondrium in 13 per cent. In 9.4 per cent. there was pain in the abdomen and in 14.6 per cent. pain in the abdomen was radiated to and became localized in the region of the appendix.

64. Abstracted in THE JOURNAL, July 30, 1910, p. 430.

66. **Treatment of Undescended Testicle.**—Moschcowitz has operated on eighteen patients by the Bevan method. Primary union resulted in every instance; there is no recurrence of the hernia; the testicle is freely movable and in the very bottom of the scrotum. In other words, he says, all these patients can be legitimately regarded as completely cured, so far as the descent of the testicle and the hernia is concerned.

American Medicine, Burlington

November

- 69 The Cystoscope in Practice. E. W. Pinkham, New York.
- 70 A Life of Intense Suffering and of Unrealized Aims Due to Eyestrain. G. M. Gould, Ithaca, N. Y.
- 71 Goiter and Its Treatment. J. W. Solow, Brooklyn, N. Y.
- 72 Myxosarcoma of the Right Frontal Lobe; Extensive Degeneration in Cord. G. E. Price, Philadelphia.
- 73 A Sanatorium School for Consumptives. D. L. Sohn, New York.
- 74 Physiologic Action and Standardization of Digitalis. O. Hensel, New York.

Cleveland Medical Journal

December

- 75 *Psychoses Associated with Acute Infectious Diseases. A. M. Barrett, Ann Arbor, Mich.
- 76 Trend of Modern Research on the Nature of Ferment Action. J. J. R. Macleod, Cleveland.
- 77 Lacerations of the Cervix. N. C. Yarian, Cleveland.
- 78 Vaccine Therapy in Lung Abscess. P. A. Jacobs, Cleveland.
- 79 Eight Cases of Syphilis Treated with Salvarsan (606). W. T. Corlett, Cleveland.
- 80 *Surgical Approach to the Lower Ureter. F. C. Herrick, Cleveland.
- 81 Method of Preparing Lantern Slides in Color. A. H. Tashjian, Cleveland.

75. **Psychoses in Acute Infections.**—Five cases reported by Barrett give some idea of the multiformity of the clinical symptomatology which may occur in the psychoses caused by infectious diseases. Common to the cases given only is the disturbance of the consciousness. A review of a large number of cases reported as psychoses of acute infectious diseases shows that there are no specific clinical symptoms which distinguish the group of psychoses from non-infectious conditions. The most that can be said is that it is true in general that at the same stage of an infectious disease, psychoses of the same type are prone to occur. The clinical picture is greatly influenced by the intensity of the infection. The more acute the infectious disease, the more turbulent are the physical symptoms. This is borne out in Barrett's cases. The only case in which definite delusions were present ran a subacute course of seven months, while the case in which there was the greatest excitement and most severe disturbance of consciousness was one of puerperal infection which ran its course in twelve days. There is a certain harmony in this series of cases between the clinical course and the pathologic findings. The case which ran the longest and mildest course showed in the brain the less acute changes. Barrett did not find in this case the same severe distinctive process affecting the nerve cells as in the other cases. The most severe changes in the cortex were found in a case of delirium in tuberculosis. Two cases of typhoid psychoses are specially interesting from the similarity of the neurologic disturbances in each, and one of these, by reason of the occurrence of the mental disturbance nearly ten weeks before the physical signs of the disease were observed. The other typhoid case has a point of interest in the occurrence of an infectious psychosis without fever, yet with the anatomic alterations which can be experimentally produced by increasing the body temperature.

80. Surgical Approach to Lower Ureter.—The incision recommended by Herrick is made on an imaginary line drawn from the inner lip of the anterior superior spine to a point above the opposite spine of the pubis, say the external abdominal ring, starting from $1\frac{1}{2}$ to 2 inches from the anterior superior spine and extending from 3 to $3\frac{1}{2}$ inches to the rectus muscle. This strikes the edge of the rectus from 1 to $1\frac{1}{2}$ inches above the entrance into it of the deep epigastric artery. The tendinous external oblique is split in the line of the incision, the internal oblique and transversalis are likewise split parallel to their fibers and parallel to the nerve trunks which lie between them. The peritoneum is dissected up with the fingers from the side and floor of the pelvis. A broad retractor, placed at the lower end of the incision, gives good access to the deep pelvis. In finding the ureter, the finger is carried to the bifurcation of the common iliac and then turned up against the under surface of the peritoneum where, closely adherent to the peritoneum and covered by some of its reflected fibers, will be felt the ureter. By cutting the fibers the ureter is separated from the peritoneum for an inch or two, a strip of gauze is passed behind it and gentle traction made when the ureter will stand out as a ridge extending to the base of the bladder. Herrick has, without difficulty, removed stones impacted just above the bladder but inaccessible through the cystoscope and feels that since all structures are returned to their normal state this route is an ideal one.

Journal of the Delaware State Medical Society, Wilmington

December

- 82 Home Treatment of Pulmonary Tuberculosis. G. B. Pearson, Wilmington.

Journal of the Arkansas Medical Society, Little Rock

November

- 83 *Modern Methods of Treatment for Severe Prolapse of the Uterus. H. L. Crossen, St. Louis, Mo.
84 *Infant Mortality. J. T. Clegg, Siloam Springs.
85 *Acute Otitis Media and Mastoid Abscess in Children. R. Caldwell, Little Rock.

83, 84 and 85. Abstracted in THE JOURNAL, June 11, 1910, pp. 1991 and 1992.

Texas State Journal of Medicine, Fort Worth

December

- 86 *Use of Drugs as Stimulants in Accidents Occurring During Anesthesia. O. H. Plant, Galveston.
87 *Position for Combined Abdominal and Pelvic Outlet Operations. A. C. Scott, Temple.
88 Organization and Public Education. T. C. Merrill, Colorado.
89 General Anesthesia. F. B. Bryan, Childress.

86. Use of Drugs as Stimulants in Accidents.—Of the drugs investigated by Plant, a combination of cocaine and strychnin was by far the most efficient in producing recovery; nine out of twelve of the animals operated on recovered without any other restorative measure than the intravenous injection of these drugs. In ether anesthesia, this was the only series in which more than one animal was restored. This fact is not hard to explain, because in ether anesthesia the respiration is depressed to a much greater extent than the circulation, so that a respiratory stimulant is the chief need. The average fall in mean pressure in twenty-three experiments where ether was administered amounted to 23 per cent., while in twenty-four experiments in which chloroform was used it amounted to 74.6 per cent., more than three times as much; the force of the heart (pulse pressure) was diminished 1.7 per cent. in ether anesthesia, and 62.8 per cent. in chloroform anesthesia. These figures show that in ether anesthesia the circulation was not greatly depressed in these experiments at the time the respiration stopped, and that a respiratory stimulant is the prime necessity, so far as drugs are concerned in ether anesthesia.

Plant regards cocaine as probably the most powerful of the respiratory stimulants and combined with strychnin, which stimulates both respiratory and cardiac centers, it meets the indications better than any of the stimulants commonly employed in ether and chloroform anesthesia. In all accidents during anesthesia, artificial respiration is by far the most important and efficient restorative, and the drug treatment is only accessory. This is especially true in ether

narcosis, where respiration is depressed to a much greater extent than the circulation. Neither adrenal preparations nor atropin, nor a combination of the two, had any marked beneficial effect in ether anesthesia. In chloroform anesthesia, however, the circulation is depressed to almost as great an extent as the respiration, and adrenal preparations, which raise the blood-pressure chiefly by causing constriction of the blood-vessels were found to have some value, provided the cardiac inhibition which they produce does not offset the stimulating effect. When they are injected directly into the circulation the slowing of the heart is very pronounced, but it is probable that if their effects were produced slowly (as when absorbed from hypodermic injection) this effect would be less marked. Combined with atropin, which prevents the slowing of the heart and acts to some extent as a stimulant itself, adrenal preparations have greater value in chloroform anesthesia than when used alone.

The value of atropin as a restorative was found to be limited to chloroform anesthesia, and here the beneficial effects are due to the fact that this drug removes cardiac inhibition. The average decrease in pulse-rate in twenty-four experiments where chloroform was administered amounted to 43.7 per cent. The slowing of the pulse in chloroform anesthesia is quite variable; in some of the experiments it was less than 10 per cent., while in others it amounted to as much as 75 per cent. When marked inhibition occurs, atropin causes a sharp rise in pressure by increasing the pulse-rate, and this rise in pressure serves in itself to stimulate the respiratory center. In four experiments in which recovery occurred there was marked inhibition before the injection was made, and in the animal that did not recover, there was only slight change in the pulse-rate. Camphor and digitalis, although good heart stimulants, Plant regards as of not much use during anesthesia, because they act slowly and their stimulating effect is limited to the heart.

87. Combined Abdominal and Pelvic-Outlet Operations.—By the use of any metal knee-holder which fits comfortably in the popliteal space, Scott secures an exposure of the abdomen in an elevated position and at the same time exposing the pelvic outlet. This is accomplished by having the popliteal knee-holder hinged on a short, upright bar, broadened and slotted at the lower end to slide, with a set screw, on a horizontal metal bar, which in turn is fixed to a strong cylindrical upright bar, sliding in a screw clasp at the side of the operating table. The sliding on the horizontal bar allows adjustment for the varying lengths of patient's thighs. The cylindrical sliding upright bar at the side of the table permits the thighs to be moderately flexed or fully extended, abducted or adducted at will. A piece of bandage loosely wound about each ankle is tied to any convenient point below the corner of the table, and another is placed above each knee, to prevent extension and elevation of the knees, thus securely holding them in their respective knee-holders. Any modern operating table will serve the purpose of these attachments and enable one to secure the desired combined position if it has a pivotal point about the center permitting the entire surface of the table to be raised or lowered at will.

Kentucky Medical Journal, Bowling Green

November 15

- 90 Diagnostic Significance of Headache to the Internist. J. W. Kincaid, Catlettsburg.
91 Diagnostic Significance of Headache to the Physician. A. D. Willmoth, Louisville.
92 Diagnostic Significance of Headache to the Specialist in Eye, Ear, Nose and Throat Diseases. M. C. Dunn, Henderson.
93 Present Status of Serotherapy and Vaccine Therapy. F. H. Montgomery, Danville.
94 Necessity for Properly Selected and Compensated City and County Health Officers. J. N. McCormack, Bowling Green.

December 1

- 95 *Kentucky's Opportunity for Vital Statistics—How the Medical Profession Can Aid. C. L. Wilbur, Washington, D. C.
96 *Nature and Treatment of Splenic Anemia. B. E. Giannini, Coalmont.
97 *Diagnosis and Medical Treatment of Cirrhosis of the Liver. G. W. Payne, Bardwell.
98 *Diagnosis and Treatment of Cholecystitis. I. Abell, Louisville.
99 Abscess of the Liver: Diagnosis and Treatment. J. I. Rathburn, Russell.
100 Etiology, Diagnosis and Treatment of Pellagra. W. F. Stirman, Owensboro.
101 *State Care of the Insane. C. Pope, Louisville.

- 102 Electricity in Diagnosis and Treatment of Disease. J. J. Rodman, Owensboro.
103 Water Supply and Sewage Disposal. P. Hansen, Bowling Green.
104 *Medical Expert Testimony. E. J. McDermott, Louisville.

95 and 96.—Abstracted in THE JOURNAL, Oct. 15, 1910, pp. 1400 and 1401.

97, 98, 101 and 104. Abstracted in THE JOURNAL, October 22, pp. 1492, 1493 and 1495.

American Journal of Surgery

December

- 105 Operative Treatment of Cranial Fractures. F. Hartley, New York.
106 Diseases of Bone and Their Differentiation by Means of Roentgen Rays. G. E. Pfahler, Philadelphia.
107 *Contusion of the Back and Its Complications. W. Lathrop, Hazleton, Pa.
108 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
109 *Acute Angulation and Flexure of the Sigmoid. A Causative Factor in Epilepsy. W. H. Axtell, Bellingham, Wash.
110 A Practical Syringe for Intramuscular Injections. V. C. Pederson, New York.

107. **Contusion of the Back.**—Summarizing his paper, Lathrop says: In simple contusions of soft parts, we should promote the absorption of extravasated blood by cold, elevation and pressure; but if at all extensive, or with marked fluctuation, immediate incision, under aseptic conditions, will give the best results. Rest is of paramount importance. Massage of contused parts, such as the elbow, shoulder, knee, ankle and hip, is of great value after the acute stage is past. Lead and opium, arnica, alcohol, and sublimate applications are all used more or less, and no doubt with benefit. In severe injury involving not only the skin, but the muscles beneath, and possibly the bony structures as well, the best management is through examination under anesthesia, and treating the case as indicated—careful cleansing, suturing of any torn muscles, and provision for drainage. When sloughing occurs—and it will in many instances—the area should be well protected, and treated as any other granulating surface. In regard to the spine, any injury must be very severe to involve its contents, and must be regarded as serious; it will require time for repair, or improvement, and must be treated largely symptomatically. The prognosis should be guarded at all times.

109. **Flexure of Sigmoid.**—From an experience in the examination of thirty-one cases of epilepsy, Axtell is convinced that constipation and intestinal toxemia are minor factors in causing epilepsy. Of sixty-seven individuals with obstinate and persistent constipation examined and treated by the sigmoidoscope, forty-three, or 64 per cent., had acute flexure at the recto-sigmoidal juncture. Of these forty-three patients, eight had epilepsy. A remarkable fact was that this condition should be present in every one of the epileptics. Another remarkable feature was that the prolapsed loop of the sigmoid was inordinately impacted in every instance. Of the eight cases six were males, two females; convulsions began eight years before in one; ten years in one; fourteen years in one; four years in one; twelve years in two; time not recorded in two. All the cases had acute angulation of a severe type; all had impaction of the sigmoid of an inordinate character. The cecum in every case was enlarged and tympanitic. In all, the rectal mucous membrane was inflamed and the veins were more or less engorged. One patient had a large ulcer just below the angulation; two had adhesions of the impacted and prolapsed loop of the sigmoid; three had, in addition to the angulations, a thickening of the bowel wall at the point of flexure and an invagination of the mucous membrane to a greater or less degree; two had retroverted uteri, and in one the uterus was adherent from an attack of pelvic peritonitis.

Virginia Medical Semi-Monthly, Richmond

December 9

- 111 Etiology and Symptoms of Arteriosclerosis. L. T. Royster, Norfolk.
112 Pathology of Arteriosclerosis. H. T. Marshall, Charlottesville.
113 Treatment of Arteriosclerosis. W. S. Gordon, Richmond.
114 Diagnosis and Treatment of Pyelitis. H. A. Fowler, Washington, D. C.
115 Peritonitis and Its Treatment. S. McGuire, Richmond.
116 Climatology of the Seaboard Air Line Region. E. Gladmon, Southern Pines, N. C.

California State Journal of Medicine, San Francisco

December

- 117 Enucleation of the Tonsil from the Standpoint of the General Medical Man. L. Porter, San Francisco.
118 Enucleation of the Tonsil, a Surgical, Not a Radical Procedure. A. J. Houston, San Francisco.
119 Pathologic Histology of the Tonsil. H. Hastings, Los Angeles.
120 Tendon Transplantation. C. Kurtz, Los Angeles.
121 Strangulated Hernia. A. M. Taylor, San Francisco.

Journal of the Missouri State Medical Association, St. Louis

December

- 122 *Clinical Recognition of the Scaphoid Type of Scapula and of Some of Its Correlations. W. W. Graves, St. Louis.
123 Rupture of the Intestine from Abdominal Trauma. H. P. Kuhn, Kansas City.
124 *Technic of Immediate Closure of Bladder Following Suprapubic Cystotomy. C. E. Burford, St. Louis.
125 Bladder Calculi. E. G. Mark, Kansas City.
126 What Shall We Do With Patients With Advanced Uterine Cancer? F. Hinchey, St. Louis.
127 Prevention of Blindness. J. Green, St. Louis.

122. Published in THE JOURNAL, July 2, 1910, p. 12.

124. **Immediate Closure After Cystotomy.**—Instead of immediate, complete closure of the suprapubic wound being a curiosity, Burford holds that it should be the routine procedure in the majority of cases. Constant drainage of the bladder preventing distention and sudden tenesmus, is a necessity if integrity of a freshly sutured vesical wall is to be maintained. Instead of the perineal or suprapubic drain, the method under discussion involves the use of the natural channel of the urethra for a large caliber drainage tube. The character of cases in which this is indicated is as follows: (1) Following removal of all benign and many malignant growths of the bladder when hemorrhage is not great; (2) following all cases of suprapubic cystotomy for retrograde catheterization of impassable stricture of urethra; (3) following many cases of suprapubic lithotomy; (4) following many cases of suprapubic prostatectomy in which the cystitis is not too severe.

Ohio State Medical Journal Columbus

December

- 128 Etiology, Results and Treatment of Movable Kidney. R. E. Skeel, Cleveland.
129 The Movable Kidney from a Medical Standpoint. M. J. Lichty, Cleveland.
130 The Movable Kidney from the Standpoint of the Genito-Urinary Surgeon. E. O. Smith, Cincinnati.
131 Hyoscin Hydrobromid as an Adjunct to Cocain Anesthesia, and as a Preventive to Cocain Poisoning. M. Metzenbaum, Cleveland.
132 Social and Economic Value of Efficiency in Medicine. F. P. Lewis, Buffalo, N. Y.
133 Medical Inspection of Schools. J. H. McHenry, Cleveland.
134 Malingering and Its Detection. E. E. Gaver, Columbus.
135 Tetany of Children. D. S. Hanson, Cleveland.

Bulletin of the Johns Hopkins Hospital, Baltimore

December

- 136 *Electrocardiography and Phonocardiography. L. F. Barker, Baltimore.

136. **Electrocardiography and Phonocardiography.**—This is a collective review of the work done and of the instruments used in the study of the differences in electric potential which occur in different parts of the heart-muscle preceding and during their activity.

Journal of the Tennessee State Medical Association, Nashville

December

- 137 Treatment of Syphilis by Salvarsan. W. Litterer, Nashville.
138 Report of 503 Cases Treated with Salvarsan. W. Wechselmann, Berlin, Germany.
139 Report of 109 Cases of Syphilis Treated with Salvarsan. A. Glueck, Sarajevo, Bosnia.
140 Subphrenic Abscess. A. B. Cooke, Nashville.
141 Pathologic Report. W. Litterer, Nashville.
142 A Case of Subphrenic Abscess. J. J. Waller, Oliver Springs.
143 Plea for a Higher Standard of Medical Education. A. McCoy, Jackson.

Journal of the Kansas Medical Society, Kansas City

December

- 144 *Necrobacillosis of the Skin. C. M. Stemen, Kansas City.
145 Bacteriology of *Bacillus Necrophorus*. F. W. Shaw, Kansas City.
146 Appendicitis. C. R. Lytle, Durham.
147 Etiology and Treatment of Ulcerations of the Cornea. W. H. Graves, Pittsburg.
148 Cleft Palate. G. W. Jones, Lawrence.
149 The New Profession. H. B. Caffey, Pittsburg.

144. **Necrobacillosis of the Skin.**—The case cited by Stemen was caused by the *Bacillus necrophorus*, the condition being identical with one found on the lip and legs of the sheep. The ulceration in this case was on the back of the hand and was about $2\frac{1}{2}$ inches broad by 2 inches in length, and raised at its highest about $\frac{3}{4}$ of an inch. The sore consisted of blebs, each one, seemingly, having its own peculiar appearance, some gray and some a bluish red. The inflammation extended to the shoulder. The entire arm was rubbed thoroughly twice daily with unguentum Credé. The ulceration proper was treated with the bichlorid pack and a 20 per cent. solution of ichthyol applied to the parts adjacent to the ulceration. The constitutional treatment consisted of 20 grains of iodid of potassium 3 times daily, with 1 teaspoonful of salts morning and night. The man made an uninterrupted recovery and in three weeks the wound had entirely healed.

Colorado Medicine, Denver

December

- 150 A Fatal Case of Lupus Erythematosus. C. B. Van Zant, Denver.
- 151 The Dwarf Tapeworm in American Children. J. W. Ames, Denver.
- 152 Transmission of Contagious Diseases. M. Kleiner, Denver.
- 153 A Dietary Study in the National Swedish Sanatorium, Englewood, Colo. C. D. Spivak, Denver.
- 154 Retropharyngeal Abscess. W. C. Banc, Denver.

Iowa Medical Journal, Des Moines

December

- 155 *Diagnosis of Pancreatic Diseases. D. C. Brockman, Ottumwa.
- 156 Postoperative Treatment of Laparotomy. J. L. Augustine, Ladora.
- 157 Treatment of Diffuse Septic Peritonitis. V. Knott, Sioux City.
- 158 Milk Examination. S. R. Klein, New York.
- 159 Surgical Procedure in Contracted Pelvis. H. G. Welpton, Des Moines.
- 160 A National Department of Public Health Necessary for Prevention and Control of Tuberculosis and Other Communicable Diseases. G. A. Smith, Clinton.

155. **Diagnosis of Pancreatic Diseases.**—Brockman urges an examination of the pancreas in every examination for pathology in the upper abdomen, in cases in which the biliary apparatus is diseased, in cases of rapid emaciation without evident cause, in every case of diabetes in the adult, in all cases of profound abdominal disease accompanied by ileus, collapse, vomiting and pain in upper abdomen, in all cases of painless jaundice with enlarged gall-bladder and loss of weight which will prove to be either chronic sclerosing of the head of the pancreas, due to chronic inflammation, or cancer of the head of the organ.

Journal of the Medical Society of New Jersey, Orange

December

- 161 *Relation and Attitude of the Public To and the Obligation of the Physician in the Development of Communicable Diseases. P. Marvel, Atlantic City.
- 162 Adenoids and Their Influence on the Mental Condition of the Patient. J. Koppel, Jersey City.
- 163 *Sulph-hemoglobinemia. T. W. Clarke, New York, and R. M. Curtis, Paterson, N. J.
- 164 Our Present Knowledge of Anterior Poliomyelitis. P. Boysen, Riverton.

161. Abstracted in THE JOURNAL, Aug. 6, 1910, p. 527.

163. Also published in the *Medical Record*, Dec. 3, 1910; abstracted in THE JOURNAL, Dec. 17, 1910, p. 2181.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

December 15

- 165 Cystitis and Pylecystitis in Infants and Young Children. W. R. Ramsey, St. Paul.
- 166 Teaching of Hygiene in the Grades. F. E. Lurton, Anoka.
- 167 Malignant Endocarditis with Recovery. H. L. Staples, Minneapolis.

West Virginia Medical Journal, Wheeling

December

- 168 Victories to Be Achieved and Problems to Be Solved by Medicine. W. H. Sharp, Parkersburg.
- 169 The West Virginia Physician and Tuberculosis. C. A. McQueen, Charleston.
- 170 Management of Normal Labor. H. W. Daniels, Elkins.
- 171 Preservation and Repair of the Perineum. W. A. McMillan, Charleston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

November 26

- 1 *Use of Elastic Traction and Elastic Pressure in Surgery. G. A. Wright.
- 2 High Blood-Pressure in Arteriosclerosis. R. D. Rudolf.
- 3 *Reaction of the Heart to Digitalis When the Auricle is Fibrillating. T. Lewis.
- 4 *Variations of the Fermentation Properties of *B. Typhosus*. W. J. Penfold.
- 5 Diaphragmatic Hernia in an Adult. E. Ringrose.
- 6 Diagnosis and Treatment of Infective Labyrinthitis. R. Bárány, S. Scott and C. E. West.
- 7 Connection Between Irritation of the Mucous Membranes Throughout the Body and Middle-Ear Catarrh. M. Hovell.
- 8 *Practicability of Treating Meningitis by Lavage of the Cerebrospinal Subarachnoid Spaces. J. S. Barr.
- 9 Ossiculectomy in Chronic Suppurative Otitis Media. M. Yearsley.
- 10 Deafness and Disease of the Ear in Relation to the Public Services and Insurance. J. Horne.
- 11 Aural Tuberculosis in Children. W. Milligan.
- 12 Congenital Atresia of the Choanae. J. S. Fraser.
- 13 Headaches in Association with Obstruction in the Nasal Passages. L. H. Pegler.
- 14 Tuberculin in Laryngeal Tuberculosis. W. C. Wilkinson.
- 15 Vasomotor Rhinitis. H. S. Birkett, E. B. Waggett and A. Francis.
- 16 Cancer of the Throat. R. H. S. Spieer.

December 3

- 17 Prophylaxis in Obstetrics. A. W. Russell.
- 18 Treatment of Hypertension Based on Consideration of the Cause. H. B. Shaw.
- 19 *Estimation of Blood-Pressure by the Sphygmo-Oscillometer. K. Eckenstein.
- 20 Control of Venereal Diseases at Their Source in Civil Communities. H. C. French.
- 21 Combined Use of Spinal and General Anesthesia. A. E. Johnson.
- 22 Thyroid Extract in Rheumatoid Arthritis. H. Wilson.
- 23 A Case of Intestinal Reflex. E. S. Stevenson.
- 24 Proof of the Endemic Origin of Yellow Fever in West Africa. R. W. Boyce.
- 25 Fatal Trichoccephaliasis in a Child. J. G. S. Jamieson and J. M. Lauder.

1. **Elastic Traction.**—The use of rubber as an orthopedic agent is discussed by Wright. In cases of flexion of joints, when no actual ankylosis is present, but immediate straightening by force is undesirable, he thinks no more valuable means of rectification exists than elastic tension. First, rubber has the advantage over steel springs in that its tension can be employed through a much wider range, and the strength of the tension is capable of more ready adjustment. It is much easier to apply slighter degrees of traction or pressure, much easier to arrange for the exact line of traction required, and, in addition, any apparatus needed may be readily and cheaply improvised. The appliances are exceedingly cheap, easily managed, and easily replaced. A little ingenuity and some rubber cord is the stock-in-trade, though patience and care are, of course, also necessary, as living tissue cannot be dealt with quite as if it were a question of cabinetmaking or upholstering. Pressure sores are a possible result of mismanagement or neglect, and are easier to make than repair.

For flexed joints that require straightening, all that is necessary in many cases is the application of a straight splint across the angle of flexion, secured to the limb above and below the joint, but not so tightly as to prevent the lower segment from slipping through the bandages as the limb straightens. These bandages may be of any material, but it is better to use flannel or some slightly elastic material for the distal segment of the limb. The joint is left bare at this stage. Next an elastic bandage is carried over the joint and round the splint so as to exert the desired pressure in the required direction. The angle of flexion should be measured before and at short intervals during the treatment. A daily removal of the elastic is necessary at first to make sure that there is no excessive pressure. Exactly similar appliances may be used to prevent or to correct cicatricial contractions in suitable cases. It is a good plan to substitute elastic traction applied to the lower segment of the limb, either as a temporary substitute or an alternative to the elastic pressure, if, for any reason, direct pressure over the joint is inadvisable. A good example of the use of elastic traction is seen in Bryant's double splint. In fracture of the patella, elastic traction may be used to approximate the fragments by steadying the lower one and drawing the upper downward toward

it. In rachitic deformities the use of elastic pressure finds a very wide application. For curvatures of the shafts of the bones of the leg a straight splint applied on the concave side with elastic pressure over the convexity of the curve will straighten a large proportion of these curved limbs. Of course, the more rapidly the deformity is increasing the more likely is the use of elastic pressure to succeed.

For the anterior curve of the tibia the tension of the calf muscles makes the use of elastic pressure more tedious, and in some instances nothing but cuneiform osteotomy or a splice section will succeed. For genu valgum in slight cases an outside splint applied on similar lines is efficient, but in severe cases there is great difficulty in maintaining steady pressure by reason of the tendency of the limb to rotate outward, and so take off the tension. In the great group of deformities classed as flat-foot and talipes, there is ample scope for the use of elastic traction. For paralytic conditions the elastic traction is a most useful adjunct to, or, in some circumstances, substitute for tendon grafting.

3. Reaction of the Heart to Digitalis.—Lewis suggests that the ventricular rate is retarded in clinical auricular fibrillation by the action of digitalis on the junctional tissues, the functions of which are already in a depressed state.

4. Fermentation Properties of Bacteria.—Penfold pleads for the value of the fermentation tests in elucidating the laws of bacterial variation. They are easily applied, and if once understood, he thinks, would probably explain many of the most difficult problems in connection with virulence and other properties of microorganisms.

8. Treatment of Meningitis.—The experiments carried out by Barr were made on the body of a child, which had died of epidemic cerebrospinal meningitis. Lumbar puncture was performed, and the hollow needle left *in situ*. A small quantity of turbid fluid escaped but soon ceased to flow. Through a trephine opening in the skull, made above and behind the left ear, a cannular trocar was introduced into the lateral ventricle, and, on removing the trocar, a small quantity of turbid fluid escaped through the cannula. By means of a rubber tube attachment and a glass funnel, held 2 in. above the head, water tinted with carbol fuchsin was allowed to flow into the ventricle. Almost immediately turbid fluid began again to drop from the needle in the lumbar region, and in less than a minute the escaping fluid was found to have a reddish tinge; it continued to flow as long as the fluid entered the lateral ventricle. The higher the elevation of the glass filler the faster became the flow of stained fluid from the needle, and the flow was allowed to continue for over a quarter of an hour. The brain was then removed and carefully examined, when the course of the fluid introduced into the ventricle could easily be traced by the red coloration into the fourth ventricle via the foramen of Monro, third ventricle and aqueduct of Sylvius. From the fourth ventricle the fluid found exit into the subarachnoid space (cerebello-medullary cistern) through the foramen of Magendie, and possibly also through the two lateral apertures. It stained the entire cerebello-medullary cistern, passed forward into the interpeduncular cistern, upward along the Sylvian fissures over the anterior ends of the temporosphenoidal lobes, and even along the vaginal sheaths of the optic nerves. The course of the colored fluid could also be traced downward along the spinal subarachnoid space.

The same experiment was repeated on several other fresh subjects with similar results. This at least established the fact that fluid may pass uninterruptedly from the ventricular system into the basal and spinal subarachnoid spaces. A case (a boy 13 years of age) of advanced purulent leptomeningitis, secondary to a chronic purulent ear affection, came under Barr's care. The symptoms were typical of the worst form of the disease, and lumbar puncture verified the diagnosis, the fluid withdrawn being turbid, containing streptococci in chains, as well as pus cells. The radical mastoid operation, including the opening of the dura mater and the employment of such therapeutic measures as hexamethylenamin, 10 grains 4 times daily, repeated lumbar puncture, and several subcutaneous injections of antistreptococcus serum, led to no improvement in the condition, and, two and a half days after

the admission to the hospital, the patient was obviously moribund. He was in a state of coma, the temperature was over 103 F., pulse 130 a minute and feeble, and the breathing markedly Cheyne-Stokes in type. It was considered justifiable to operate in the same way as Barr had done in the cadaver. By means of a glass funnel attachment, sterilized saline solution, at a temperature of 100 F., was allowed to flow into the lateral ventricle. In a few seconds turbid fluid began to drop from the lumbar cannula. This was carried on for quite an hour, and at the end of that time more than half a pint of turbid flaky fluid had been collected in a glass. As a final step, 10 c.c. of antistreptococcus serum were introduced into the lateral ventricle through the rubber tube. The cannula in the lumbar region was then removed, but the rubber tube, fixed by means of sutures, was left in the lateral ventricle. The patient bore this prolonged operation well, and for an hour or two there was a slight general improvement, but no return to consciousness; this slight improvement soon passed off, and death ensued fourteen hours after the completion of the operation. A postmortem examination confirmed the diagnosis of widely diffused basal leptomeningitis, characterized by the large amount of exudate filling the basal subarachnoid cisterns. There was no other intracranial lesion.

19. Estimation of Blood-Pressure.—The sphygmo-oscillometer, described by Eckenstein, is the instrument which was devised by Dr. V. Paehon, Chef du Laboratoire de Physiologie in the Faculty of Medicine of Paris, for the clinical estimation of blood-pressure, and the study of the variations which occur in the cardiac cycle as manifested by the pulse-wave. It consists of a rigid and air-tight metallic box, which contains an aneroid chamber. At the beginning of an experiment the box, the aneroid chamber and the armlet are in direct communication with one another. One great advantage of this instrument is said to be the absence of the personal equation. Those who have worked with instruments of the Riva-Rocci type must have been struck with the difficulty that is sometimes experienced in determining the exact moment at which the registering finger can no longer distinguish the pulse. This difficulty may be made still more marked if two observers perform the experiment, one of whom is engaged in watching the sphygmomanometer, while the other is occupied solely with feeling the pulse. With the oscillometer there is no such difficulty, as the disappearance or the reappearance of the pulse is indicated by the needle. The oscillometer should be used exactly as a Riva-Rocci instrument—that is to say, the armlet should be applied over the brachial artery and the finger on the radial pulse.

Lancet, London

November 26

- 26 *Thrombotic Softening of the Spinal Cord a Case of So-Called Acute Myelitis. H. C. Bastian.
- 27 Diseases of Elephants' Tusks in Relation to Billiard Balls. J. Bland-Sutton.
- 28 Diffuse Lipoma. J. Hutchinson.
- 29 Infection in Phthisis. L. Cobbett.
- 30 Salvarsan ("606"). E. Emery.

December 3

- 31 Treatment and Prognosis of Exophthalmic Goiter. W. H. White.
- 32 Recurring Arterial Hypertonus in Granular Kidney and in Migraine. W. Russell.
- 33 Diagnosis and Treatment of Cystic Disease of the Breast. D. Power.
- 34 *Heart Strain and Dilatation. J. F. Goodhart.
- 35 Motor Functions of the Stomach. H. M. W. Gray.
- 36 Intramedullary Lesion of the Spinal Cord. A. Bernstein.
- 37 *Intestinal Obstruction Caused by an Enterolith Spontaneously Cured by Evacuation Through an Umbilical Fistula. D. M. Greig.
- 38 Outbreak of Illness Due to Canned Meat in the City of Carlisle. J. Beard.

26. Thrombotic Softening of the Spinal Cord.—Bastian holds that the evidence seems to be altogether overwhelming that in the great majority of cases of so-called "acute myelitis," and also of "acute poliomyelitis," the affection is caused not by an inflammation, but by the thrombosis of some of the vessels of the spinal cord (when, in the latter disease, it is not due to a special acute degenerative process). This latter conclusion, he believes, is rendered obvious: (1) by the similarity of the morbid changes in question to those occurring in the brain which are due to thrombosis, as well as to the absence of any reason why a primary inflammation should

be rare in the brain and common in the spinal cord; (2) these strictly logical reasons are strongly reinforced by the fact of the existence of special conditions favoring the occurrence of thrombosis in the vessels of the spinal cord, and in just such parts of the cord as are most frequently affected; (3) by the fact that the disease is most commonly met in just such persons and under just such conditions (as to heart's action, blood-vessels and quality of blood) as are known to be favorable to the occurrence of thrombosis; (4) by the fact that the mode of onset and the early symptomatology of the affection are wholly different from what they would be, had an inflammation of the cord actually existed; and (5) by the fact of the absence of any reasonable cause of inflammation, certainly in the majority of those in whom the malady makes its appearance.

34. Heart Strain and Dilatation.—True heart strain, by which Goodhart understands a state of muscle that, if not dealt with by retreat from all active exercise for long periods, leads to dilatation of the heart, is a rare condition. Dilatation of the heart, in the beginning, is evidently not easy to determine with certainty, for it may share signs and symptoms in common with many emotional and other nerve disturbances of which the heart is a past-master of expression. Cases of doubt are common, and they call for circumspection as regards their management.

37. Intestinal Obstruction.—A boy, of imperfect health, a sufferer from alternating constipation and diarrhea, had a pointing abscess at the umbilicus which was protruding, inflamed and fluctuating. The abscess burst and discharged offensive pus, which necessitated frequent dressing, but the boy did not seem to make progress. After five days of vomiting and pain, a drainage tube was inserted. This was followed by a diminution of the discharge, but it was noticed that there was some fecal matter mixed with the pus. The slight improvement was maintained for a few days. The sinus was enlarged by dressing forceps, and an attempt was made to provide more efficient drainage. This was successful to some extent. While the wound was being dressed, a rounded calculus-like mass presented in the sinus and was easily removed, its escape being accompanied and followed by an unusually large quantity of pus. From that moment the wound healed rapidly and the boy's condition materially improved, and he was discharged healed and looking well and stout ten days later. His general improvement was as striking and remarkable as the improvement in the local condition. The structure which was discharged proved on examination to be an enterolith. It was globular, measured $2\frac{1}{2}$ inches in circumference, was rather larger than an ordinary marble, being smooth for the most part but not polished, and when dried its most striking feature was its lightness. It weighed 24 grains, and, indeed was considerably lighter than a pith ball of equal size. Where the enterolith lay in this case it was impossible to say. The sinus led from the umbilicus backward into the right loin, but the obstruction must have been in the small intestine, for a foreign body of its size could not cause obstruction in the large bowel.

Medical Press and Circular, London

November 9

- 39 Medical Treatment of Ulcer of the Stomach and Duodenum. F. J. Smith.
- 40 Local Tenderness on Pressure in Tuberculosis. C. Sabourin.
- 41 Occurrence of Headache and Pain in Nasal Conditions. J. W. Wood.

November 16

- 42 Vision. W. R. MacDermott.
- 43 Pathogenesis and Treatment of Anuria. C. Achard.
- 44 Infection of the Urinary Tract with *B. Coli*. J. R. Charles.

Clinical Journal, London

November 9

- 45 Arthritis: Its Varieties and Treatment. W. Murrell.
- 46 Enlarged Tonsils and Adenoids. G. F. Still.
- 47 Endo-Aneurysmorrhaphy. W. Sheen.

November 16

- 48 Syphilitic Headaches. G. Pernet.
- 49 Treatment of Central Osteitis by Metal Drains. C. J. Symonds.

Indian Medical Gazette, Calcutta

November

- 50 A New Method of Making Permanent Preparations of Mosquitoes. C. A. Bentley and J. Taylor.
- 51 Value of Adrenalin and Pituitrin in Treatment of Cholera. H. E. Drake-Brockman.

- 52 Persistent Ileceough as a Sequela of Choleraic Diarrhea. W. D. Keyworth.
- 53 Diagnosis and Treatment of Intrapelvic Extra-Uterine Tumors. K. Platt.
- 54 Strangulated Hernia. F. P. Connor.
- 55 Three Unusual Cases of Hemoglobinuric Fever. C. Roper.
- 56 *An Unusual Complication of Labor. D. Munro.
- 57 Two Cases of Snake Poisoning. Recovery. F. C. Fraser.
- 58 Fatal Case of Snake-Bite by *Echis Carinata*. C. H. Reinhold.
- 59 A Case of Poisoning by Eucalyptus Oil. G. G. Jolly.

56. An Unusual Complication of Labor.—In the case reported by Munro, a cystic tumor about twice the size of a fetal head was attached between the legs of the fetus. The base of attachment corresponded to what should have been the perineum and to the coccyx and sacrum. The tumor was covered by ordinary skin continuous with that over the abdomen and buttocks of the fetus. No anal opening could be discovered in the fetus. Its pelvic cavity communicated directly with the cavity of the tumor. In front of the base of attachment of the tumor was a rudimentary vulva with a small blind urethra. There were several daughter-cysts in the walls internally and running around the internal walls were loops of the intestine. Of these loops some were rudimentary and blind. They were attached to the inner wall of the cyst by mesentery. The rectum of the fetus was in this way continuous with a blind loop in the wall. The spinal column of the fetus did not end at the coccyx but was continued on into a bony mass which seemed like a rudimentary pelvis. From this mass five stunted twisted legs had projected forming a star-shaped figure. Of these one foot had eight toes, one six toes, one three toes and one one toe. They were not all of the same size and were at different stages of development and perfection. Two of them were very rudimentary, containing some rudimentary bone, but joined on to the central mass by skin and fibrous tissue. Another was only joined on by skin and fibrous tissue. Two of the legs had articulations with the rudimentary pelvis, and did not hang loose like the others. Munro dissected out from one a fairly well-formed tibia with ossified shaft and upper and lower cartilaginous epiphyses.

Archives Générales de Chirurgie, Paris

September, VI, No. 9, pp. 881-990

- 60 Plastic Operation After Severe Burns of the Face. (Cicatrices vicieuses de la face.) L. Desgouttes and L. T. Tavernier.
- 61 Hemophilic Iliac Hematoma. G. Houzel.
- 62 *Traumatic Asphyxia. (Le masque ecchymotique de la face par compression thoracique.) P. Maclaure and R. Burnier.
- October, No. 10, pp. 991-1100
- 63 *Operability of Cancer of the Rectum. A. Chaliel.
- 64 *Automobile Fracture of the Radius. (Fractures radio-epiphysaires.) P. Caecia.
- 65 *Continent Gastrostomy. (Gastrostomie par dédoublement du muscle droit suivant son épaisseur.) F. Lofaro.

62. Traumatic Asphyxia.—Maclaure and Burnier report two cases of stasis cyanosis from trauma compressing the upper part of the trunk, and summarize sixty-six other cases from the literature. Treatment should be that for asphyxia in general, supplemented by stimulants, heat and friction.

63. Operability of Cancer of the Rectum.—Chaliel found nearly 60 per cent. operable in his own experience with forty-seven cases, but the percentage in sixteen other clinics, which he cites, ranged from 19 to nearly 81 per cent. He found the ampulla distended with gas without admixture of feces in two cases; this is what is known as Hoehenegg's sign of rectal cancer. The patient should be examined both erect and reclining, and anesthesia is frequently necessary to determine the question of operability. Even with this, he adds, metastasis in the liver is liable to escape detection. Exploratory laparotomy in the left side is the best of all means, he says, to determine the actual condition with rectal cancer in men, and vaginal laparotomy in women. He regards involvement of the bladder or urethra as contra-indicating removal; adhesion to the uterus or adnexa is not a contra-indication. In three of his cases a mammary or gastric cancer had been previously removed, and in another case a cancer in the anus or one in the sigmoid flexure was removed at the same time, and the patients survived from seven months to two years.

64. Automobile Fracture of the Radius.—Caecia reports five cases from Rome and describes the mechanism of the fracture and treatment, advising immobilization in abduction and slight supination when the fracture was the result of pres-

sure and flexion. But if it is due to torsion, immobilization in slight adduction is indicated, the hand slightly flexed and adducted, the arm between supination and pronation. During the immobilization the fingers should be exercised to maintain muscle functioning and after a week the cast should be removed for massage every day, and be discarded by the end of three weeks.

65. Continent Gastrostomy.—Lofaro separates the layers of the rectus muscle or bores through it horizontally and draws a cone of the wall tissue of the stomach through the passage thus made in the thickness of the muscle, bringing the cone of stomach wall finally out through the skin where it is sutured to make an opening into the stomach. The muscle fibers around, above and behind it insure a sphincter-like closure of the opening. The outcome was excellent in the eight dogs on which the operation has been performed.

Lyon Médical, Lyons

November 20, CAV, No. 47, 845-884

- 66 No Appreciable Influence from Simple Hyperthermia and Febrile Infection on Glycemia. R. Lépine and Baulud.
67 Functions of the Thymus. E. Weill.

Bulletin de l'Académie de Médecine, Paris

November 15, LXXIV, No. 36, pp. 261-338

- 68 *Comparative Value of Organic Arsenic and Mercury in Syphilis. E. Gaucher.
69 *Malta Fever. F. Widal.

68. Summarized in Paris Letter, Dec. 10, 1910, page 2074.

69. Contagiousness of Malta Fever.—On Widal's motion the Académie adopted a resolution advocating compulsory notification of cases of Malta fever, after he had discussed several small epidemics of the disease that have occurred in France recently. In most cases infection could be traced to goat's milk, but not always. Even mere contact with the infected goats or with their blood may transmit the disease. Laboratory infection seems to occur more readily with Malta fever than with glanders or plague, and he reported a case in a worker in his own laboratory, who developed a typical case of Malta fever after working on some cultures of the Malta micrococcus. No other source for his infection could be discovered; his habit of laying temporarily his cigarette on his work table probably afforded the opportunity for contagion.

Presse Médicale, Paris

November 16, XVIII, No. 92, pp. 857-864

- 70 Intoxications. H. Roger.
November 19, No. 93, pp. 865-880
71 *Experiences with Lime in Treatment of Pulmonary Tuberculosis. (Recalcification—méthode de Ferrier—dans la tuberculose pulmonaire.) E. Sergent.
72 Wisdom-Tooth Disturbances. (Péricoronarite dentaire.) P. Fargin-Fayolle.
November 23, No. 94, pp. 881-888
73 Operative Treatment of Hemorrhoids. P. Reclus.
November 26, No. 95, pp. 889-896
74 *Serous Meningitis and Anaphylaxis After Spinal Serotherapy. J. A. Sicard.

71. Lime in Treatment of Tuberculosis.—Sergent has been treating pulmonary tuberculosis in the last six years according to Ferrier's recalcification method. This aims to resupply the lime, the loss of which, he believes, prepares the soil for tuberculosis and promotes its development. Sergent here gives the theoretical bases and reviews the results of treatment along this line, regarding it as the best method of treating tuberculosis at our disposal. The aim is to prevent undue loss of lime and to induce recalcification in the decalcified organism. He has applied it in 1,574 cases and states that 306 patients have been under practically constant observation for from six months to five years. General improvement was marked in 96 per cent.; general and local in 40 per cent.; 14 per cent. were apparently cured, while in 14 per cent. the disease continued its course unmodified. Ferrier assumes that the principal cause of the loss of lime is acid fermentation in the digestive tract, which must be prevented, and combated while the lime salts are to be given in substance and in mineral waters.

74. Serous Meningitis After Intraspinal Serotherapy.—Sicard calls attention to the meningitis liable to follow intraspinal injection of any substance, but especially of anti-

meningococcus serum. He applied this serotherapy in certain nervous and mental diseases, epilepsy or psychoses, hoping to modify the permeability of the meninges, and was surprised at the lively reaction that followed even small injections, the temperature rising several degrees, with headache, nausea, a suggestion of Kernig's sign and pains in the legs, all appearing two or three hours after the injection, most intense by the fifth or sixth hour and then gradually subsiding. The spinal fluid was turbid or opalescent, with polynucleosis gradually yielding to lymphocytosis. This reaction to the serum was observed both with normal and with chronically diseased meninges. With acute meningitis the infectious symptoms masked those due to the serum reaction, which explains why the latter has not been recognized before. This reaction has nothing to do with anaphylaxis as it occurs with the first injection. In one case this reaction following the serum injection in meningitis in a young man was assumed to be a flaring up of the infectious process, but the sterility of the cerebrospinal fluid convinced Sicard that it was merely this serum reaction, and the rapid recovery confirmed his assumption. In another case the laboratory findings in the cerebrospinal fluid were negative in a case suspicious of meningitis. The fluid the next day was opalescent and the diagnosis was supposed to have been erroneous until it was learned that in the interim an intraspinal injection of serum had been made. The change in the fluid was merely a serous reaction and the rapid recovery showed that a tonsillitis was responsible for the disturbances.

Revue de Gynécologie, Paris

October, XV, No. 4, pp. 305-400

- 75 Large Subperitoneal Myxoma of Broad Ligament. H. Brin.
76 *Vagino-Sacral Hysterectomy. (Hystérectomie vaginale à ciel ouvert.) Chaput.
77 *Inflammation of Gastric Cellular Tissue. (Linite plastique.) P. Reymer and P. Masson.
78 Contusions and Traumatic Ruptures of the Duodenum. II. M. Guibé.

November, No. 5, pp. 401-512

- 79 Double Uterus. Anatomy and Development. G. Piquand.
80 Advantages of Billroth I. Technic for Anastomosis After Pylorotomy. (La suture duodéno-gastrique terminale après pylorotomie.) M. L. Chevrier.

76. Vagino-Sacral Hysterectomy.—Chaput asserts that the technic illustrated has the advantages of both the abdominal and vaginal routes; it gives ample access, exposing the parts fully to view, while it is an unusually benign operation and leaves no scar on the abdomen. It is particularly useful for rather inaccessible vesico-vaginal fistulas as well as for operations on the internal genitals. The incision starts from near the right posterior superior spine of the ilium, follows the right margin of the sacrum, passes half way between the anus and the ischium and ends in the center of the right labium. The parts are incised down to the vagina and peritoneum inclusive. The vagina is thus opened through the labium up into the posterior cul-de-sac, a little to the right of the median line. His illustrations show the ample access thus provided and also the practically invisible scar left between the buttocks.

77. Plastic Linitis.—There were signs of cancer in the two cases reported by Reymer and Masson, and they say that study of the gastric chemistry in cases of so-called plastic linitis would probably reveal unsuspected malignant disease in many if not in all cases.

Semaine Médicale, Paris

November 30, XXX, No. 48, pp. 565-576

- 81 *Idiopathic Congenital Dilatation of the Rectum. (Megarectum.) L. Bard.

81. Idiopathic Dilatation of the Rectum.—In Bard's case the patient was a farmer of 48, whose rectum was dilated to fill two-thirds of the abdomen, pushing up the diaphragm to the third interspace on the right and to the sixth on the left. The rectum was packed with feces, over 5 pounds being removed, besides a mass nearly 3½ inches in diameter packed in the small pelvis. The man died under choleric symptoms after a dose of castor-oil. The remarkable feature of the case was that the man had never known anything was

wrong in the abdomen; there had never been any symptoms of obstruction or digestive disturbances. The rectum was the only part of the intestine involved. Cough, dyspnea and a tendency to ascites were the only symptoms complained of and the interference with the movements of the diaphragm was probably responsible for them. He was a large eater with stool only about every second day. Bard explains the dilatation in this case as due to a congenital lack of strength and resistance in the walls of the rectum.

Archiv für Gynaekologie, Berlin

XCI, No. 3, pp. 479-761. Last indexed December 17, p. 2187

- 82 Relations Between Conception and Menstruation and Embedding of the Ovum. S. Gottschalk.
83 Atresia of Follicles in Child Ovaries. W. Benthin.
84 Histogenesis of Corpus Luteum and Products of Retrogression. K. Hegar.
85 *The Wertheim-Schauta Operation for Genital Prolapse. W. Stoeckel.
86 Lecithin Bouillon for Differentiation of Hemolytic Streptococci. A. Hamm and P. Jacquin.
87 Epithellum Development in Vaginal Portion of Uterus. R. Meyer.
88 Erosions and Pseudo-Erosions of Vaginal Portion of Uterus, Congenital and in Adults. R. Meyer.
89 Abdominal Operations for Uterine Carcinoma. K. Franz and A. Zinsser.
90 Lymphangiectasia with Uterine Myoma. R. Todyo.
91 Simulated Superfetation. E. E. Franco.
92 *New Experimental Research on Function of Corpus Luteum. L. Fraenkel.

85. The Wertheim-Schauta Prolapse Operation.—Stoeckel has performed this operation in forty cases and discusses several points which he regards as important for the technique. The bladder should be entirely mobilized and the uterus interposed so that it holds the entire bladder evenly on its back. If the uterus shows too strong a tendency to straighten up again there is less chance for its serving the purpose. Unless the uterus can be brought down without force as far as the urethra, he does not attempt to apply this technique. In one case it was a mere accident that he discovered an incipient carcinoma in the corpus as he was about to perform this operation. The patient had no signs of malignant disease and he wavered between the Schauta technique and hysterectomy, finally deciding on the latter. To his amazement he found a flat carcinomatous ulcer in the fundus; since then he has never utilized the uterus in a prolapse operation unless absolutely convinced of the soundness of its interior. For this purpose he cures a day or so before the contemplated Schauta operation examining the scrapings under the microscope, and before suturing the uterus to support the bladder, he slits the anterior wall and inspects the interior, then cures, applies the actual cautery to destroy the mucosa throughout, so as to ward off any possible trouble later by obliterating the cavity of the uterus, especially the opening into the tubes. One of his patients succumbed to pulmonary embolism, ten days after the operation, as she was allowed to get up. There was moderate myocarditis in this case; the operation had required only thirty-five minutes, under chloroform, and convalescence had been afebrile. A tendency to slight incontinence in two cases was evidently due to fastening the uterus too high.

92. Function of the Corpus Luteum.—Further experiences during the last seven years with 277 new experiments have only confirmed Fraenkel's statements in 1903 based on 120 experiments. All apparently sustain the assumption that the corpus luteum is a gland with an internal secretion, and that this is responsible for the changes and processes which induce the settling down of the ovum in the uterus and control the first few weeks of embryonal life. In the 112 rabbits whose corpus luteum was entirely removed before the fifteenth day after coitus, the pregnancy was completely arrested, while it progressed unmodified in over 50 per cent. of the fifty-three cases in which only part had been removed.

Beiträge zur klinischen Chirurgie, Tübingen

LXX, No. 1, pp. 1-391. O. von Angerer Festschrift

- 93 Parabiosis by Direct Union of Vessels. E. Enderlen, G. Hotz and H. Flörcken.
94 *Persisting Thymus with Exophthalmic Goiter. H. Gebele.
95 Free Osteoplastics. W. Löbenhoffer.
96 *Expulsion of Foreign Bodies. (Fremdkörper im Organismus.) H. v. Baeyer.

- 97 Surgical Impressions in America. F. Ebermayer.
98 General Treatment Before and After Operations. E. Leonpacher.
99 Intoxication from Dermatol. L. Dorn.
100 Roentgen-Ray Inspection in Sun-Lighted Room. (Röntgenoskopische Operationen im taghellen Raum.) R. Grashey.
101 Traumatic Retroflected Coxa Vara. R. Grashey.
102 Injuries of the First Metacarpophalangeal Joint. R. Grashey.
103 Transverse Fracture of the Upper Jaw. (Zur Quërlin'schen Transversalfraktur des Oberkiefers.) J. Duschl.
104 Ultimate Outcome of Traumatic Dislocation of the Shoulder. K. Lexer.
105 Brachydactylia. F. Klaussner.
106 Treatment of Injuries of the Lungs. v. Bomhard.
107 Primary Operative Treatment of Gunshot Wounds of the Lungs. R. Seggel.
108 *Operative Treatment of Gastric Ulcer. (Zur chirurgischen Behandlung des Magengeschwürs.) A. Schmitt.
109 Splenectomy After Rupture of Spleen and in Malarial Fever. Papaioannou.
110 Hysterie Ileus. R. Dax.
111 Treatment of Diffuse Suppurative Peritonitis. Lunckenbein.
112 Emptying the Stomach in Operating on This Organ. (Mechanismus der Magenentleerung bei Magenoperierten.) C. Maunz.
113 Intrahernial Torsion of the Omentum. (Netztorsion.) A. Schönwerth.
114 *Plastic Closure of Opening in Femoral Hernia. (Neue Art eines plastischen Bruchpfortenverschlusses bei Cruralhernien.) A. Ach.
115 Retrograde Esophagoscopy with Stenosis. (Oesophagusstenosen und ihre Behandlung.) A. Ach.

94. Persisting Thymus with Exophthalmic Goiter.—Gebele states that seven died, being 19 per cent. of thirty-six patients with exophthalmic goiter operated on at the Munich surgical clinic. Necropsy was possible in five of the seven fatal cases and a large thymus was found in four out of the five. In six other patients with exophthalmic goiter no operation was attempted. These experiences led to considerable experimental research to determine the influence of removal of the thymus in dogs, implantation of thymus and thyroid tissue, and other experiments on these glands. The conclusions drawn from this research are that the thymus hypertrophies as a natural compensating process to do the work which the diseased thyroid is unable to accomplish; that is, there is a vicarious enlargement of the thymus. The death of persons with exophthalmic goiter and abnormally large thymus has nothing to do with the "persisting" thymus, but must be ascribed to the injury of the heart from the toxic action of the morbid thyroid secretion. He thinks the thymus is probably an epithelial gland rather than a lymphoid organ, and the more pronounced the disease in the thyroid, the larger we may expect to find the thymus. It may be examined by palpation, percussion and radiography, and if it is found enlarged it is wiser to refrain from operating in a case of exophthalmic goiter, he declares, not on account of danger from the thymus, but because its enlargement shows that the thyroid is irreparably damaged, and the Basedow syndrome in such an advanced stage that the chances for operative recovery are practically zero. At the same time, the chief index of the severity of the exophthalmic goiter is the condition of the heart.

96. Expulsion of Foreign Bodies, Sutures, Etc.—Baeyer has been studying the cases reported in the literature of the spontaneous expulsion of foreign bodies either by mechanical or bacterial means, and supplements the lessons thus learned by conclusions drawn from personal experimental research on the ultimate expulsion of foreign bodies incorporated in rabbits. When a foreign body is implanted in the tissues, the means to prevent its expulsion are strict asepsis, a compact rather than porous composition, or, if the foreign article is porous, it should be impregnated with an antiseptic. This induces a transient chemical suppuration which aids in walling off the foreign body; coating with vaselin or paraffin likewise answers this purpose. The bowel functioning must be regulated before and after the operation to prevent the intestinal bacteria from starting a process leading to expulsion of the foreign body. Another important point is that the foreign body should never be implanted during fever; even tonsillitis should contra-indicate it. The foreign body must not slip around in its place; to insure proper conditions in this respect long immobilization is strictly necessary. If this is impossible the serous effusion bathing the foreign body should not be drained away but left to protect it. The

incision should therefore be as far away from the foreign body as possible to prevent eventual fistula. The foreign body should be as smooth, light and small as possible and it should be encapsulated before active motion with it is allowed, as in case of an artificial tendon.

108. Surgical Treatment of Gastric Ulcer.—Schmitt discusses the indications for operative measures and the results in his sixty-two cases in the last five years. The list includes eight cases of duodenal ulcer. Of the total number, 51.6 per cent. have been cured; 27.4 per cent. improved, and only 4.8 per cent. failed to benefit by the operation, while 16.1 per cent. died. Two of the ten patients with cancer, out of the three treated by resection, were cured.

114. Plastic Operation for Large Femoral Hernia.—Ach gives an illustrated description of the technic with which he effectually closes and protects the femoral canal from the rear. He does this with a flap 10 cm. long by about 6 cm. broad, taken from the deep fascia of the thigh on the outside of the front of the thigh. This flap from the fascia lata is drawn up through an incision 1 or 2 cm. above Poupart's ligament and it is then pushed down behind the horizontal ramus of the pubis to the innominate line, so that the flap hangs down into the small pelvis behind the femoral ring like a curtain. It is held in place by being fastened across to Cooper's ligament—the fold of the fascia transversalis—and the latter is then sutured to Poupart's ligament. The front of the flap is thus turned toward the femoral canal and the rear towards the abdominal cavity. He gives the details of three cases in which he has applied this technic on middle-aged women, with eminently satisfactory results to date, over five to eleven months. This technic is designed only for very extensive hernias or for recurrence after failure of other measures.

Berliner klinische Wochenschrift, Berlin

November 14, XLVII, No. 46, pp. 2089-2132

- 116 Salvarsan ("606") in Syphilis. (Erfahrungen über Applikationsart und Dosierung bei Ehrlich-Behandlung.) W. Genierich.
- 117 Biologic Research on Origin of Bone. (Herkunft von Knochen.) K. Steffenhagen and P. W. Clough.
- 118 Much's Granula in Lupus. (Vorkommen des Much'schen Tuberkulosevirus bei Lupus vulgaris.) H. Boas and C. Ditlevsen.
- 119 Quantitative Determination of Diastase in the Urine and Its Relation to Nephritis and Diabetes. O. J. Wynhausen.
- 120 *Gastric Cancer in Relation to Female Genital Organs. (Magenkrebs in seinen Beziehungen zu den weiblichen Genitalorganen.) E. Runge.

November 21, No. 47, pp. 2133-2176

- 121 *Local and General Hypersusceptibility to Salvarsan. W. Wechselsmann.
- 122 Salvarsan. O. Rosenthal.
- 123 Mercury Reactions in Secondary Syphilis. (Quecksilberreaktionen bei sekundärer Lues.) J. Baum.
- 124 Recurrence of Syphilis as Optic Neuritis After Salvarsan. R. Kowalewski.
- 125 *Typhoid Bacilli-Carriers in Insane Asylums. (Bedeutung der Bacillenträger in Irrenanstalten.) C. Neisser.
- 126 Sensitized Tuberculin. (Entgiftete Tuberkuline.) A. Wolff-Eisner.
- 127 Internal Secretion of the Ovaries and Testicles. (Innere Secretion der Keimdrüsen.) A. Münzer. Commenced in No. 46.
- 128 Care of Severe Wounds. (Versorgung schwerer Verletzungen.) G. W. Schiele.
- 129 The Cell Lipoids. (Nachweis, Vorkommen und Bedeutung der Zell-Lipoide.) C. Kaiserling.

120. Gastric Cancer in Relation to the Female Genital Organs.—Runge remarks that authors are almost unanimous in regarding the stomach as the site of the primary tumor when coincident ovarian cancer and gastric cancer are found. Metastasis of malignant disease in other organs seldom locates in the stomach; Mengerhausen found no metastasis in the stomach in sixty cases of malignant ovarian disease. The metastasis from the gastric cancer is especially liable to locate in the ovary as the cancer cells are moved along by the intestinal peristalsis, ascites, etc., and alight on the ovaries, the epithelium of the ovaries being particularly permeable for corpuscular elements, the vessel supply of the ovaries also favoring the development of malignant tumors. The congestions, wounds and scar formation in the ovaries connected with the ovulation process are all factors which enhance the predisposition of the ovary to cancerous growths above that of other organs. The patients are generally between 20 and 40 years old, and amenorrhea is constant

when the tumors have developed at all. The symptoms on the part of the stomach are overshadowed completely by those from the ovaries. If noted, they are generally considered merely accompanying manifestations of the ovarian trouble. As a rule, both ovaries are affected. The correct diagnosis has been only rarely made; generally the gastric tumor is overlooked. In any operation on the ovaries the stomach should be carefully inspected for possible primary cancer, and the ovaries examined in all operations for gastric cancer, and they should be removed at the slightest sign of enlargement. Some authors advocate removing the ovaries always when there is gastric cancer, even when merely a palliative operation is possible. In a few cases on record a gastric cancer developed during a pregnancy and was the cause of uncontrollable vomiting. In such cases the vomiting commences in the second month of pregnancy or later, mostly in women who had no tendency to vomiting in previous pregnancies. The gastric cancer in these cases seems to run an unusually acute course and the enlarging uterus renders diagnosis difficult. Chemical examination of the stomach content is indicated in suspicious cases. Polano advocates immediate interruption of the pregnancy, followed by removal of the gastric tumor when a cancer is discovered in the stomach of a pregnant woman, although cases are known in which a healthy child was born at term even under these conditions.

121. By-Effects of Salvarsan.—Wechselsmann supposed it was merely a casual coincidence that a febrile sore throat developed a week after injection of salvarsan in some of his patients, until the regularity of the occurrence led to the discovery that it was an enanthem similar to the exanthem which he observed in a number of others, fully 1 per cent. of his patients exhibiting these by-effects. The remarkable feature about them is that they do not develop until after an incubation averaging nine days, these severe symptoms thus appearing when the main mass of the drug has been eliminated or walled in by a tough wall of tissue. He is convinced that these by-effects are similar in nature to the manifestations of serum sickness, which do not develop until the serum is no longer present in the body as such, and which are explained as the result of the reciprocal action between the organism and the antigen. The same explanation applies also, he thinks, to the Herxheimer reaction. He gives the temperature curves of some typical cases. There did not seem to be any increase in the reaction after repetition of the dose, but he warns that it is wiser to refrain from repeating the dose just at that critical period, from the eighth to the tenth day, when the organism seems to be in an especially sensitive state. To date, he states, these manifestations of hypersusceptibility have proved transient and harmless, but they suggest caution in case of weak heart or other depressing factors. The exanthem appeared coincident with a temperature of 104 F. and resembled that of measles or of scarlet fever, and was accompanied by gastric symptoms, diarrhea, thirst, coated tongue and occasional vomiting; there was much malaise, but the pulse was good and the urine normal. The febrile and other manifestations were still more severe when the enanthem was localized in the throat; it is possible that the gastrointestinal mucosa may be likewise affected. The temperature kept high for five days in one case reported.

125. Typhoid Bacillus-Carriers in Insane Asylums.—Neisser reports some experiences which seem to confirm the assumption that insane asylums are peculiarly liable to shelter bacillus-carriers, but inquiry among fifty other German institutions of the kind showed that an epidemic of typhoid had not been known in them for years. Complete isolation of bacillus-carriers seems to be the only means to control contagion from this source, he says. At the Bunzlau asylum in his charge, every new inmate is examined for typhoid bacilli and a special pavillion is devoted to the patients with positive findings. At Emmendingen, during the last two years, eight of the attendants and three of the servants were found to harbor typhoid bacilli. Neisser classes dysentery with typhoid in the necessity for prophylactic measures. He condemns in conclusion the exaggerated dread of bacillus-carriers as the danger of contagion from them cannot be very grave, or more of it would occur.

Correspondenz-Blatt für Schweizer Aerzte, Basel

November 10, XL, No. 32, pp. 1065-1096

- 130 *Momburg Belt Constriction for Post-Partum Hemorrhage. (Zur Behandlung der Post-partum-Blutungen durch künstliche Blutleere der untern Körperhälfte nach Momburg.) A. v. Redling.
- 131 *The Alleged Harmless Methods of Anesthesia. Dumont. Commenced in No. 31.

130. Treatment of Post-Partum Hemorrhage with Momburg Belt Constriction.—Reding applied Momburg's technic of constriction of the waist with rubber tubing in thirty cases to arrest post-partum hemorrhage and in twenty-eight cases the benefit was prompt and gratifying. The bleeding stopped at once and the uterus was stimulated to vigorous contraction. This gave time for tranquil preparation for an application of any other measures deemed desirable. This is one of the greatest advantages of the Momburg technic in general practice, as time is gained. Another advantage is that lacerations can be sutured with slight loss of blood. The women do not seem to mind the constriction; only in three cases were there complaints of pains in the legs. The anemia alone is liable to induce such pains. No other by-effects were noted in these twenty-eight cases, but in two others the procedure had little effect, although both patients were thin and no reason for the failure of the constriction could be discovered. In the first case the hemorrhage was not controlled until after the uterus had been tamponed. In the other case the woman was a iv-para, aged 25, with placenta prævia. The bleeding continued under the Momburg belt and after it was removed and applied again, and persisted even after tamponade. Necropsy failed to reveal the slightest injury from the Momburg constriction. In a third case of placenta prævia the extreme anemia was the primary cause of the collapse that followed loosening of the constricting tube. There is no doubt that the woman would have died without the constriction, which should be weighed in the balance in passing judgment on this collapse for which the Momburg constriction was evidently the occasional cause. His final conclusions from these experiences and from the reports of others are that the Momburg technic is entirely harmless for healthy women who are not very anemic. It should be applied as early as possible in cases of post-partum hemorrhage, before the women have lost too much blood. Extreme caution is necessary with much anemia or heart disease. He thinks that raising the pelvis before applying the tube or before loosening it, when there has been great loss of blood, prevents threatening anemia of the brain and heart, but the possibility of air embolism should be borne in mind and no intra-uterine manipulations should be done while the pelvis is raised. He remarks in conclusion that the Momburg method is not infallible, but it adds one more to our means of combating post-partum hemorrhage.

131. General Anesthesia.—Dumont discusses the technics that have been lauded recently as harmless and shows that the authors draw the picture in too favorable colors, especially Jonnesco with his "high spinal technic." Recent statistics have shown that twelve fatalities have been recorded in 2,400 applications of spinal anesthesia; that is, one death in 200, besides five cases of abducent paralysis and four of asphyxia, yielding to artificial respiration, while the postoperative pneumonias amounted to 0.7 per cent. He declares that the problem is not to search for new methods but to teach and practice better technic for the old and tried methods.

Deutsche medizinische Wochenschrift, Berlin

November 24, XXXVI, No. 47, pp. 2177-2224

- 132 *Origin and Treatment of Detachment of the Retina. (Netzhautablösung.) C. Horstmann.
- 133 Sphygmobolometry. (Weiterer Ausbau der Sphygmobolometrie oder euergetischen Pulsuntersuchung.) H. Sahli.
- 134 Relation of Heart Sounds and Murmurs to the Electrocardiogram. (Beziehungen der Herztöne und Herzgeräusche zum Elektrokardiogramm.) O. Weiss and G. Joachim.
- 135 Action of Salvarsan ("606") on the Eye. (Wirkung des Dioxidiamidoarsenbenzols auf das Auge.) W. Wechselmann and W. Seeligsohn.
- 136 Viscerous Muscular Action. (Ueber stellvertretenden Muskelersatz.) H. Kron.
- 137 Case of Paratyphoid Osteoperiostitis. V. Jensen and A. Kock.
- 138 *Rhythmic Compression of the Heart in Apparent Death. (Anwendung rhythmischer Herzkompensation beim Wegbleiben der Kinder und ähnlichen Zuständen.) A. Japha.
- 139 Economy in Dressings. (Sparsame Verbände, vereinfachtes Verbinden.) Waldow.
- 140 Microphotography. Berg.

132. Detachment of the Retina.—Horstmann remarks that the retina becomes detached only when the pressure from the vitreous humor becomes reduced or a stronger counter-pressure from the other side pushes up the retina from below. He advocates recumbency, moderate diaphoresis, subconjunctival injections of salt solution and a light compressing dressing in treatment of detachment of the retina. If several months of this treatment do not induce marked improvement, operative treatment may be proposed, although the prospects are uncertain and dubious. The general treatment above outlined, Uthoff estimates, will cure in 20 per cent. of the cases; Schmidt-Rimpler cured fourteen and materially improved twenty-eight out of seventy-six patients, and Horstmann himself has cured with good vision 14 per cent. of fifty patients. Not until medical measures have completely failed should an operation be considered. He warns against every method which requires an injury of the retina or vitreous body.

138. Rhythmic Compression of the Heart for Apparently Moribund Children.—Japha reports two cases in which apparently moribund infants were treated by rhythmic compression of the heart and revived. The yielding thorax of a child renders this external manipulation more efficient than with the rigid chest of the adult. He does not ascribe the effect to the mechanical influencing of the circulation, but to reflex action. In the first case described a twelve-day infant with signs of heatstroke, unconscious, deeply cyanotic, with foam at the mouth, the pulse scarcely perceptible, respiration 80 to the minute, improved rapidly under the rhythmic compression of the heart and soon recovered after injection of camphor, and cold douches in a warm bath. The other child was a month old and apparently moribund, cyanotic, the temperature 43.3 C. (110 F.), the heart-rate 180, the breathing reduced to gasps at long intervals. Under the compression of the heart and a bath with a cold douche, the temperature dropped to normal and all symptoms soon subsided. Both children are now nearly 2 years old and apparently normal in every respect. The thumb of the right hand is placed between the sternum and the apex and the chest-wall is pressed in rhythmically and deep, about 120 times in a minute (120 *rhythmische Herzstösse*). He thinks that this measure might prove effectual in pneumonia, in spasm of the glottis and in chloroform syncope. Under the rhythmic compression the pupils contract, the face grows less livid and a normal inspiration follows. He has been applying it for years for spasm of the glottis and has had no further fatalities from this cause, and he commends this measure in all such catastrophes and in those with anesthetics. What good does it do, he asks, to exhibit ether or chloroform when in consequence of the spasmodic closure of the glottis the patient is unable to breathe? The rhythmic compression of the heart is more effectual in many cases than artificial respiration. (In this connection we quote a recent case of successful massage of the heart in an apparently fatal early chloroform accident. The patient was a robust man and the operator, J. W. Milne, at once cut into the abdomen to the left of the xyphoid cartilage, and wormed his thumb down to the peritoneum and up through the diaphragm margin till he had it well behind the heart and the other fingers over the heart outside. He says in his communication to the *British Medical Journal*, Nov. 19, page 1657, "I now began to squeeze the heart as one does the bulb of an enema syringe, and never shall I forget the kick and wobble, or rather thrill, that the heart gave in response to the very first compression. It reminded me of the feel of a trout when one grabs it below a bank or boulder. I kept pumping away and all the symptoms disappeared, the first symptom of revival being contraction of the pupil. The patient to this day wonders why the upper wound was necessary to remove one little appendix.")

Medizinische Klinik, Berlin

November 27, VI, No. 48, pp. 1885-1920 and Supplement

- 141 Diet in Health Resorts and Institutions. (Diät und Mineralwässer; Diätikuren. II.) A. Strasser.
- 142 Urotropin in Treatment of Meningitis, Especially in Children. J. Ibrahim.
- 143 Plastics During and After Operations on the Ear. Preysing.
- 144 Technic of Intravenous Injection of Salvarsan. (Zur Technik der intravenösen Hatainjektion.) H. Assmy.
- 145 Incarcerated Hernia. (Pathogenese, Diagnose und Therapie der eingeklemmten Hernien.) A. Most.

Monatsschrift für Kinderheilkunde, Leipsic

November, IX, No. 7, pp 343-382. Last indexed December 24, p. 2276

- 146 Physiologic Variations in the Leukocyte Count in Breast-Fed Infants. W. Wernstedt.
- 147 Spasmodic Cough and Spasmophilia. (Pertussis, bezw. pertussis-ähnlicher Husten, und spasmophile Diathese.) W. Wernstedt.
- 148 Idiosyncrasy to Cow's Milk in Infants. (Zur Frage der Kuhmilchidiosynkrasie im Säuglingsalter.) W. Wernstedt.
- 149 Treatment of Furunculosis in Infants. E. Schloss.
- 150 Importance of Carbohydrates with Fat in Food. (Bedeutung der Kohlehydrate bei fettreicher Ernährung.) H. Helbich.
- 151 Ash in Brain with Spasmophilia. (Aschgehalt in den Hirnen Spasmophiler.) E. Aschenheim.
- 152 *Uncontrollable Vomiting with Congenital Megacolon. (Hirschsprungsche Krankheit unter dem klinischen Bilde unstillbaren Erbrechen.) H. Kleinschmidt.

152. **Fatal Vomiting with Congenital Megacolon.**—Nothing during life suggested Hirschsprung's disease and nothing could be discovered to explain the incessant vomiting in an infant about eight months old, until necropsy revealed typical congenital megacolon, the abnormally long and large bowel having become kinked and twisted.

Münchener medizinische Wochenschrift

November 22, LVII, No. 47, pp. 2449-2504

- 153 *Necessity for Caution in Administering Iodin. L. Krehl.
- 154 *Intermittent Limping in Connection with Tobacco. (Zur Klinik des intermittierenden Hinkens.) W. Erb.
- 155 *Recurring Effusion with Neuralgia of Joints. (Zur Aetiologie des rezidivierenden Gelenkhydrops der Gelenkneuralgie.) C. Garré.
- 156 Participation of Blood-Vessels in Movement of the Blood. (Anteil der Blutgefäße an der Bewegung des Blutes.) J. Strasburger.
- 157 Modern Arsenic Treatment of Syphilis. K. Zieler.
- 158 Technic for Injection of Salvarsan. (Einfache und praktische Injektionsmethode des Ehrlich Hata-Präparates 606.) A. Pasini.
- 159 Roentgen-Ray Diagnosis of Callous Gastric Ulcer. M. Haudek.
- 160 Matrimony for Girls with Heart Disease. (Zur Frage der Ehe bei herzkranken Mädchen.) R. T. Jaschke.
- 161 Operative Cure of Cerebellar Cyst. R. Cassirer and V. Schmieden.
- 162 Permanent Cure of Carcinomas After Radium Exposures. A. Exner.
- 163 Hyoscyamus Poisoning. (Eine Massenvergiftung durch den Genuss der Wurzel von Hyoscyamus niger.) Philippi and Mühle (Davos).
- 164 Improved Rapid Azure-Eosin Romanowsky Stain. G. Giemsa.
- 165 Simplified Technic for Wassermann Reaction. E. Steinitz.
- 166 Operation for Phimosis. Drüner.
- 167 Fenestrated Sound for Diagnosis of Esophageal Cancer. (Einfaches diagnostisches Hilfsmittel bei Speiseröhrenkrebs.) Brünings.

153. **Necessity for Caution in Administration of Iodin.**—Krehl warns that there is necessity for great caution with iodine, especially in cases of arteriosclerosis with enlargement of the thyroid. If there is the slightest sign of perverted thyroid functioning it is better to refrain from it entirely. He has been studying this subject for eight years at Heidelberg, where thyroid disease is common and in many cases the first symptoms of toxic thyroid functioning had developed after a physician had prescribed iodine. In a number of cases a patient with goiter grew very thin and hidden cancer was assumed, but hyperfunctioning on the part of the thyroid was the real cause of the cachexia; it always proved that the patient had been taking iodine, possibly even for a very short time, and that his emaciation or restlessness, excitability or lassitude, dated from that time. Some of the patients had apparently only nervous or psychic disturbances. In some cases there was an apparently causeless fever; this is much more common with thyroidism than physicians generally appreciate. With the iodine cachexia the retention of a good appetite is an important differential point. With arteriosclerosis and apparently normal thyroid functioning, iodine is a useful measure, but its administration should always be under medical supervision. Thyroidism liable to be brought on by iodine does not cease when the iodine is suspended, and it may possibly progress to a serious form as in several of his patients, who had taken but 1 gm. of potassium iodide daily for two weeks, on account of existing or supposed arteriosclerosis, in whom severe thyrotoxic conditions developed.

154. **Intermittent Limping.**—Erb reports that he has had fifteen additional patients with this affection since his last communication recently reviewed in these columns, and states that 14 per cent. of his total material of fifty patients with

arteriosclerotic dysbasia were excessive smokers, consuming from 50 to 150 cigarettes a day, and 44 per cent. were great smokers. Thus the abuse of tobacco was evident in 58 per cent. of his fifty cases, and there was a large proportion of moderate smokers among the rest. In 300 other patients, free from intermittent limping, only 19 per cent. were great smokers, showing the large preponderance of excessive smokers among the patients with arteriosclerotic dysbasia. He states further that 84 per cent. of all his patients who were excessive smokers had unmistakable signs of arteriosclerosis.

155. **Recurring Effusion in the Joints with Joint-Neuralgia.**—Garré reports some cases of supposed neuralgia in a joint which proved to be the result of a minute focus in the adjoining long bone, so small that it escaped all detection. In one case the neuralgic pains in the knee for six years were finally traced to a minute process in the epiphysis, scarcely as large as a bean and visible with the Roentgen rays only from the front. A splint removing the weight from the knee and worn for three years seems to have entirely cured the trouble. The neuralgic pain in the knee returned twice when the splint became defective but subsided at once when it was repaired. In another case an effusion in the knee dominated the picture at last after six years of recurring neuralgia; then a minute focus was discovered and all trouble was cured by curetting the osteomyelitic lesion. In both these cases there had been a slight trauma in the knees years before. In a third case the patient's complaint of an industrial trauma had been disregarded until a focus of periostitis became manifest and a minute shadow was seen with the Roentgen rays 1 cm. below the articular cartilage. In these and in a fourth case the tiny focus in the epiphysis was the sole localization of the pyemic bone process which at no time in its course had presented the typical picture of osteomyelitis.

Wiener klinische Wochenschrift

November 17, XXIII, No. 46, pp. 1623-1666

- 168 *Clinical Diagnosis of Cancer. R. Paltauf.
 - 169 Xanthelasma and Jaundice. F. Chvostek.
 - 170 *Temporary Sterilization of Women. C. J. Bucura.
 - 171 Influence of Menstruation on the Neuropsychic Sphere of Women. J. v. Jaworski.
- November 24, No. 47, pp. 1667-1702
- 172 *Salvarsan ("606") in Syphilis. E. Finger.
 - 173 *Operative Treatment of Acute and Chronic Pancreatitis. J. Goblet.
 - 174 Isolation of Oxybutyric-Acid Producers in Stools. (Studien über Darmfäulnis. VII.) A. Rodella.

168. **Clinical Diagnosis of Cancer.**—Paltauf's article was read at the recent cancer conference at Paris. He reviews the various new methods for clinical diagnosis of cancer, especially gastric cancer, stating that the precipitin and complement-binding reaction, as also the tests based on anaphylaxis, have given negative results which harmonize with the fact that no one has ever succeeded in determining the presence of a foreign albumin in the tissues of malignant tumors. More important is E. Freund's discovery that the serum of normal human beings has a destructive action on cancer cells, and he traced this destructive action to the lecithin element. He discovered further that not only is the serum in cases of cancer lacking in this lecithin element, but there seems to be also some substance in the cancer serum which protects the cancer cells. He further found that the cancer serum induces precipitation in cancer extract; precipitation is not obtained under other conditions. He found this turbid precipitation in the serum in fifty-four cancer patients, while it was constantly absent in the serum from forty-five patients with various non-cancerous affections. Paltauf regards these findings as very important. They are confirmed by C. Neuberg's discovery of the same phenomenon by another route, namely, the clearing up of a suspension of cancer cells when normal serum is added to it. Ascoli's meiostagmin reaction seems also to have an indirect connection with it as the physical-chemical changes in the solution are the manifestations of this difference between cancerous and normal serum. The concordant findings of three research workers by different routes are highly remarkable. Freund regards his findings as the expression of a predisposition on the part of cancer patients. On the other hand, the healthy possess an immunity

to cancer—their serum destroys the cancer cells—but this property may be gradually lost and may finally yield to extreme susceptibility as with universal metastasis. Freund's findings show that the euglobin in the blood of cancer patients behaves towards the lipoids differently from normal serum. His findings further explain certain histologic processes with incipient carcinoma and harmonize with pathologic and anatomic observations. They may possibly throw light not only on the clinical diagnosis but on the whole cancer problem.

170. Temporary Sterilization of Women.—Bucura suggests slitting the broad ligament just below the ovary and burying the latter under the peritoneum and suturing the peritoneum above it, so that the ovary is completely excluded from the region of the tube and uterus. Success depends on the minutely careful suturing, so that no ovum can find its way out of the pocket in which it is buried. If at any future time the conditions permit conception, it would be an easy matter to release the ovary which would then resume its normal functioning as nothing has been done to interfere with its integrity. He has confirmed the feasibility of the operation on animals, but has not yet applied it in the clinic. The article is illustrated.

172. By-Effects with Salvarsan.—Finger states that in the five months since he has been using salvarsan 170 syphilitics have been treated with it and all but thirty-eight have been kept under supervision. The results of treatment do not indicate, he says, that the salvarsan has any more effectual action on the syphilitic process itself than the usual methods of treatment, while the harmlessness of the drug has by no means yet been demonstrated. In his own experience, four of the patients presented serious disturbances on the part of the eyes and three others disturbances in the internal ear. The first patient was a robust girl of 19, and two months after the injection of salvarsan (which had been made two months after primary infection), she returned complaining of headache, vertigo and impaired vision in the right eye. As the Wassermann reaction was positive, she was given another injection of salvarsan, followed by mercury and iodid, but there has been no improvement in the condition, and the left optic nerve now also shows signs of neuritis. Incipient atrophy of the optic nerve was also discovered in another patient who had seemed to be much benefited by the injection of salvarsan after two years of the usual measures had proved inefficient to cure the malignant syphilis; the treatment had included thirty injections of arsacetin and eighteen of enesol. Three months after the injection of salvarsan, incipient atrophy of the optic nerve on both sides became manifest. In the fourth case the syphilis was of five months' standing when the salvarsan was injected, and three months later there were evidences of right peripheral choroiditis with central turbidity of the vitreous body humor. In two of the cases the Wassermann reaction had become negative. Wechselmann has also reported choroiditis, paresis of the ocular muscles and iritis, as remarkable forms of recurrence of the syphilis a few weeks or months after the salvarsan injection. Fischer has reported severe papulous iritis in four cases and neurochorioretinitis in another case from two to three months after the injection. All these are occurrences which are never observed under ordinary mercurial treatment in this early stage of syphilis. The same can be said of Finger's three cases in which the acoustic nerve was affected. In the first with nystagmus, vertigo and typical tendency to fall, the hearing was intact, indicating that the vestibular nerve had been alone shut off in some way. The symptoms all passed away in a few days, but in the two other cases the trouble was evidently in the true nerve of hearing and the deafness and vertigo have persisted unmodified to date. In these three patients the Wassermann reaction has been persistently negative and the auditory disturbances did not develop until from nine weeks to nearly four months after the injection in the last two cases, but they came on the day after the injection in the case in which they proved transient. His experience shows, he says, that salvarsan has great symptomatic efficiency, but that it does not eradicate the disease.

173. Treatment of Pancreatitis.—Gobiet reports a case of severe acute pancreatitis in which the patient, a woman of

57, was promptly cured by exposure of the pancreas by incision and tamponing. He calls attention to the isolated distention of the transverse colon which occurred as an early symptom in this case. Discovery of this should suggest the possibility of pancreatic disease and compel exposure of the gland even when the abdominal syndrome shows no other symptoms pointing to pancreatitis. With chronic pancreatitis without gall-stones but with stagnation of bile, cholecystenterostomy should be done. If there are gall-stones the indications for them dominate the syndrome, but whenever the pancreas is found enlarged with patches of induration, decapsulation and incision and partial excision with drainage should supplement the operation on the biliary apparatus. In the rare cases of inflammation of the body of the pancreas without gall-stones and stagnation of bile, the decapsulation and incision of the pancreas are sufficient.

Zentralblatt für Chirurgie, Leipsic

November 12, XXXVII, No. 46, pp. 1465-1488

- 175 *Aspiration Drainage of Bladder. (Aspirationsdrainage der Blase.) A. Barth.
176 *Operation for Exstrophy of Bladder. F. Fink.
177 *Diagnosis and Treatment of Kidney Tuberculosis. (Nierentuberkulose.) C. Longard.

175. Aspiration Drainage of the Bladder.—Barth has found even the retention catheter unsatisfactory for draining the bladder after operations on this organ, especially after prostatectomy or stone operations on an infected bladder. Even siphon drainage requires the closest supervision. A much simpler and more reliable measure is the use of a Bunsen aspirating jar insuring regular, constant aspiration under mild negative pressure. He uses two jars connected with a long tube entering close to the bottom of each; one stands on the floor, the other on a stool or table. When the higher is filled with water and plugged with a rubber stopper, the water flowing into the lower jar leaves a vacuum, that is, negative pressure, in the higher jar. A glass tube through the rubber stopper is connected by a rubber tube with the retention catheter, or a receiving jar with two tubes in the stopper may be interposed. The urine as it is aspirated drops regularly into the first, interposed, jar and a glance at this jar shows the color, amount and regularity of the drainage. A difference of about 18 or 19 inches between the levels of the vacuum jars is ample for the aspiration. By this means the urine is collected neatly and without odor. The receiving jar can be removed and cleansed every twenty-four hours without interfering with the vacuum, by clamping the tube beyond. This contrivance will be found useful also for drainage of other organs. In one case an elderly man with a fistula after perineal prostatectomy, which absolutely refused to heal, was finally cured under this aspirating drainage through a retention catheter.

176. Operation for Exstrophy of the Bladder.—Fink utilizes the appendix for the outlet to the new bladder made by drawing up the bladder tissue present. This has the advantage of using the anatomically and physiologically normal bladder tissue. The appendix provides an outlet for the urine into the cecum, the valves serving to prevent penetration of gas and feces into the bladder. He has applied the operation in only one case and the much debilitated child did not survive it. He has not had opportunity since, but he thinks that this technic has several advantages, not the least of which is the continence which it promises. If infection should occur, the appendix could be drawn out through the skin.

177. Treatment of Renal Tuberculosis.—Longard comments on the mishaps in treatment of renal tuberculosis, and thinks that they might be avoided with the technic which he has applied in two cases. The patients were able to be up and about in ten days. The question is to determine which kidney is the diseased one, or, if both are affected, has one sufficient functionally capable parenchyma to permit the removal of the other? None of the ordinary technics allows a reliable answer to these questions; consequently he advocates and practices the following method: (1) exposure of the presumably sound kidney, with reposition and primary suture if found sound; (2) exposure of diseased kidney, loosening, ligating and severing the vessels; (3) detaching the ureter

towards the small pelvis, still connected with the kidney; (4) incision parallel to Poupart's ligament through which the kidney with its ureter is drawn; here the ureter is sutured and the wound sutured around it; (5) primary suture of the other incision, and (6) 4 or 5 cm. from the wound the ureter is ligated and the kidney cut from it with the actual cautery.

Nordiskt Mediciniskt Arkiv, Stockholm

XLIII, *Internal Medicine*, No. 2. Last indexed Nov. 12, p. 1772

178 *Influence on Growth and Ossification of Exophthalmic Goiter and Analogous Conditions. I. Holmgren. Commenced in No. 1.

179 *Acute and Subacute Dilatation of the Stomach. O. Hanssen.

178. **Influence on Ossification and Stature of Thyroid Hyperfunctioning.**—Holmgren presents and discusses about all that is known in this line to date, reviewing 353 articles and his own wide experience. It seems evident that the thyroid has control of the growth of the bones, and that infections, by their action on the thyroid, are able to promote the growth of the bones in length and thus increase the stature. In his own experience a blonde complexion or unusual height for the age or both almost invariably accompanied thyroid hyperfunctioning. The 240-page article is in German.

179. **Acute Dilatation of the Stomach.**—Hanssen remarks that the frequency of acute dilatation of the stomach as a post-operative complication has brought it into the limelight in the last decade, but cases due to overfilling of the stomach were described centuries ago. He tabulates ten postoperative cases from recent Norwegian literature, and mentions three from Sweden and two from Finland; no case has been published in Denmark. Hanssen has encountered one case himself, and gives the details of this and of ten other cases at the Christiania general hospital. The patients were four women and seven men, aged from 15 to 37; two were healthy when the acute dilatation occurred, and in two other cases the dilatation occurred after an operation on the knee. All the patients died in from one to three days. The correct diagnosis was made in only two cases; in two the trouble was supposed to be poisoning from the antiseptic that had been used. In the others ileus or peritonitis was assumed. It seems to be the general rule that the first case, at least, of acute dilatation of the stomach that occurs in a hospital is never recognized as such. He lays great stress on careful preparation for operations and careful diet during convalescence from acute diseases, especially typhoid, as important in prophylaxis. If the dilatation has occurred, rinsing out the stomach, resting it completely afterward, and stimulants, especially saline infusion, are the main points in treatment. Neck advocates lavage of the stomach three times a day as the general rule. It may be necessary to raise the pelvis to facilitate the outflow of the fluid. Placing the patient in the ventral decubitus has proved effectual in the experience of some clinicians, but in Rosenthal's case harm resulted, and Borchardt has reported aggravation of symptoms from the "cow position" (*Lage à la vache*), recommended by Albrecht. Landau, Hanssen quotes, compares this position treatment with taxis in hernia. Kelling recommends raising the pelvis, the patient lying on the left side. Engström suggests that possibly good might result from introducing a speculum into the vagina, suddenly spreading it and thus pushing the intestines out of the small pelvis. Fürstner has reported success in some mild cases with Faradization and Erdmann with cold packs. Atropin has been recommended, but Hanssen protests that this has a weakening influence on peristalsis. In an operative case reported by Lennander and one by Sommarin the acute dilatation of the stomach was found accompanied by volvulus of part of the small intestine. In an additional case reported by Hanssen in which the acute dilatation came on a few days after a cancer operation, the symptoms subsided under lavage of the stomach and saline infusion, but there was an acute exacerbation nine days later and necropsy disclosed volvulus of the jejunum. Kehr and Tschudy, among others, have been successful with gastro-enterostomy, but most writers warn against operative interference. An early diagnosis and prompt measures for relief will generally forestall the necessity for an operation. The article is in German.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

LA STENOSE DU PYLORE, PAR HYPERTROPHIE MUSCULAIRE CHEZ LES NOURRISSONS. Par M. Pierre Fredet, Chirurgien, et M. Louis Guillemot, Médecin des Hôpitaux de Paris. VI cong. de gynéc., d obst., et de paediat., tenu à Toulouse en Septembre, 1910. Paper. Pp. 83, with illustrations. Toulouse: Librairie de l'Université, 14, rue des Arts (Square du Musée), 1910.

EMANUEL SWEDENBORG'S INVESTIGATIONS IN NATURAL SCIENCE AND THE BASIS FOR HIS STATEMENTS CONCERNING THE FUNCTIONS OF THE BRAIN. By Martin Ramstrom. (Till Kungl. Vetenskaps-Societeten i Uppsala vid dess 200-Arsjubileum af Uppsala Universitet. Den 19 November, 1910.) Paper. Pp. 59, with 4 illustrations. University of Uppsala, 1910.

REPORT ON HIGHER EDUCATION IN THE STATE OF NEW YORK. For the School Year ending July 31, 1909. Reprinted from the sixth annual report of the Commissioner of Education of the State of New York as submitted to the Legislature Jan. 24, 1910. Paper. Pp. 516. Albany: New York State Education Department, 1910.

TASCHENBUCH DER PATHOLOGISCHEN ANATOMIE. Von Dr. Edgar Gierke. I. Allgemeiner Teil. II. Spezieller Teil. Dr. Werner Klinkhardt's Kolleghefte. Heft 5 and 6. Paper. Price, 3 and 4 marks. Pp. 143, with 69 illustrations, and 207, with 58 illustrations. Leipzig: Dr. Werner Klinkhardt, 1911.

MOTO-SENSORY DEVELOPMENT. Observations on the First Three Years of a Child. By George V. N. Dearborn, Professor of Physiology in the Tufts College Medical and Dental Schools, Boston. Educational Psychology Monographs. Cloth. Price, \$1.50. Pp. 215. Baltimore: Warwick & York, 1910.

THE PROPHYLAXIS AND TREATMENT OF INTERNAL DISEASES. Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M.D., Professor of Medicine, Medical College of Ohio. Second Edition. Cloth. Price, \$5. Pp. 172. New York: D. Appleton & Co., 1910.

CLINICAL PATHOLOGY IN PRACTICE. With a Short Account of Vaccine-Therapy. By Thomas J. Horder, M.D., Medical Registrar and Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital. Cloth. Price, \$3. Pp. 216, with 6 illustrations. New York: Oxford University Press, 1910.

HAUT- UND GESCHLECHTSKRANKHEITEN. Von Dr. Felix Pinkus, Privatdozent. Leitfaden der praktischen Medizin, herausgegeben von Prof. Dr. Ph. Bockenheimer, Berlin. Band II. Paper. Price, 7 marks. Pp. 272, with 68 illustrations. Leipzig: Dr. Werner Klinkhardt, 1910.

UEBER DIE VERSCHIEDENEN LYMPHOIDEN ZELLFORMEN DES NORMALEN UND PATHOLOGISCHEN BLUTES. Von A. Pappenheim in Gemeinschaft und Mitarbeit mit A. Ferrata. Paper. Price, 6 marks. Pp. 132, with illustrations. Leipzig: Dr. Werner Klinkhardt, 1910.

A MANUAL OF PHARMACY FOR PHYSICIANS. By M. F. DeLorme, M.D., Lecturer on Pharmacy and Pharmacology, Long Island College Hospital, New York. Second Edition. Cloth. Price, \$1.25 net. Pp. 199, with 19 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Herausgegeben von Dr. Carl Oppenheimer in Berlin. Twenty-Sixth and Twenty-Seventh Instalments. Paper. Price, 5 marks each. Pp. 241 to 400 and 401 to 595. Jena: Gustav Fischer, 1910.

INNERE MEDIZIN. Von Dr. Georg Zuelzer. I. Teil. Leitfaden der praktischen Medizin, herausgegeben von Prof. Dr. Ph. Bockenheimer, Berlin. Band III. Paper. Price, 7.50 marks. Pp. 330, with illustrations. Leipzig: Dr. Werner Klinkhardt, 1911.

LEHRBUCH DER UROLOGIE UND DER KRANKHEITEN DER MÄNNLICHEN SEXUALORGANE. Von Dr. Alfred Rothschild, Spezialarzt für Urologie in Berlin. Paper. Price, 13.50 marks. Pp. 522, with 162 illustrations. Leipzig: Dr. Werner Klinkhardt, 1911.

SECURING EFFICIENCY IN RAILROAD WORK. Story of an attempt to apply Scientific Management to Some Departments. A Lecture delivered at Harvard Nov. 16, 1910. Paper. Pp. 38. New York: Harrington Emerson, 30 Church Street.

FOURTH REPORT OF THE BABIES' DISPENSARY AND HOSPITAL OF CLEVELAND. For the Year Ending Sept. 30, 1910. Paper. Pp. 47, with illustrations. The Babies' Dispensary and Hospital, 2500 East Thirty-Fifth Street.

PRINCIPLES OF THERAPEUTICS. By A. Manquat, National Correspondent to the Académie de Médecine. Translated by M. Simbad Gabriel, M.D. Cloth. Price, \$3 net. Pp. 298. New York: D. Appleton & Co., 1910.

PUERPERAL INFECTION. By Arnold W. W. Lea, M.D., Lecturer in Obstetrics and Gynecology, the University, Manchester. Cloth. Price, \$9. Pp. 384, with illustrations. New York: Oxford University Press, 1910.

CARE OF THE PATIENT. A Book for Nurses. By Alfred T. Hawes, M.D. Cloth. Price, \$1 net. Pp. 173, with 6 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

TWENTY-FIRST ANNUAL REPORT STATE OF NEW YORK STATE COMMISSION IN LUNACY. Statistics of the Insane, 1908-1909. Paper. Pp. 85, with illustrations.

ANNUAL REPORT OF THE MOUNT SINAI HOSPITAL OF BOSTON. For the Eighth Year. Jan. 1 to Dec. 31, 1909. Paper. Pp. 29. 17 Staniford Street, Boston.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 2

CHICAGO, ILLINOIS

JANUARY 14, 1911

WHY THE GENERAL PRACTITIONER SHOULD STUDY THE SURGICAL DIAGNOSIS OF GASTRIC AND DUODENAL ULCER

REPORT OF CASES

J. N. HALL, M.D.
DENVER

I base my conclusions on 203 successive cases of gastric and duodenal ulcer, of which ninety-three cases came to operation or exploration. The operations were done chiefly by Drs. Craig, Fleming, Freeman, Lyman, and Perkins of Denver, several by other Colorado surgeons, and a few by the Mayos and other surgeons outside of Colorado. To all of these gentlemen I make my acknowledgments, as well as to the physicians with whom I have seen the majority of the cases. Fifty of these cases formed the basis of a previous report.

In the study of this disease we may find, I believe, a greater diversity of opinion among clinicians of experience as to frequency, symptomatology, gravity and treatment, than in the study of any other serious and common ailment. We find in the recent literature excellent reports of hundreds of cases of gastric and duodenal ulcer by the operating surgeons studied chiefly from the point of view of the surgeon, but throwing little light on certain questions of the utmost interest to the medical man. On the other hand, we have long discussions from the medical side giving minute conclusions as to the rarity or frequency of ulcer, as to its symptomatology, as to the danger of obstruction of the pylorus, or the development of cancer, and as to the medical treatment of the disease, with, in many cases, a total disregard of the abundant material which has been furnished us by the surgeons in recent years, and which offers the physician his greatest opportunity for adding to his knowledge of the disease. Many writers offer conclusions freely as to diagnosis and treatment who apparently, from the utter absence of any mention of the matter, have never seen half a score of such patients on the operating table. The moderate number of the cases which I have seen prevents my making any very positive statements in regard to many interesting features of peptic ulcer.

I shall be ready to modify those given when convinced of the need by reports of much larger numbers of cases presented by clinicians of greater experience who see these cases as I do, from the standpoint of the medical consultant, rather than from that of the family physician, the surgeon, or of the gastro-enterologist. In my opinion, one ought to correlate his knowledge of the medical aspects of ulcer with that to be obtained on the autopsy table, and vastly more important, with that

from the operating room, and season it all with what wisdom he may have gathered from a wide, general medical experience before being over-positive in his conclusions. I regret my inability to reach any such ideal, but since I have been asked for them, I shall give the best conclusions that my experience permits me to draw.

I should state in advance that these cases were derived from a general consultation practice, not 5 per cent. of them being strictly personal cases. They should not be regarded at all as being Denver cases, since they came from a dozen states. They therefore probably represent a much more severe type of disease than would an equal number of cases seen in a large dispensary service or in family practice. As Jacobi pointed out in the discussion on ulcer in the Section on Practice of Medicine at the last meeting of the American Medical Association, we must be extremely careful not to draw too general conclusions from the study of material drawn from a single source, because severe cases present themselves in one clinic, and mild ones, more nearly representing the general average type, in another.

In a previous article,¹ I drew attention to the great advantage of studying the symptomatology of ulcer from cases in which the diagnosis was established by operation. I undoubtedly erred somewhat in my conclusions, since the milder cases do not come to operation, and their symptomatology should be studied separately.

My further study has confirmed my previous opinion that the symptoms and signs most constant and valuable in the diagnosis of ulcer rank about as follows (taken from previous series):

1. Pain 82 per cent.
2. Persistent sour stomach..... 80 per cent.
3. Tenderness 70 per cent.
4. Vomiting 66 per cent.
5. Rigidity 60 per cent.

Vomiting of blood occurred in the ninety-three cases with operation seventeen times, or 18.3 per cent.; melena was noted in nine cases, or 9.6 per cent. Thus blood was passed or vomited in approximately 28 per cent. of the series.

I have classed the ulcers, after reviewing my previously reported cases, as gastric, pyloric and duodenal, there being fourteen, sixty-one and fifteen in these respective classes in the complete series, while in three cases in which operation was done elsewhere I did not learn of the exact location.

In twelve of the sixty-one pyloric cases only an obstructing scar of previous ulcer existed. I do not doubt that many of my pyloric cases would be classed as duodenal by many physicians. The overwhelming

1. The Diagnosis of Gastric Ulcer as Tested by Operation, *Am. Jour. Med. Sc.*, May, 1909.

majority of ulcers demanding operation are evidently situated close to the pylorus. In this series obstruction in some degree was present in practically all cases of pyloric ulcer. Many of the definitely gastric ulcers were brought to operation, because of perforation, impending perforation, disability because of adhesions or development of cancer, but not often from dilatation of the stomach.

Cancer was proved in six cases, with definite evidence of ulcer as the starting point, a percentage of 6.4. In several of these, perfectly typical histories of ulcer extended over periods of years. In three other patients the presence of a tumor developing on a previous ulcer was assumed to indicate cancer from the extensive glandular involvement and rapid downward course. Two of these were alive when last reported. No fair-minded clinician without a vastly greater experience on which to base his opinion can properly maintain in the face of such evidence as this, and the reports from numerous surgeons and pathologists, that cancer is not a frequent development in cases of peptic ulcer. The mere fact that in the milder type of cases occurring in average family practice cancer is not often noted is not to be balanced against such showings as I have quoted.

My conclusions, from a study of the previous series, that pyloric ulcer is likely to leave permanent obstruction, if it heals, or to lead to cancer if it does not, is confirmed by my further experience. If medical treatment, which I try faithfully in the milder cases without obstruction, does not give a practical cure in a few months, I cannot conscientiously continue it, nor can I believe it right that advice, from those not thoroughly familiar with the surgical aspects of this disease, to continue medical treatment should prevail. Unfortunately much of the current literature, especially in text-book form, has been promulgated by those who see only the medical aspects of ulcer, and who are, I believe, prejudiced against surgical procedures without proper reason.

Since the introduction of the modern gastro-enterostomy I have seen no case of "vicious circle." The results in sixty-eight of the seventy-nine cases in which gastro-enterostomy was performed are classed as good, and in the more recent ones, better selected than those of earlier years, they are almost uniformly good.

In six cases exploration only was done, cancer or other hopeless condition presenting. Out of six cases of perforation four were closed by suture without gastro-enterostomy, the latter operation being omitted because obstruction did not exist or the patient's condition was too desperate. Three of the patients recovered. In one case Finney's operation was done, one ulcer was excised, and adhesions were broken up in one case. In one case in which operation was done elsewhere I did not learn the exact nature of the operation performed. I am satisfied that we have not excised so many ulcers involving the pylorus as we should, for the tendency is, because the results of gastro-enterostomy are so good, to avoid the heavier mortality involved in excision. I believe that Rodman's operation is demanded if much infiltration exists around the ulcer.

I believe that more attention must in future be given to the group of signs and symptoms which we have considered above, and less to the laboratory findings if we are to make early and correct diagnoses in cases of peptic ulcer. The question in the severe cases is commonly whether to operate or not to operate, and this is never settled in the laboratory. While we should give

due weight to the analysis of the gastric contents, the search for occult blood, the leukocyte count, and other laboratory procedures, we should hold all these factors subservient to the history and bedside examination. A reliable history of continuous sour stomach is of more value than a gastric analysis, and a history of hematemesis than a report of occult blood in the stools. Rigidity and tenderness, as determined by the trained clinician, outweigh all the evidence from the laboratory in these cases.

How deceptive the inferences to be drawn in a certain type of gastric disease may be, is illustrated by the following case, not included in the list, the patient being now in the hospital.

A man of 35 had been well until four months previously. Then persistent sour stomach, pain, vomiting and hematemesis came on. I found that he had lost 15 pounds in weight; the stomach was dilated until its lower margin was 3 inches below the navel; splashing was noted, and rigidity and tenderness existed to the right of the navel. The diagnosis of pyloric ulcer was confirmed by the withdrawal of three pints of retained contents after an Ewald test meal, and by the high hydrochloric acidity reported by my assistant, Dr. Love. History, physical examination and laboratory report all pointed to ulcer, yet the glands about the ulcer found at the pylorus were later reported by Dr. W. H. Bergtold to present an exquisite picture of adenocarcinoma. The great thickening about the ulcer had already led Dr. Leonard Freeman and me to the conclusion that only very extensive resection of the stomach offered any hope, and he therefore had resected more than half of the lower end of the organ and removed all of the enlarged glands. This patient is now gaining a pound a day.

To those who advocate medical treatment in pyloric ulcer I commend a careful consideration of this case, for I fully believe that any but immediate surgical treatment would have been criminal. I could mention several more or less similar instances in which the persisting ulcer apparently kept up the high acidity long after cancer had developed. We must not exclude cancer because of laboratory reports pointing toward ulcer if we are to do justice to these patients.

Fortunately the evidence on which the decision as to operation in gastric diseases is based is of such a character that we need not hesitate to act on it. In these cases I have found ulcer when I suspected cancer, and cancer when I suspected ulcer to be present; pyloric obstruction from other cause than either ulcer or cancer; gall-bladder disease when duodenal ulcer was suspected and many other conditions more or less different from what I had believed to exist, but I have yet to see the abdomen opened in a case with such a general symptomatology as I have indicated above without finding a surgical condition demanding relief, or else so far advanced as to be beyond help. We do not operate in these cases for ulcer or for cancer, but for some condition, whatever it may be, which we believe to be beyond medical help. The indications which lead the trained clinician to explore the abdomen do not often deceive him, for they fortunately are not present in neurotic, hysterical, tabetic and other patients who have made so much trouble in the past as to gastric diagnosis.

In deciding on the advisability of medical or surgical treatment in any given case of peptic ulcer which has attained a sufficient degree of severity to lead to the consideration of the latter method, we may state the advantages of medical treatment about as follows:

1. Avoidance of immediate operative and anesthetic dangers.
2. Avoidance of possible vicious circle, recurrence of jejunal ulcer, ventral hernia, post-operative adhesions, etc.

Against these advantages we should set the following dangers:

1. Likelihood of failure of medical treatment.
2. At least an even chance that the patient will relapse if temporarily cured.
3. Dangers of development of pyloric stenosis through presence of an active ulcer at that point, or spasm caused by its irritation, or cicatricial stenosis following its healing.
4. Danger of hemorrhage or acute perforation.
5. Danger of the development of cancer on the base of the ulcer (68 per cent. of the pylori excised by the Mayos for cancer showed origin in an ulcer, while 71 per cent. of those excised under the belief that they were cases of ulcer showed cancerous changes beginning. Wilson). Nearly 10 per cent. of our patients operated on showed cancer.
6. Danger of adhesions, which cripple the action of the stomach, obstruct the gall-passages, produce serious pain and often require late operation.
7. Dangers from a troop of late complications of slowly developing perforation, amongst which I have encountered peritonitis, subphrenic abscess, empyema, pyopneumothorax, pneumonia, perforation through the lung, septic pericarditis, mediastinitis, pancreatitis, suppurative processes about the liver and gall-ducts and general sepsis. Unfortunately many cases are reported under such headings without a recognition of the origin of the process in a peptic ulcer.
8. The development of such a condition of anemia and malnutrition from the crippling of the digestive apparatus as to lead to neurasthenia, hysteria, and various functional nervous diseases, or to pave the way for an easy and often fatal infection by the tubercle bacillus, pneumococcus, influenza bacillus, etc.

In my opinion the medical man does not do justice to his patient in such cases as we are considering if he does not present to him clearly the grave dangers of delay if prompt improvement does not follow medical treatment. The latter should be given a fair trial for several weeks, but if practical restoration to permanent health be not obtained, operation should be most carefully considered. Fortunately, the truth of Billroth's saying of thirty years ago that "internal medicine must become more surgical," is gradually receiving recognition.

308 Jackson Block.

REPORT ON SIXTEEN SYPHILITIC PATIENTS TREATED WITH EHR- LICH'S SALVARSAN (606)

M. F. ENGMAN, M.D., W. H. MOOK, M.D.
AND JOHN W. MARCHILDON, M.D.

ST. LOUIS

In September Dr. Simon Flexner of the Rockefeller Institute sent us a supply of Ehrlich's salvarsan (606), to be used for experimental purposes. The cases that we have selected for treatment with this remedy belong to unusual types and to those rebellious to the usual methods of treatment. The routine followed in every instance included a preliminary examination of the eyes, the nervous system, and a complete physical examination by competent specialists. Complete urinalyses, differential and leukocyte counts, and the Wassermann reaction were made before and after each injection. In a majority of the cases the injections were made according to Wechsellmann's method. The Junkermann method was used in the later cases, however, following instructions from Dr. Flexner. A few of the patients treated by injections according to Wech-

sellmann's technic required a small dose of morphin to relieve the pain. In all in whom the Junkermann method was used the injection was preceded by hypodermic of $\frac{1}{4}$ grain of morphin, and in every case a second dose of morphin was necessary to relieve the severe pain, which usually lasted from ten to twelve hours. Those injected after the Wechsellmann method suffered only a moderate amount of pain and in only one case was it severe and lasting.

CASE REPORTS

CASE 1.—The patient, M. Q., a man aged 22, seen at the Skin and Cancer Hospital, was infected with syphilis four years previously. Treatment had been irregular, and followed only when lesions were present. The patient entered the hospital in June, 1910, at which time he had a large tubercular ulcerating syphilid involving the upper two-thirds of the right forearm; another 8 inches in diameter on the leg, and an ulceration of the inner surface of the left nostril, one inch in diameter. The patient was treated with mercuric bichlorid injections daily for ten months; also by local treatment of mercuric bichlorid packs, various salves, and milder dressings. Very little improvement resulted. He was then given injections of a 10 per cent. salicylate of mercury mixture once or twice a week up to saturation, together with iodids, forced feeding, and rest in bed for a month.

Improvement was noted for a time, the lesions showing some tendency to heal, but only temporarily. Oct. 6, 1910, the Wassermann reaction was still positive. The ulceration on the forearm was 2 inches in diameter, the one on the leg was 5 inches, and the one in the nostril was the size of a nickel. The urine was normal; the leukocyte count was 16,000. Oct. 6, 1910, the patient was given 0.6 gm. of salvarsan under left scapula according to Wechsellmann's method. Considerable pain followed, lasting about twelve hours. The next day the site of the injection was infiltrated, slightly painful, and presented a tumefaction 4 inches in diameter.

Four days later the ulceration in the nose had healed entirely, and the ones on forearm and leg showed marked improvement. Twelve days later, the forearm was healed and the leg ulcer was only 2 inches in diameter, and healing rapidly. The Wassermann reaction was still positive, but eighteen days after injection it was negative, and all of the lesions had entirely healed, and the patient's condition was wonderfully improved. November 15 he was discharged from the hospital apparently cured. December 7 the patient felt well and had gained 12 pounds. The leukocyte count was 8,000.

CASE 2.—M. L., a girl aged 6, a patient of Dr. Blair, was treated at the St. Louis Children's Hospital. July 27, 1910, an ulcer was noticed on the left side of the soft palate, which increased rapidly in size. Injections of cyanid of mercury were continued for three days in increasing doses. August 15 a small indurated gummatous lesion appeared on the right thigh. In the next few days several small lesions appeared on the extremities. All of them became ulcerated, and increased rapidly in size within a few days. The mercury injections were increased, but the cutaneous lesions grew worse.

September 8 the injections were discontinued and $\frac{1}{10}$ grain doses of calomel were given three times a day, with increased doses of potassium iodid. September 30 the pupils became widely dilated, the patient could not see, was very restless, stammered in speech, and cried continuously. She developed tetanic convulsions that night, and morphin was used. October 1 there were muscular twitchings, retraction of the head, rigid spine, unequal pupils, Cheyne-Stokes breathing, weak and irregular pulse. Mercury inunctions were begun and potassium iodid given by enteroclysis. October 3 the symptoms of October 1 had nearly disappeared; October 5 the Wassermann reaction was positive. A thorough physical examination was made preparatory to the administration of Ehrlich's salvarsan, with the following results: Weight 42 pounds; scars over the extremities, some of them rather pinkish in color, showing recent healing. There was swelling and induration of the right cheek, several ulcers on the mucous membranes of the

mouth. The child was very weak and pale, and cried continuously. The pulse was weak and rapid; there was a foul, unbearable odor emanating from the mouth; heart and vital organs normal. Examination of the eye by Dr. Charles showed pupils dilated and maximum and absolutely irresponsive to light but child was blind from some central disturbance. The fundus was normal. Neurologic examination by Dr. Bliss showed knee-jerks present, no Babinski of ankle-clonus; organic reflexes normal, cutaneous sensibilities acute. October 6, 0.15 gm. of salvarsan was prepared by the Wechsellmann method and injected into the cellular tissue under the left shoulder. The temperature was 99, respiration 26 and pulse 132, some hours before the injection. The leukocyte count was 12,000. The patient was miserable and restless, and morphin was administered during the night. No albumin or casts were found in the urine.

October 7, there was a moderate amount of swelling at the site of injection; no albumin or casts; right cheek more swollen; temperature 100; pulse 152; leukocyte count 18,000.

October 8, patient was very restless, pulse 120; respiration 32; temperature 102; leukocyte count 31,500; casts and albumin; odor from mouth worse.

October 9, there were albumin and casts in urine, leukocyte count, 33,600; extremities cold; scar tissue at site of healed ulcers had sloughed, leaving deep ulcerations; urine and stools involuntary; stimulants administered.

October 10 to 13, great improvement; patient sitting up in bed; some diarrhea; pupils reacted to light; exudate from ulcers; crying and moaning ceased.

October 14, pupils reacted to direct and consensual light; ulcers improving rapidly, both on the skin and in the mouth.

October 16, swelling of right cheek much less; stool semi-solid; appetite good; leukocyte count 18,200; albumin and casts.

October 17, patient voluntarily stated that she felt much better; great improvement was evident; much less odor from mouth.

October 27, temperature 98; pulse 90; respiration 22; patient counted fingers with either eye at 20 feet; cutaneous ulcers healed; patient walked about room and was gaining in weight; there was still a free flow of saliva; leukocyte count 10,000; albumin and casts.

November 4, a thorough physical examination was again made; all skin ulcers healed; two small ulcers on mucous membranes of gums not yet healed; heart normal; digestive tract normal; no albumin or casts; leukocyte count 8,200; neurologic examination normal; pupils equal and responded to light and accommodation; vision normal.

November 15, mouth was entirely well, except small ulcers on gum which were healing slowly; no albumin or casts. The patient seemingly well.

CASE 3.—I. B., a City Hospital patient, aged 38, was infected with syphilis fifteen years previous to being seen, since which time he has taken treatment at irregular intervals. Since June, 1910, the patient has had tubercular ulcerating syphilis of both sides of the nose; hard palate and septum both perforated; the septum ulceration still showed activity. He was treated with daily injections of mercuric bichlorid, iodids internally, and various local applications until October 6, with very little benefit. Oct. 6, 1910, physical examination showed no abnormalities except nose lesions and purulent discharge from nose and pharynx; urine normal; leukocyte count 17,000; Wassermann reaction positive. Injection was made of salvarsan, 0.6 gm., after the method of Wechsellmann, subcutaneously under the left scapula. Three days later the ulcers on the nose showed marked improvement. No temperature or pulse reaction followed and the urine remained normal. Improvement in the ulcers continued rather slowly for four weeks, when they became active again, and in two weeks more were slightly larger than when the injection was given, and involved adjoining scar tissue that had been produced by mercurial injections. Seven weeks later the Wassermann reaction was positive. A second dose of salvarsan, prepared according to method of Junkermann, was injected into each buttock. Urine normal; leukocyte count 11,335. December 2 the ulcerations greatly improved and showed a tendency to heal; leukocyte count 10,925; urine contained no albumin but contained a few granular casts. December 12 the ulcers were healing rapidly; leukocyte count 12,000.

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CASE 4.—E. G., a City Hospital patient, a man aged 29, was infected with lues in March, 1910, and entered the hospital in June. Examination showed a slight protrusion of bone over the sternum, extremely sensitive to the touch, which was present for two weeks; reflexes normal, except for general hyperesthesia; lymphatic glands in the axillæ, epitrochlear and inguinal regions showed some enlargement. October 6 the Wassermann reaction was positive; urine normal; leukocyte count 14,800. Injection of salvarsan, 0.4 gm., was made subcutaneously under the scapula, after Wechsellmann's method.

Five days later the patient's general condition was greatly improved and there was less pain over the sternum; urine normal; leukocyte count 18,200; no temperature or pulse reaction; site of injection somewhat painful for 12 hours; tumefaction present at injection site; Wassermann reaction positive. One month later his physical condition was fine; site of injection still indurated, though not painful, and consisted of a slight elevated discoid mass three inches in diameter. There was a superficial necrosis appearing on the glans penis. The patient had never had a lesion on this area. He had gained 7½ pounds, and was up to normal weight; his general condition was very good. Six weeks later the lesion on the glans had become much deeper, larger and phagedenic in character; urine normal; leukocyte count 14,300.

Seven weeks later the ulceration on the glans was quite deep. A piece excised and prepared according to Levaditi's method shows no *Spirochæta pallida*; Ducrey's bacillus not found. The patient did not feel well and had pain in right humerus; the sternum was slightly painful again; x-ray picture showed periosteal thickening of middle of shaft of humerus and some involvement of medullary portion. Eight weeks later the ulcer on the glans was healing; Wassermann reaction positive; urine normal; leukocyte count 13,650.

CASE 5.—F., a man aged 45, seen at the Jewish Hospital, referred by Dr. S. I. Schwab, had been infected with syphilis nine years previously, had very pronounced secondaries, and was treated for several months. He was well until five years before the time of examination, when his present trouble began. The patient was well developed and his color and nutrition were good; expression depressed; answered questions intelligently, but slowly; eyes showed diffuse swelling of lids; redness and tenderness over right supraorbital region. Urinary incontinence was present at times; there was vertigo and double vision, and occasionally patient complained of continuous pain and tenderness in muscles, with marked weakness for the previous four years. Both legs had been swollen lately, with tenderness over tibiæ; pain in chest; trunk rigid when walking; frontal headache on right side; all reflexes exaggerated. The spleen was slightly enlarged, and felt one-half to 2 inches below costal margin. On each tibia was an elevated hard mass 4 inches long and 2 inches wide, somewhat reddened and tender. The urine contained few casts. October 10 injection was made of 0.4 gm. of salvarsan after the method of Wechsellmann. Four days later there was less pain in chest and tibiæ and the tibial tumors were smaller. Ten days later there was marked improvement; redness and induration of tibiæ nearly gone; no pain in chest; no albumin or casts in urine. Fifteen days later the patient felt fine; there was no pain in chest or over tibial nodules. The skin over tibiæ was loose; there was no pain, but the bone was still enlarged and rough; leukocyte count 9,800. Spinal fluid showed no cellular elements and was clear. The patient was discharged from the hospital on request, apparently well. The Wassermann reaction was positive.

CASE 6.—K. M., aged 25, a patient at the Skin and Cancer Hospital, gave no history of syphilis, but stated that her present lesion began on the right side of the nose as a small red papule four years previously. In July, 1910, the lesion consisted of a deep ulceration which had destroyed the lower right half of the nose and adjoining cheek for a distance of 1 inch, and almost the entire upper lip. The remaining sep-

tum was ulcerated and the superior maxillary bone necrosed, exposing the upper incisors and right canine in their entirety. The ulceration was granulomatous and there was a considerable discharge of pus.

Physical examination revealed no abnormalities; urine was normal; leukocyte count 8,000; Wassermann reaction positive. The patient had been treated weekly with intramuscular injections of 10 per cent. salicylate of mercury with some improvement.

October 25, injection was made subcutaneously of 0.6 gm. of salvarsan under the left scapula, after the method of Wechselsmann. The pain lasted two hours; leukocyte count was 12,000 twenty-four hours later. Six days later the patient felt fine and the lesion looked much better; discharge less; healthy granulations in ulceration; leukocyte count 7,500. Four weeks later the ulceration of the nasal membrane had healed, but the edges of the skin of the nose showed pearly epithelial proliferation. Five weeks later, sections excised from the edge showed the lesion to be an epithelioma. The teeth became much more firmly set in the alveolar processes; necrosed bone exposed; the nasal ulceration was healed but an epithelioma had developed on a syphilitic ulceration and x-ray treatment of the epithelioma was begun; leukocyte count 8,665.

CASE 7.—A. D., a woman aged 52, a patient of Dr. Grindon, had had good health until five years previously. Then she began to have nocturnal headaches, continuing for three years with great loss of weight. Lesions on trunk and extremities appeared in August, 1909, which left scars characteristic of syphilis. The patient had active lesions on her face which appeared in January, 1910, and which extended and continued to appear as tubercular ulcerations with crusting, rupial lesions over the entire face. The lids were much swollen, closing one eye completely; puffy and everted; nose and chin were infiltrated and cheeks present a mass of tubercular syphilis. On removing the crusts the underlying surface was of deep raw-ham tint, superficially ulcerated at many points. Pharyngitis and characteristic congestion of the anterior pillars were present. The patient had been under treatment at irregular intervals. October 30, the Wassermann reaction was positive; urinary examination negative; heart normal. November 3, leukocyte count 12,500; 0.5 gm. of salvarsan was injected under the scapula by Dr. Engman after method of Wechselsmann. November 4, leukocyte count was 13,200; November 5, it was 12,000; four days later it was 12,000; Wassermann reaction positive; marked improvement of lesions. The infiltration had practically disappeared; outline of eyelids and lips was normal; discoloration as deep as ever. Two weeks later the patient was transferred to out-clinic. The discoloration was much less; no other remaining evidence of disease except scars on forehead and nose. Eighteen days later the Wassermann reaction was positive; discoloration fading, semifluid mass at site of injection slowly disappearing; no pain.

CASE 8.—G. McD., a man aged 24, a patient at the Skin and Cancer Hospital, applied for treatment in 1909 for scaly lesions on nose, eyebrows, elbow, neck and shoulders and was treated for two months with intramuscular injections of mercuric bichlorid after which most of the lesions disappeared; stopped treatment and a relapse of the lesions occurred within a short time. He stated that his treatment had been irregular, because a cessation of treatment had always been followed by an immediate relapse. Nov. 6, 1910, he entered the hospital, at which time all of the former erythematous, papulo-tubercular and scaly lesions were again active. The lesion on the right elbow was ulcerated and there were small ulcerations of the nasal septum. The patient's physical condition was otherwise normal; urine normal; leukocyte count 13,000; Wassermann reaction positive. The patient was given 0.5 gm. of salvarsan after the method of Wechselsmann. In preparing the mixture the salvarsan was dissolved in 0.1 per cent. sodium hydroxid solution instead of 20 per cent. In neutralizing, a large amount of sodium hydroxid was necessary, so that there were 30 c.c. of the mixture. This was injected subcutaneously under each scapula, November 8, and was followed by consid-

erable pain for several hours at the site of the injection. Morphine gave relief. There was no pain twenty-four hours later; sites of injection were elevated and indurated; lesions paler. Leukocyte count was 17,650; urine normal. Eight days later sites of injection were infiltrated, but not painful; lesions on face nearly gone; patient said he felt better than he had for several years. Fifteen days later most of the lesions had entirely disappeared, and the patient had gained 6 pounds. Three weeks later all lesions were entirely well except the ulcer on the elbow, which had healed, and the only remnant of lesion was an erythematous, thin scar. The improvement was striking; Wassermann reaction positive; urine normal. Four weeks later the patient was apparently cured. The leukocyte count was 8,200 and the Wassermann reaction positive.

CASE 9.—Baby P., a bottle-fed private patient, referred by Dr. Doyle, was first observed Oct. 3, 1910, when she was 11 weeks old. The entire body was covered with an erythematous, scaly, macular eruption. The neck, trunk, and especially the genito-crural regions, were involved in confluent patches of the so-called luetic eczema. Both ears discharged pus, showing middle-ear involvement. The mother stated that the eruption had appeared two weeks after birth. The ear affection appeared a week before observation. The child's face had the characteristic, wrinkled, "old-man" appearance; she had "snuffles," and presented a typical congenital secondary syphilis. The Wassermann reaction, however, was negative. In view of the clinical diagnosis, injections were prescribed, and followed by immediate improvement in the general condition; the ears became well and the eruption disappeared rapidly. The injections were too irritating after a week, and powders containing one-half grain of mercury with chalk were given three times a day. The improvement was rapid, and the eruption disappeared without local treatment.

November 18 it was decided to give the patient salvarsan. At this time there were no skin symptoms of lues. The injection was prepared after the Wechselsmann method, and 0.1 gm. was injected subcutaneously under the left scapula. Two days later there was a large elevated tumor of infiltration as large as a guinea-egg. The general condition remained good, except that the tumor from the injection was large and red at times, raising and receding. Twelve days later the tumor was as large as ever and the baby was very fretful. The temperature varied from 100 to 102 F. The tumor showed some infiltration, though there was no central softening. The luetic lesions showed no signs of recurrence.

On December 1 the nodule showed fluctuation and was incised. A small amount of fluid blood and pus was discharged.

December 6 the site of the injection was an elevated, indurated infiltration, 2 inches long, 1 inch wide and three-fourths of an inch high. The edges of the incision wound showed the mass to be organized, hard, and with no tendency to heal. The mother stated that there was constant constipation, relieved only by enemas, and that the general condition was not very good. Sleep was irregular, and at times considerable perspiration appeared over the forehead and scalp. Crying was paroxysmal. Nourishment was taken from the bottle at regular times. There was no indigestion.

December 12 there was marked improvement in the general condition. The site of the injection was still open; the discharge was serous.

CASE 10.—A. J., a private patient, aged 2 months, referred by Dr. Henckler, was first examined Nov. 13, 1910. The baby was covered with an universal, typical, macular eruption of syphilis, was very much emaciated and presented the characteristic "old-man" appearance, with "snuffles." The baby was born with the eruption on the hands, and moist papules around the anus. The Wassermann reaction was positive only to moderate degree. The baby was practically in a dying condition when first examined. Mercury with chalk was given three times a day for five days and some improvement was noted. November 18 it was decided to give an injection of salvarsan. Accordingly, 1 c.c. of a 6 c.c. mixture of 0.4 gm. prepared after Wechselsmann's method, was injected subcutaneously under the left scapula. The baby was so emaciated that there

was no subcutaneous tissue at the site of injection. It was first decided to give the treatment to the mother, but the child was in such a bad condition that it was deemed advisable to treat him directly to save time. The patient died twenty-four hours after the injection and a necropsy was not obtainable.

CASE 11.—W. McG., a man, aged 25, referred by Dr. Urban, was infected with syphilis, April 1, 1909, and put on treatment within two weeks. Three weeks later the secondaries appeared; three weeks after this, destructive tubercular ulcerations began to appear over his face and body, showing a rapid and malignant lues.

The patient then went to Hot Springs, Ark., where the lesions all healed under inunctions, after a seven weeks' course. The tubercular ulcerations reappeared in a short time, and when he was first observed at the City Hospital in February, 1910, most of his body was covered with large and small papulo-tubercular lesions and ulcerations. A course of injections of bichlorid cleared up all the lesions; but two months prior to admission they began to appear again at the old sites.

November 28 he had two large lesions 4 inches in diameter on the left arm, another on left thigh posteriorly, and a few smaller ones on the chest and back. The middle turbinate on the left side had sloughed away. He was pale and rather weak. The urine was normal. Physical examination showed no visceral lesions; leukocyte count 11,350; Wassermann reaction positive. An injection of 0.5 gm. of salvarsan, prepared after the method of Junkermann, was given in the buttocks, preceded fifteen minutes by an injection of $\frac{1}{4}$ gr. of morphin. The pain was immediate and very severe. A second injection of $\frac{1}{4}$ gr. was given and morphin was again necessary one hour later. Twelve hours later his temperature had risen from normal to 102 F., the pain had disappeared and he was comfortable. He stated that all of the active lesions had a peculiar tingling, burning sensation, some of them being somewhat painful.

November 29 all of the active lesions, which had only shown superficial ulceration, with much crusting, were now red, deeply ulcerated, and there was considerable reactionary inflammation. Four days later all of the active lesions, except the one on the chest, which was much paler and less infiltrated, had sloughed, with a large amount of debris and pus discharge. He gained 5 pounds in weight in four days. Six days later the leukocyte count was 15,850; urine normal. The lesions were all healthy-looking granulating surfaces, with little or no infiltration. Daily improvement was rapid and marked. The urine was normal. Nine days later the surfaces of ulceration on the arm were quite red and apparently granulating. Close inspection showed the surface to be covered with a very thin film of epithelium as though the granulating surface had been painted with a weak solution of silver nitrate. Within twenty-four hours the thin epithelium covered the entire former ulcer, which was 3 inches in diameter, apparently not growing from the periphery, as is usual in the healing of this variety of ulceration. The patient on his discharge had gained 7 pounds in ten days.

CASE 12.—A man, aged 31, a private patient, had been infected with syphilis seven years previously. Eighteen months before examination squamous syphilids appeared on the thumbs; six weeks before examination typical papular, scaly syphilids developed on his nose and chin. Scaly, squamous lesions were still present on his thumbs. Physical examination revealed no abnormalities; urine was normal; Wassermann reaction positive; leukocyte count 9,900. November 17 an injection of 0.5 gm. of salvarsan was given after the method of Junkermann. The pain was very severe for twelve hours. Ten days later the lesions were nearly all healed. The Wassermann reaction was positive.

CASE 13.—S., aged 40, was referred by Dr. Unterberg with a diagnosis of tabes dorsalis. Examination revealed the following: first nerve normal; third, fourth and sixth unequal; pupils reacted slightly, if at all, to direct light, consensually or to accommodation; ocular excursions normal; fifth nerve, bilateral hyperesthesia over the nose and forehead; eighth nerve normal; seventh, facial innervation equal on both sides;

sense of taste dull over entire tongue; tongue deviated to right on protrusion; other cranial nerves normal. Spinal nerves, cervical normal; dorsals, area of hyperesthesia on left side between third and sixth ribs, and over the abdomen in a belt extending from the lower margin of seventh rib to 2 inches below umbilicus; abdominal and cremasteric reflexes not obtainable; sensation of right leg good; left leg markedly delayed—one to two seconds; knee-jerks and Achilles reflex absent; no Oppenheim, Gordon or Babinski; movements incoordinate; Romberg sign present; Wassermann reaction positive; urine normal; leukocyte count 8,000. An injection was given of 0.5 gm. of salvarsan, after the method of Wechsellmann. Five days later the patient suffered very little pain; general condition somewhat improved. There was no change in the tabetic symptoms. Two weeks later there was no improvement.

CASE 14.—W. S., aged 19, seen at Alexian Brothers' Hospital, was admitted to the hospital with a chancre on the prepuce, generally distributed maculopapular syphilid on face and body, intense throat symptoms, with great swelling of glands of neck and lymphadenitis in both inguinal regions. The patient was placed on inunctions daily for two weeks and the symptoms were slowly improving. Nov. 17, 1910, the throat symptoms, lymph-nodes and papules were still marked. At 4 p. m. the patient was given 0.4 gm. of salvarsan, after the method of Wechsellmann. There was no pain for two weeks, after which the pain became very severe and the area at the point of injection very red. The following day pain continued, the face was flushed, and the area of injection had become very hot and painful to the touch. The pupils were dilated; patient had a diarrhea and temperature reached 100 F. The urine voided was in excess, turbid in character, and contained a large amount of precipitate of earthy phosphates. On the third day red blood-cells were present in the urine; the pain had subsided; the patient stated that he felt better than he had for two months; his expression was alert, skin perfectly clear; the entire eruption had disappeared over night. On the sixth day the Wassermann test was negative; throat symptoms had subsided; enlargement of glands was disappearing, the patient felt well and was discharged.

CASE 15.—G. R., aged 28, was referred by Dr. Lutz with a diagnosis of taboparesis. He had acquired syphilis seven years previously; no secondaries followed, and he had no internal treatment. Five months before he was seen by us he developed lightning pains in the legs, perineum, penis and testicles. Headaches were very severe during the last six weeks. The pupils were immobile to light and accommodation. Injection was made of 0.5 gm. of salvarsan on November 17, after the method of Junkermann. Examination showed Argyll-Robertson pupils, exaggerated knee-jerks, more marked on the right side, loss of pain-sense below the knee, retention of tactile sense below the knee, anesthetic cuirass 4 inches wide at the nipple-line; gastric and rectal crises and lightning pains; a slur in the speech, and the mental symptoms of incipient paresis. Two weeks later the patient showed no improvement.

CASE 16.—Mrs. C., aged 35, patient of Dr. Fischel, was referred with a diagnosis, made by exclusion, of syphilitic ulcers of the stomach. There was a definite history of syphilis, acquired three years before. Physical examination revealed no visceral lesions. Her symptoms were frequent vomiting, at times tinged with blood, and occult blood in the stools. The Wassermann reaction was positive; leukocyte count 9,000; urine normal. Injection was made October 16 of 0.5 gm. of salvarsan under left scapula after the method of Wechsellmann. There was great local reaction, and two weeks later the site of the injection sloughed, leaving an ulceration the size of a dollar. Cultures from the lesion were sterile. Vomiting ceased within two weeks, and the blood disappeared from the stools. If the ulcers were syphilitic, they evidently became well in two weeks. The leukocyte count was 7,600 the next day after the injection. The history in this case is not as complete as it should be.

One is not justified, perhaps, in drawing conclusions from the observation of sixteen cases, but the following comments may be made:

The baby, two months old, who died twenty-four hours after receiving the injection was practically dying at the time, and the treatment was not responsible for its death.

Patient 3 (I. B.) was the only one to whom a second dose was administered, the first evidently not being large enough to kill all the spirochetes. He then made rapid improvement. Patients in whom lesions were quite active showed leukocytosis, which became more marked in from twenty-four to forty-eight hours after the injection, gradually returning to normal in from two to four weeks.

Patient 2 (M. L.) developed nephritis, which soon cleared up without special medication.

Patient 14 (W. S.) had blood-cells in his urine, following the injection, but they disappeared in a few days.

The two patients with nerve syphilis, Nos. 13 and 15, returned for observation later and were undoubtedly worse than they were before the injections.

In Cases 9 and 16, the injections produced sloughing. The slough in Patient 16 healed nicely three weeks later. In Case 9, the incised tumor discharged sterile serum, but was very slow in healing.

The pulse and temperature reactions were slight, with but one or two exceptions. None of the patients showed symptoms of arsenical poisoning.

In those showing marked improvement, the gain in weight in some instances was striking.

To be perfectly fair, except in Case 2 (M. L.), we have seen equally as rapid disappearance of skin manifestations from the use of injections of mercury; but several of the cases herein reported seemed to be rebellious to mercury. Reasoning from analogy and our knowledge of chemical therapy, a certain per cent. of cases will also, no doubt, prove rebellious to Ehrlich's remedy; but no matter how many may prove rebellious, it has a remarkable effect on the cutaneous manifestations of syphilis.

Humboldt Building.

THE DIAGNOSIS OF OPERABILITY OF CARCINOMA OF THE UTERINE CERVIX*

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Operability is a condition dependent on the operator as much as on the patient. This obtains as much in operations for fibroids as in operations for carcinoma. What to one operator is an inoperable fibroid, presents to the other a moderately difficult task. In carcinoma the personal factor enters even more into the determination of operability. I know of surgeons who refuse to operate in any case of carcinoma of the cervix; others who will do only operations which have a low primary mortality; others again whom no amount of primary mortality can deter from the most desperate attempts. Each one of them has his own conception of operability, which, expressed in figures, would vary between zero and 80 per cent. of all cases.

Operability to one surgeon appears to be the condition in which it is possible to take out the carcinomatous uterus. Such a surgeon would probably have a percentage of operability approaching 80 per cent. Other

surgeons have no faith in surgical operations for carcinoma, either because they have not operated sufficiently extensively and have had a shocking number of recurrences, or have done poor surgery and have had a mortality following their operations which precluded further efforts on their part. This class sometimes hides behind the oft-repeated statement that it is no use to operate on carcinoma anyhow, because in those cases that were really carcinoma recurrence always follows and those in which recurrence does not take place were not really carcinoma, microscopic diagnosis notwithstanding.

To find some foundation on which to base a scientific discussion, it is necessary to recall a few generally accepted results of clinical experience and pathologic investigation.

First, the diagnosis of carcinoma must be based on microscopic evidence. This evidence, I am happy to say, is now so generally accepted that the statements concerning microscopic diagnosis which a few years ago resounded from prominent rostrums need no further refutation. It is sufficient to repeat that it is not the microscope or the stain or the method of imbedding or cutting which makes the diagnosis, but the man who looks through the microscope.

Second, in cases which have been diagnosed as carcinoma by reliable microscopic investigation the patients have been cured by operation in numerous instances and have remained cured for many years after the operation. Therefore it is certain that cases of carcinoma can be cured by operation.

INDICATIONS AND CONTRA-INDICATIONS FOR OPERATION

The cases which give the best chances of a complete cure by operation are the cases in which the carcinoma is small and limited in extent. These cases give the best chances because the operations can be done in freely movable tissues and without sepsis being present in the field of operation; therefore with low primary mortality. Furthermore, the chances of removing all of the carcinoma are good, therefore the remote results are satisfactory.

The cases which give the most unfavorable results are those in which the carcinoma has involved the tissues extensively, and in which infection of the disintegrating tissue has taken place. These cases are bad risks for both primary mortality and remote results.

It is evident that every carcinoma has a stage when it is in its beginning and when its operative cure would be safe and lasting. It is regrettable that only a pitifully small percentage of such cases reach the operator. Somebody is to blame in every case in which this stage has been allowed to pass unrecognized and unoperated. If we are charitable, we are willing to assume that in most cases the patient herself is to blame, who through ignorance, superstition, fanaticism or fear commits suicide by the carcinoma route. If we are less charitable and more inclined to criticism, we remember the many cases in which the physician is to blame who fails to make the diagnosis.

Once this ideal stage of carcinoma, if I may so call it, is passed, the carcinoma patient reaches a condition in which many factors enter into the determination of her chances and in which conscientious and able surgeons may vary widely in their individual opinions.

This much we may hope to maintain, that every operation for the removal of carcinoma is undertaken with the hope and intention of removing all of the carcinoma, and that any operation which fails to remove all of the

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

carcinoma is a failure, whether the patient survives it or not. If the patient survives an operation for carcinoma which fails to remove all of the carcinoma, her condition is not essentially different from that of the woman whose carcinomatous uterus has not been removed, but only curetted and cauterized. And the chances of the two are nearly equal as far as length of life after the operation is concerned (an average of eighteen months with wide, but exceptional, variations above and below that average).

There is no question that with modern methods of hemostasis it is possible to remove almost any uterus affected with carcinoma, but it is also beyond question that this kind of operation is a perfectly useless sort of tight-rope performance; and, let it be understood clearly, it is the patient who must walk the rope, not the surgeon.

When it appears impossible to eradicate the disease completely by operation, the patient is better off with a simple palliative operative treatment. Palliative slight operations achieve nothing but a mitigation of the living death, but they do not render surgery abhorrent to the next patient who may be a good risk.

From what we know about the lawless ways of carcinoma of the cervix, it becomes clear that the more of the tissue surrounding the original seat of the carcinoma is removed the greater the chances of removing all of the carcinoma and of accomplishing a lasting cure. Unfortunately, the primary mortality increases in direct ratio with the extent of the operation. Furthermore, the cervix is in a particularly unfavorable location for wide excision of the surrounding tissues. In general we desire to keep at least an inch from the carcinoma in our operations. Who can do that in the structure attached to the cervix in front, the bladder? And who has the courage to advise complete removal of the posterior wall of the bladder with resection and reimplantation of the ureters in every operation for carcinoma of the uterus? Furthermore, the extension of the carcinoma of the cervix along the lymphatics is particularly treacherous, the paths leading underneath the apparently intact vagina, sometimes to considerable distances, and through apparently intact broad ligaments to lymphatic glands inside and outside the pelvis.

With all these obstacles which threaten our results, we must keep in mind that the farther away from the primary carcinoma we keep with our excision, and the farther away from the primary carcinoma we head off the outposts of the carcinoma the greater the certainty of a lasting result.

OPERATION

The operation which I have had the honor to propose to the profession in 1895, and which has since been modified and moderated and variously called the extensive Freund operation or the Wertheim operation, was the result of these and similar considerations. The intention was to keep as far away from the primary seat of the carcinoma as possible, to remove not only the primary carcinoma, but all of the surrounding tissues to an extent which would include the most probable first metastatic outposts, and at the same time to evolve a technic which would give a fair chance to the patient to survive the necessarily extensive operation. My first imitators had a mortality which soon made them more conservative, and at the present time, as far as I can ascertain, I am still the most radical operator, with the result that all of the patients who have left the hospital after a complete operation are to-day alive and free from pelvic carcinoma.

SUMMARY OF RESULTS

I have treated between 1897 and the end of 1909 33 patients with carcinoma of the cervix. Eleven of these were too far advanced for anything except palliative treatment. Of the 22 operated on 8 died from the operation, 2 from hemorrhage, 2 from the anesthetic, 4 from septic conditions. Of the 14 surviving the operation, 2 were operated on incompletely, the operation being interrupted when it was found impossible to complete it. Of the 12 with completed operation, one on examination of the specimen proved to be carcinoma just above the cervix and therefore belongs among the carcinomas of the body. One patient whom I reported to the Boston meeting of the American Medical Association as having had a recurrence in the external inguinal glands under the skin nine years after the first operation, I lost track of one year after the second operation. She was therefore alive ten years after the first operation. She belongs to the submerged stratum of society and I have little hope of finding her again. The 10 known survivors were operated on as follows: 1908, one; 1899, one; 1900, one; 1901, two; 1903, one; 1906, one; 1908, one; 1909, two. The number is so small that it is hardly worth while to figure out percentages. Suffice it to say that out of 17 who came to treatment from thirteen years to five years ago, 14 have been operated on by the radical operation, 1 has been lost sight of, 1 was carcinoma of the body, 6 died and 6 are alive and well to-day; 1 twelve, 1 eleven, 1 ten, 2 nine, 1 seven years.

After this operative experience and the pathologic study of the specimens removed, the principles which I announced in 1895 remain unchanged. But I must repeat that the value of this operation lies rather in the possibility of more numerous, complete and lasting cures of favorable cases than in the possibility of operating on advanced cases which are not amenable to treatment by the older methods.

Carrying out this operation I found, as was to be expected, that certain cases are inoperable which formerly would have been considered operable. On the other hand, certain classes of cases were demonstrated as amenable to operation which formerly were regarded as hopeless, as will appear in the further discussion.

Coming to the more technical points of this discussion, it may be said that there is no case which is inoperable for the palliative methods. Even those patients who cannot safely take an anesthetic can be submitted to this palliative treatment, as it can be carried out without an anesthetic or with a little morphin, in practically all cases.

The radical operation as I practice it, is a severe and dangerous operation in itself, even where the conditions are reasonably favorable as far as the extent of disease is concerned. Patients who are very anemic in consequence of prolonged and severe hemorrhages stand the anesthetic poorly and are poor risks even with scopolamin-morphin or spinal anesthesia. If preparatory treatment of short duration directed towards raising the hemoglobin percentage and the red blood count is not rapidly successful, the danger is considerable. Short stout patients of stocky frame are hard to operate on. Even tall patients, when very obese, offer great obstacles and the operation is liable to be extremely difficult and long, and therefore risky. Patients with nephritis, chronic bronchitis and emphysema and valvular lesions of the heart are in special danger. Preparatory treat-

ment should be tried in these cases for a short time. If it is not rapidly successful the patient should be informed of the additional risk she is running. I have repeatedly operated on patients with well-compensated heart-lesions without bad results.

The bacteriology of the carcinomatous surface is of great importance. Practically all carcinomas contain microorganisms of varying degrees of virulence. The danger of infecting the pelvic connective tissue and the peritoneum is always present in spite of various technical precautions which have been advised. It is safe to say that it is impossible to render an infected carcinomatous ulcer aseptic, whatever the preparatory treatment may be. The carcinomatous area may be opened into in the course of the operation, if the uterus tears, and carcinomas of the cervical canal are particularly treacherous in this respect. In order to lower the primary mortality it has been advised to give preparatory treatment to the septic carcinomatous areas for weeks, if necessary, before the main operation. But it is not safe to let a carcinoma go on for weeks, because in the course of these weeks it may become hopelessly inoperable, even if a little cleaner on the surface. In addition it must be stated that preliminary curetting and cauterizing in itself is not without danger. It is often followed by rise of temperature, sometimes even by exudates, which may render the radical operation impossible. Preparation of the carcinoma the day before the main operation or immediately preceding the main operation seems to be the best method. Patients who develop high temperature and septic conditions if prepared one day before the intended main operation, are best left without operation.

DIAGNOSIS OF EXTENT OF INVASION

The extent of the neoplasm is necessarily of prime importance with regard to the operability of the case. It is diagnosed before, during and after the operation, and often the result of the investigation at one of these periods is vastly at variance with that at another period.

Before the operation the methods used in the diagnosis of the operability of the carcinoma are inspection in the speculum, palpation, vaginal, rectal, abdominal and combined, and lastly cystoscopy.

The speculum is mentioned only to be condemned as practically useless. Cystoscopy should theoretically give safe indications, but does so only in a very limited way. If the cystoscope shows that the carcinoma has grown through into the bladder, it has been of value, because it shows the case to be inoperable. But the other conditions found in the bladder, edema, bullous edema and distortion of the bladder, are not reliable. They may be due as much to the infected condition of the carcinoma as to carcinomatous invasion of the bladder itself. Unless the cystoscope shows actual involvement of the bladder mucosa, the case need not be considered inoperable until further investigation.

Vaginal palpation of the carcinoma, especially after as much of the neoplasm as possible has been removed with the curette, shows the involvement of the uterus and surrounding tissues with a reasonable amount of accuracy. Extensive involvement of the vagina especially if extending into the depth, extensive destruction of the cervix, especially if involving the broad ligaments, characterize the case as inoperable. Palpation through the rectum may reveal thickening and rigidity of the ligaments which might make the operation useless. Palpation of the glands in the pelvis through the rectum has been recommended, but I myself have never been

able to palpate glands even if I found them enlarged afterward in the course of the operation.

Abdominal palpation might reveal carcinoma of abdominal organs outside the pelvis, thereby forbidding the operation. Palpation of the uterus through the abdomen may reveal a large tumor, but that in itself is not a serious obstacle.

Combined palpation, vaginal and abdominal, or vaginal, rectal and abdominal, will demonstrate the amount of mobility of the uterus and the condition of the ligaments. Free mobility of the uterus, which was of prime importance in the days of the old vaginal hysterectomy, is of much less importance for the method I advise, unless the immobility is due to carcinomatous involvement. If the immobility is due to carcinomatous fixation, the operation is not theoretically impossible, but it is practically useless as far as remote results are concerned. It is one of the important advances achieved by the performance of the radical abdominal operation that we know now that a uterus which appears immovable on combined palpation, may be perfectly operable, with good remote result, because in a number of cases the fixation is not due to carcinoma but to chronic inflammatory thickening of the ligaments.

CONDITIONS REVEALED AT OPERATION

In the course of the operation the operability may appear entirely different from that diagnosed before operation. Small metastatic tumors in the liver or carcinomatous adhesions to the intestines or omentum may be found immediately on opening the abdominal cavity, and classify the case at once as hopeless, when no amount of abdominal or combined palpation preceding the operation had revealed these conditions.

Therefore it is an important rule that every radical abdominal operation for carcinoma of the cervix should be begun as an exploratory operation. A rapid review of the liver, the abdominal glands along the aorta and its branches and of the bladder, must precede the actual operating in the pelvis. Conditions may be revealed here which forbid all further interference. Metastatic tumors of the liver make the case absolutely hopeless, as do also large carcinoma masses in the broad ligament, especially if they have perforated the ligaments and have made metastatic nodules on the peritoneum in the cul-de-sac or anywhere else. The condition of the glands is very difficult to interpret correctly. Large glands may or may not be cancerous and small glands are not necessarily free from cancer. Firm attachment of the glands to the veins must be considered very suspicious. This finding may occur in cases in which the carcinoma seemed confined to a small area in the uterus. These are the cases which appear perfectly operable on careful examination before the operation and prove incurable in the course of the operation. Toughness of the broad ligaments, if not combined with actual tumor formation, does not necessarily indicate carcinomatous involvement.

In the course of the operation conditions may be encountered which show the operation to be useless after it is more or less completed. For instance, it may be found, after removing evidently cancerous glands along the common and internal and external iliacs, that cancerous chains of glands extend under Poupart's ligament down into both thighs—a condition which I have seen. Or, in detaching the vagina, about the last step of the operation in the pelvis, it may be found that the pelvic connective tissue is invaded to an unexpected extent, a condition which I have seen. Then we have performed

an apparently well-indicated operation and do not discover until its very end that it was all useless.

MICROSCOPIC STUDY OF THE TUMOR AND TISSUES

After the operation follows the extremely important microscopic investigation of the specimen. No amount of operative technic can further our knowledge so much as a carefully conducted pathologic investigation of the specimen with constant comparison of the findings before and during the operation, with those of the post-operative investigation. This post-operative examination uncovers all shortcomings of our diagnosis and of our operative technic, and must be the basis of future improvements. There is no greater satisfaction than to find that the results agree in all three stages, and no greater incentive for further work than to find out where and why they do not agree. Literally thousands of sections of glands and broad ligaments and cervix are required to make sure that we have operated outside the carcinoma, but this work, laborious and heart-breaking as it may be, is a most essential part of our task, on which the rational surgical treatment of carcinoma of the cervix must be based.

100 State Street.

USE OF THE CAUTERY IN TREATMENT OF CARCINOMA OF THE CERVIX*

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Hysterectomy for carcinoma of the cervix has been a more or less unsatisfactory operation, the large percentage of early recurrences being an especially distressing feature of its results. The treatment of operable cases has now progressed to a well-nigh perfect degree of technic in competent hands. The radical abdominal operation, like the radical breast operation, when properly done, leaves nothing more that can be done in an operative way.

The one remaining thing to accomplish is to educate both the laity and physician to such a point that the patient will present herself early to her physician, and that the physician will make an early diagnosis, which being made, the patient will be forthwith sent for operation, rather than be kept under the physician's remunerative local treatments till the golden opportunity has passed. When such a condition has been obtained the statistics of radical pelvic extirpation will show different results than those of the past.

The experience of all operators is that a very large percentage of cervical carcinoma cases are much more advanced than the examination at first seems to show.

Bovée has said that fully 80 per cent. of all cases of carcinoma of the cervix are inoperable. The squamous-celled carcinoma of the portio vaginalis, as shown by Montgomery, is less malignant than the adenocarcinoma originating in the glands of the cervical mucous membrane. The latter much earlier involve the lymphatics than do the former.

Emil Ries, Wertheim, Clark, Sampson, Bovée and others have shown years ago that lymphatic involvement high up may exist when no suspicion or evidence of it existed on examination. Unfortunately, we shall always have a much larger percentage of inoperable cases with

us than we would wish for. It seems to be a necessary step to decide definitely in our minds between what constitutes an operable and an inoperable case. The statistics of the past would have been better had there been a well-defined line of demarcation between these two classes.

An operable case can be defined as one in which the disease is confined to uterine tissue alone, and an inoperable case, one in which the growth has involved surrounding tissues. It is often impossible to determine these questions until the patient is anesthetized. Examination through the rectum, high up, is necessary, as well as the vaginal examination. The rectal examination often tells more than the vaginal. If pain has been, to any extent, a symptom, it is probable that the extension is outside, for carcinoma of uterine tissue produces no pain nor tenderness.

Operations which do not remove all the diseased tissues only hasten the process of growth, as witnessed by the reported rapid recurrences in so large a percentage of cases. Many of these patients would live longer if they were never operated on. Another fruitful source of recurrence has probably been infection of raw surfaces at time of operation, as evidenced in the prompt recurrence in the scar in the vaginal vault. This scar would not be the first point of return were it not for this fact.

The late Dr. John Byrne of New York nearly twenty years ago demonstrated what he could do with the actual cautery in inoperable cases of carcinoma of the cervix. He reported a series of successful operations by the method of which he was the author, which to this day excels in results any that have been done by any other operator. He wrote of his method and reported his results from time to time till his death, but for some unknown reason his methods were never persistently followed by any of the army of operators who knew what he was doing. Dr. Byrne, in a discussion of one of Dr. Boldt's papers on carcinoma, made this statement relative to the apathy of the profession as to the cautery operation:

That the great bulk of our profession have practically ignored one of the least dangerous, but most successful of all the means yet devised for the relief and often permanent cure of uterine cancer is something *not* to be proud of in this age of progress.

His report made in 1896 as president of the American Gynecological Society embraced two series of cases, one consisting of 63 patients operated on for cancer of the portio vaginalis, of whom 23 patients had strayed away, leaving only 40 to account for. Of these, "exemptions from relapse were obtained ranging from two to twenty-two years, averaging nine years for each."

In the second series of 81 cases, out of which 31 patients had strayed, he reported exemption from relapse as follows: 10 for over two years; 11 for over three years; 6 over four years; 8 over five years; 6 over seven; 2 over eleven; 1 over thirteen and 1 over seventeen years. He further reported one of his stray patients, a very unpromising one when operated on in 1875, discovered alive and well twenty-one years afterward.

Undoubtedly a goodly proportion of the patients subjected to hysterectomy in the past would have been as well, and probably better off without operation, and would have lived longer. It is manifestly our duty not to operate when the results of such operations are known not to relieve, but probably hasten the death of the patient. But we cannot desert these poor sufferers. And in the cautery operation of Dr. Byrne we have the means

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

of doing for them that which cannot be done in any other way. All the other makeshifts, the chemical caustics, such as zinc chlorid, pyoktanin, bromin, etc., are useless as compared to the galvanocautery, because they are difficult to control and of doubtful efficacy.

The galvanocautery can be controlled, and all done while the patient is under the anesthetic. When the cautery is withdrawn we are sure that no further destruction of tissues is going on. With the chemical caustics such is not the case. Besides, the cautery is more penetrating and certain in its results.

The acetone treatment, to which Dr. Gellhorn of St. Louis first called attention by his publication in *THE JOURNAL* of this Association in 1907, and later in the *American Journal of Obstetrics and Gynecology*, I have never tried. I have been trying out the cautery in this class of cases. Acetone is not to be classed with bromin, zinc chlorid, etc., because it is not a caustic and is followed by no sloughing. It is more of a hardening fluid; but from all reports I doubt that its depth of penetration is equal to that of the cautery. One of the strongest points in favor of the cautery is that scar tissue follows its use, and as scar tissue always is contracting, it to a greater or less extent interferes with the nutrition of the cancer growth and thereby prevents recurrence or inhibits rapid recurrence and growth.

When the carcinomatous growth has progressed to the stage of breaking down with hemorrhage and infection, we have not only the results of the hemorrhage on the general health of the patient, but we also have various grades of toxemia from the infective processes accompanying the sloughing and bleeding cancer tissue. Both the hemorrhages and the infection may be stopped by the thorough use of the cautery, thereby controlling two of the prominent inroads on the health and life of the patient. And if in addition thereto we take into consideration the cessation of foul, fetid discharges, which are disgusting to the patient and all about her, we have added no inconsiderable blessing to her existence. By this means if we do not permanently cure the patient, we are adding to her length of days as well as making her life more happy and tolerable.

Manifestly cauterization of a fungating cervix will not cure the patient if the infection has passed up into the pelvic lymphatics beyond the reach of the cautery. But in a small portion of cases, even far advanced, infection of the lymphatics higher up has not occurred, or else Dr. Byrne could not have had patients alive five to twenty years after cauterization with no evidence of any carcinoma present. Undoubtedly many of his successes were in cases which were seen comparatively early in the disease, and as he treated all patients with cancer of the cervix with the cautery, instead of hysterectomy, his results would naturally give a larger percentage of cures than are obtained by treating the inoperable cases only, by this method. Cases which we consider safely operable are seldom if ever treated in this way, but the radical operation is done probably with as great or better chances of non-recurrence, with a proper technic, to prevent reinfection at time of operation.

The sharp curette is the adjuvant of the cautery in the inoperable class. By it all the soft bleeding mass may be removed, thus excavating down to the basement carcinoma. All of the cylindrical water-cooled speculums which have been devised, to my way of thinking, are hindrances rather than helps to the efficient performance of this operation, because by their thick-

ness they so limit the field of operation and vision that I, at least, cannot do it thoroughly. Burning of the vagina or bladder may be prevented by placing over the blades of speculums and retractors moist gauze jackets made to fit them. By this means a wide field of vision and action is obtained. After curetting away all the soft tissues, there is more or less oozing and sometimes bleeding.

Dr. Boldt, several years ago, suggested, and I think practiced, packing the crater thus made and waiting a day or two before using the cautery. If there is too free bleeding which cannot be readily controlled, this is a good plan to follow, for the effective use of the cautery demands a comparatively dry surface; otherwise the penetration of heat from the cautery tip will not be sufficient. Dr. Byrne used a saturated solution of zinc acetate with 25 per cent. of strong acetic acid to stop oozing and to dry the curetted surfaces before using the cautery. The acetone, from Dr. Gellhorn's report, will also prove to be an ideal application to stop all oozing.

I think that many operators have failed to get results and have given up the attempt to do this operation because they have not used a good and efficient cautery. No Paquelin thermocautery apparatus that I have ever seen can do the work properly. Only the right kind of electrothermocautery will do this work efficiently. Ordinary cautery batteries are of doubtful utility. The ordinary street current used for incandescent electric lighting, controlled by a rheostat, gives the necessary power to heat a platinum dome to any degree desired from dull red to white heat. Before using the dome the operator should determine where he desires the most penetration, where the tissues are thickest and what he wishes to avoid, be it bladder or peritoneal cavity. The peritoneum has been opened by the cautery with no ill results. So long as intestines are not burned, no peritoneal opening could be made under more aseptic precaution. The bladder, rectum and ureters only are to be avoided. The uterine arteries, if not exposed, may be destroyed by the deep cooking process with impunity, for they will, long before the slough comes away, have been effectually sealed. Dr. Byrne suggested that no packing be used in the crater subsequent to the cautery, as in its removal the slough might be forcibly torn away and hemorrhage follow. Natural separation I have never known to produce any bleeding.

The best results may be secured by not placing the heated dome against the tissues, but by holding it near them, thus allowing the heat to make the greatest penetration, roasting them as it were. If the bladder is well held up by a wet gauze-protected retractor it will never be damaged; neither will the penetration of the heat reach the ureters unless it is much overdone.

It is only within the past five or six years that I have been doing this work in a manner which has appealed to me as effectual in this class of cases. Some of the patients have lived two or three years very comfortably; two have been, I believe, absolutely cured, now living, one four and the other five years. One had passed the menopause, and she has a shriveled cicatrix where her uterus was, and is well. The other was not yet past the menopause and had hematometra after the cautery, by occlusion of the uterine canal, for which I did a vaginal hysterectomy. This uterus was investigated thoroughly after removal and not one slide showed any vestige of cancer tissue in it. She is well five years after the last operation. In general, all of these patients have been

made more comfortable than were those whom I formerly operated on and have lived longer.

I have done several hysterectomies for those whom I cauterized three or four times previously to the operation. The effect of the cicatricial deposits after the use of the cautery has been to inhibit the growth of the cancer to an extent which warranted me in making the attempt to do a radical abdominal operation later.

I wish, therefore, to suggest the idea of using the cautery as a means of preparing a limited number of these patients for later radical operation. I have further to suggest the use of the cautery freely before doing a radical operation, with the idea in mind that no inconsiderable part of the subsequent recurrences in the scar, as before outlined, are due to fresh infection of the raw surfaces at time of operation.

I believe that free and deep cantery of the cervix before radical operation does more to prevent such recurrences, as no other means has been devised that will not at times fail. This I believe to be a very much more important step in the technic of the radical operation than would at first thought appear.

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THE RESULTS OBTAINED BY THE RADICAL ABDOMINAL OPERATION FOR CARCINOMA OF THE UTERUS *

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The evolution of the modern radical operation for the cure of cancer of the uterus has kept pace not only with the general evolution and progress in surgery but with the modern conceptions of the pathology of cancer as well.

The abdominal radical extirpation of cancer of the uterus may be said to be still in its infancy. Sufficient time has not elapsed in which to draw definite conclusions, but this fact remains, that up to the present time our experiences with operations for cancer in all parts of the body prove that an operation which gives the least number of recurrences must conform to the following general principles, namely, "the complete removal of the diseased organ, and as much of the surrounding tissues as is possible, together with the removal of the regional lymphatic glands which drain the part affected."

There exists at the present time no other disease in gynecology around which so much interest centers, or one regarding whose surgical treatment so little unanimity of opinion exists as is the case in cancer of the uterus.

This review of the literature has been undertaken with the idea of determining, as far as may be possible at the present time, what results, immediate and remote, we may hope to obtain from the radical abdominal operation, inasmuch as this method conforms, more nearly than any other, to our present conception of what an operation for this disease should be.

In making a statistical study of the results obtained with the radical abdominal operation for cancer of the uterus, we are confronted by many difficulties. The

scarcity of complete detailed reports of such operations makes an ideal statistical study almost impossible. There exists no systematic or common method of reporting the cases on record, that is, whether the operation was done early or late, or whether the cancer was of the cervix, vaginal portion, or body of the uterus. There are no large series of cases on record which have been observed for five years or more, to corroborate the final results from many operators. Another difficulty which we meet is that not all operations reported as "abdominal operations" or "abdominal hysterectomy for uterine cancer," are really operations by the radical abdominal method. So that in making a statistical study, all reports of cases which do not possess the essential requirements of the modern radical operation must be carefully excluded.

From the standpoint of malignancy, it is now generally recognized that of all the uterine cancers, the least malignant is the adenocarcinoma affecting the body, next the squamous-celled carcinoma of the vaginal portion of the cervix, and that the most malignant is the adenocarcinoma of the cervical canal. It follows that the surgical treatment of each variety will give different results and therefore, it is not exactly proper to consider them all together. In the literature, however, there are only a few instances in which the different types are separated by the operators in reporting their cases of radical abdominal operation. I have found that a separate consideration of the results obtained from the radical abdominal operation in each type of cancer of the uterus is impossible, and therefore have been obliged to consider them altogether.

I have collected from the literature and from personal communication with operators in this country, reports of 2,765 instances of the radical abdominal operation which conform to Winter's formula as to what constitutes this operation. Of these 2,467 have been gathered from the continental literature, and 298 from American surgeons. The 2,467 operations which were reported are as follows:

	Cases.
Radical Wertheim operation.....	1,052
Radical abdominal method.....	689
Amman method	5
Radical abdominal operation with cleaning out of pelvis	261
Bumm-Wertheim operation	77
Freund-Wertheim operation	183
Mackenrodt-Amman operation	13
Freund	15
Mackenrodt operation	144
Complete extirpation with parametrium and glands.....	28
Total	2,467

The reports of the 298 operations gathered from American surgeons were either reported as Wertheim operations, or in a personal communication to me, as "abdominal hysterectomies with a free dissection of the ureters and wide excision of the parametrium, the removal of a portion of the vagina and any enlarged glands present."

The status of the radical abdominal operation in America was illustrated by the replies received from 330 letters of inquiry sent to the leading surgeons and gynecologists of this country regarding the radical abdominal operation for cancer of the uterus. I received 140 replies, only twenty-two of which gave the experience of operators who had done the operation. From the scarcity of the number of recorded cases in the American medical journals, and from the comparatively few reports of cases obtained from personal communication, it is evident that the modern radical abdominal operation for uterine cancer has not received the recognition in this country which it has abroad. I regret that, at this

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

* For reasons of space, the article is here abbreviated by the omission of part of the historical portion and all of the bibliography. The complete article appears in the Transactions of the Section and in the author's reprints.

time, I have been unable to obtain late reports from Kelly, Clark, Cullen, and Ries, all of whom have had much experience with this method.

In this statistical study I have given Wertheim's results separately as well as combined with the general results of other operators. This has been done for the reason that one of the objections which has been raised to the more general employment of this method has been that other operators could not obtain results equal to those of Wertheim.

The following is a tabulated list of the cases reviewed.

TABLE 1.—STATISTICS OF THE OPERABILITY AND MORTALITY

CONTINENTAL OPERATORS				
Operator.	No. Operated On.	Operability, Per Cent.	Primary Mortality, No.	Per Cent.
Amnian, J. A. ⁷	5	..	1	20
DeArcangelis ⁸	2	..	1	..
Berutti ^{9 10}	..	..	..	..
Belloeuf, F., and Sorell ¹¹	1	..	0	..
Bergesio and Berutti ^{9 10}	79	..	27	..
Berkeley, C., and Bonney, V. ^{12 13 14}	18	67	3	16.6
Billhaut, M. ¹⁵	4	..	3	..
Bumm ^{16 17}	75	90	15	20
Cheatic, Lenthal ¹⁸	1	..	..	..
Dobbert, T. ¹⁹	25	..	3	..
Depage, A., and Mayer, L. ²⁰	1	..	..	..
Döderlein ^{21 22 23 24}	209	48.3-68.6	30	14.3
Ernst ²⁵	3	..	..	..
Ferrier ¹⁶	15	..	3	..
Freund, H. W. ²⁶	15	..	3	20
von Franque, Otto ^{27 28 29 30}	166	..	33	20
Faure, J. L. ^{31 32 33}	12	..	0	..
Franz, K. ^{34 35 36 37 38}	140	81.35	27	19.28
Fuchs ³⁹	2	..	0	..
Fuehth ⁴⁰	1	..	1	..
Jacobs ^{41 42 43 44 45}	95	..	6	6.3
Blake ⁴⁵	15	..	0	..
Jeannel ⁴⁶	33	30	11	35
Jessett and Bowerman ⁴⁷	1	..	0	..
Jessnitzer and Eugen ⁴⁸	14	..	3	..
Jonnesco, T. ^{49 50}	28	..	9	..
Kleinhans, F. ^{18 51}	32	..	3	9.4
Korner, V. ⁵²	7	..	3	..
Kroenig ^{16 53 54}	47	61.7-87	2	..
Klein, G. ^{55 56 57 58}	52	40	7	12.8
Kuestner ^{16 59 60}	20	68.7	4	19.4
Gattono, S. ⁶¹	18	..	2	..
Lampe, R. ⁶²	7	..	3	..
Latzko, W. ⁶³	10	..	0	..
Lockyer, C. ⁶⁴	12	70.5	3	..
Legcau ⁶⁵	10	..	4	..
Mackenrodt ^{16 17 65 66 67 68}	144	92	28	19.21
Morisani ⁹	14	..	1	..
Muller, P. ⁶⁵	7	33.3-89.5	3	42.5
Opitz ^{69 70}	1	..	0	..
Oberlander ⁷¹	1	..	0	..
Pfannenstiel ¹⁶	10	..	2	20
Prelli, C. ⁷²	24	..	10	..
Prochowniek ⁷³	16	..	6	..
Polosson, A., and Violet ^{14 74}	32	12-14-56	6	(18.7)
Poten ⁷⁵	2	..	0	..
Poroschin ⁷⁷	4	..	1	..
Reineeke, P. ⁷⁸	66	40.76	14	21.2
Reynier ⁹	18	..	5	..
Ricard ¹⁶	9	..	1	..
Riehevin, R. ⁷⁰	18	..	6	..
Richelot, G. L. ⁸⁰	21	..	8	..
Rouffart ⁸¹	1	..	1	..
Von Rosthorn and Shindler ^{82 83 84}	117	36.1	16	13.67
Spinelli ⁸⁵	5	..	1	..
Sellheim, H. [*]	13	..	3	..
Sitzenfrey, A. ⁸⁷	1	..	0	..
Thring, E. ⁸⁸	6	..	0	..
Veit ⁸⁹	33	..	11	..
Vlannay ³³	7	..	3	40
Wertheim ^{75 96 103}	487	60†	119	24.50
Walthard ¹⁰³	8	..	0	..
Welss, Th. ¹⁰⁴	1	..	0	..
Zacharias, P. ¹⁰⁶	97	..	21	..
Zweifel ^{16 106 107}	129	..	17	10.8

† In last 200 cases.

AMERICAN OPERATORS				
Operator.	No. Operated On.	Operability, Per Cent.	Primary Mortality, No.	Per Cent.
Peterson, R. [*]	36	15 or 20	7	19
Reeder, F. [*]	32	40	8	26.2
Jonas, J. E. [*]	5	50	1	20
Cannady, J. E. [*]	10	50	2	20
Boldt, H. J. [*]	5	..	..	0
Rixford, E. [*]	12	..	3	25
Smith, R. R. [*]	3	20	1	33 1/3
Janvrin, J. E. [*]	12	10	4	33 1/3
Polak, J. O. [*]	10	..	2	10 or 12
McLaren, A. [*]	7	..	11	5
Tate, M. A. [*]	4	15	0	..
Cumston, C. G. [*]	12	5	0	..

Operator.	No. Operated On.	Operability, Per Cent.	Primary Mortality, No.	Per Cent.
Frank, L. [*]	25	†	3	3 or 4
Stone, L. S. [*]	20	25.20	1	5
Ill, E. J. [*]	2	..	0	..
Poucher, J. W. [*]	39‡	..	3	..
Gellhorn, George [*]	3	..	2	..
Crossen, H. S. ¹⁰⁸	1	..	0	..
Rosenthal, M. I. ¹⁰⁹	3	..	0	..
Hutchins ¹¹⁰	8	50	1	12.5
Jacobson, J. H. [*]	7	..	2	..
Barrett, C. W. [*]	6	..	1	..
Cushing, E. W. [*]	12	25	..	..
Humiston, W. H. [*]	2	..	0	..
Sampson, J. A. [*]	14§	50	4	..

† All of body to cervix.
‡ At present all cases.
§ Since 1905.

OPERABILITY

In the 2,765 operations reported by 130 operators, I found the percentage of operability, as recorded by 28, to vary from 5 per cent. to 90 per cent. The operability percentage is decidedly higher among European surgeons.

TABLE 2.—PERCENTAGE OF OPERABILITY

CONTINENTAL OPERATORS		Per Cent.
Berkeley and Bonney ¹³	..	67
Bumm ¹⁶	..	90
Döderlein ^{16 23 24}	..	68.6
Franz ^{34 35 36 37 38}	..	81.35
Jeannel ⁴⁶	..	30
Kroenig ^{46 53 54}	..	87
Klein ^{55 56 57 58}	..	40
Kuestner ^{16 59 60}	..	68.7
Lockyer ⁶⁴	..	70.59
Mackenrodt ^{53 17 65 66 67 68}	..	92
Muller ⁵⁴	..	89.5
Polosson ^{14 74 75}	..	56
Reinicke ⁷⁸	..	40.76
Rosthorn ^{82 83 84 1 111}	..	36.1
Wertheim ^{86 87 27 88 89 93 75 90 to 102}	..	60.0
An average operability of.....		65.17

The average per cent. of operability excluding Wertheim's figures is 65.54 per cent.

AMERICAN OPERATORS			
	Per Cent.		Per Cent.
Peterson.....	20	Tate.....	15
Rider.....	40	Cumston.....	5
Jonas.....	50	Frank.....	25
Cannady.....	50	Poucher.....	100
Smith.....	20		
Janvrin.....	10		
An average operability of.....			35

In the twenty-eight instances in which I found the operability recorded, seven had a percentage of less than 25 per cent.; 10 gave it as being between 25 to 50 per cent.; five-between 50 to 75 per cent., while six gave a percentage of 75 and over. It must be emphasized that with the radical abdominal operation, a higher percentage of all cases of cancer of the uterus are operable than by any other method, and this to a large extent, explains its high primary mortality. If the radical abdominal operation was performed only in the early cases, or in cases in which a vaginal hysterectomy could be made, the operative mortality would not be considered high.

There exists a definite relation between the percentage of operability and the mortality-rate of the operation. The primary mortality is dependent, for the most part, on the degree of operability of a given case, as well as on the percentage of operability of all cases which the individual operator possesses. It is obvious that the earlier the patients are seen, the higher will be the percentage of operability and the lower the primary mortality. The operability percentage as well as the primary mortality is likewise influenced by the experience which the operator has had with the method; with a larger experience comes a greater familiarity with the technic of the

operation and therefore an increase in the operability of all cases seen, with fewer deaths from the operation. These facts are well illustrated in Table 3, in which I have endeavored to ascertain the relation of operability with primary mortality, and have therefore compared operators having an operability of less than 50 per cent. with those of 50 per cent. or more.

TABLE 3.—OPERABILITY COMPARED WITH PRIMARY MORTALITY

OPERATORS HAVING AN OPERABILITY OF LESS THAN 50 PER CENT.

Operator.	Per Cent.	Per Cent.
Döderlein.....	48-68	Primary mortality 14.3
Jeannel.....	30	Primary mortality 35
Klein.....	40	Primary mortality 12.8
Reinecke.....	40.76	Primary mortality 21.21
Von Rosthorn.....	36.1	Primary mortality 13.67

An average operability of 38.95 per cent., with a primary mortality of 19.39 per cent.

OPERATORS HAVING AN OPERABILITY OF MORE THAN 50 PER CENT.

Operator.	Per Cent.	Per Cent.
Bumm.....	90	Primary mortality 20
Franz.....	81.35	Primary mortality 19.28
Mackenrodt.....	92	Primary mortality 19.21
Polosson.....	56	Primary mortality 18.7
Wertheim.....	60	Primary mortality 24.5

An average operability of 75.87 per cent., with an average primary mortality of 20.69 per cent.

Simultaneously with the adoption of the radical abdominal operation; many authors record an increase in the operability of all patients presenting themselves for examination; thus Baisch²² states that at Tübingen the operability of all cases of cancer of the uterus rose from 48.3 per cent. to 68.6 per cent. with the introduction of the radical abdominal operation, while Muller, in Berne, raised his operability from 33 per cent. to 89 per cent.; von Rosthorn to 36.1 per cent.; Döderlein¹⁶ from 48.3 per cent. to 68.6 per cent.; Franz³⁴ from 29.2 per cent. to 52 per cent.; Kuestner¹⁷ from 34.5 per cent. to 68.7 per cent.; Zweifel¹⁰⁶ to 68.4 per cent.; Kroenig^{16, 54, 53} 61.7 per cent. to 87 per cent.; Polosson^{14, 74, 75} 12.14 per cent. to 56 per cent.; Wertheim^{90, 102} to 60 per cent. in his last 200 cases.

PRIMARY MORTALITY

In the 2,765 operations tabulated, there were 538 deaths, a gross primary mortality of 19.45 per cent. This percentage agrees in the main with what has heretofore been generally considered as the primary mortality, namely about 20 per cent.

The Continental surgeons in 2,467 operations had 492 deaths, a primary mortality of 19.94 per cent., which, exclusive of Wertheim's cases, was 13.79 per cent. The American surgeons in 298 operations, had forty-six deaths or a primary mortality of 15.77 per cent.

The gross mortality of all the operations recorded is necessarily high, yet not so high as one might expect from so formidable an operation in the hands of so many different operators. The following list further shows that in individual instances, the primary mortality is much below the average, as for example:

Döderlein	in 209 operations	had 30 deaths	or 14.3 per cent.
Jacobs	in 95 operations	had 6 deaths	or 6.37 per cent.
Kline	in 52 operations	had 7 deaths	or 12.8 per cent.
Zweifel	in 192 operations	had 17 deaths	or 10.8 per cent.

Although it is of the greatest importance, I have, for lack of detailed data, been unable to tabulate and contrast the results of the cases which have been operated early with those which have been operated late. The percentage of operability has a relative bearing on these questions and has been considered above.

I have been able to find a number of references illustrating the fact that with an increased experience, indi-

vidual operators have had a corresponding decrease in the primary mortality rate.

Bouvier¹¹³ 1904, states that Mackenrodt in his last twenty-one cases had two deaths or 9.5 per cent.

Baisch²² 1905, reports that the primary mortality in Döderlein's cases was 15 per cent., and that in his last forty-five cases it decreased to 6.6 per cent. Bergesio¹⁰ states that from 1898 to 1906, the Wertheim operation was done by himself and Berutti seventy-nine times; if we divide the time of these operations into three-year periods, we have the following figures:

1898 to 1900, 20 operations with 9 deaths, primary mortality 45 %
1901 to 1903, 32 operations with 11 deaths, primary mortality 34.5 %
1904 to 1906, 27 operations with 7 deaths, primary mortality 26 %

Von Franque,²⁸ 1909, reports 166 operations with a 20 per cent. primary mortality.

In 1905 he made 38 operations with primary mortality of 13 %
In 1906 he made 42 operations with primary mortality of 26 %
In 1907 he made 44 operations with primary mortality of 16 %

He had series of cases, as many as eighteen consecutively, without a death. Von Franque, however, does not think it will be possible to reduce the mortality as low as 10 per cent.

J. L. Faure³¹ writing in 1906, reports the following figures:

First series (15 operations) 9 deaths (primary mortality of 60 %)
Second series (18 operations) 6 deaths (primary mortality of 33 %)
Third series (7 operations) 1 death (primary mortality of 14 %)

Scheib²⁷ gives the figures presented in Table 4 by years, containing the number of patients with cancer of the cervix who died primarily from operation as well as the total who came to operation, including the number of attempts at operation in which the radical operation could not be completed.

TABLE 4.—OPERATIONS AND MORTALITY IN SCHEIB'S CASES

Year.	No. Cases.	Inclusive Attempts.	Deaths No.	Deaths Per Cent.	Inclusive Attempts at Radical Operation.
1903.....	15	17	4	26.6	5 or 29.8 per cent.
1904.....	22	25	4	18.1	5 or 20 per cent.
1905.....	35	38	5	14.2	5 or 13.1 per cent.
1906.....	39	42	10	25.6	11 or 26.1 per cent.
1907.....	38	44	7	14.4	7 or 15.9 per cent.
	149	166	30	20.1	33 or 19.8 per cent.

E. Wertheim¹⁰³ (1902) gives the following figures:

Primary results of his first	30 cases, 12 deaths
Primary results of his second	30 cases, 5 deaths
Primary results of his third	30 cases, 3 deaths
Primary results of his fourth	30 cases, 4 deaths

His total mortality is 20 per cent. and, if we exclude the first thirty cases on account of imperfection of technique, his later ones give a primary mortality of only 13 per cent. Wertheim²⁷ stated at the 1909 International Congress, at Budapest, that in his last 200 cases, the primary mortality was only 10 per cent.

R. Peterson (1910) reports a primary mortality in his first series, of 14 cases, 42.8 per cent.; in his second series, of 22 cases, of 4.5 per cent.

Schindler⁸⁵ 1904, reports that, at von Rosthorn's clinic, in twenty-five operations performed from Jan. 1, 1903, to April 1, 1904, there were only two deaths or a mortality of 8 per cent.

CAUSES OF DEATH

The causes of death from the radical abdominal operation for cancer of the uterus are given as shock, peritonitis, infection, sepsis and injury of the ureters.

I have been able to find in the literature only eighty detailed cases of death which were directly traceable to

the operation. The relative frequency of each cause is illustrated in the following list of causes:

Infection and sepsis.....	31
Peritonitis	19
Total	50
Shock	18
Injury of the uterers.....	2
Pneumonia	2
Nephritis	2
Anemia	2
Paralysis of the heart.....	1
Fatty degeneration of the heart.....	1
Pulmonary embolism.....	1
Necrosis of the ureter.....	1
Total	80

This list shows the relative high frequency of deaths due to infection, sepsis and peritonitis, fifty out of the eighty cases being due to these causes. Shock ranks next in relative importance as a cause of death, there being eighteen cases.

The most potent argument which has almost universally been used against the employment of the radical abdominal operation in the surgical treatment of carcinoma uteri, has been the high primary mortality which accompanies the operation. That the operation is correct in theory, and is the only one which conforms to our modern conception of the pathology of the disease, seems to be universally agreed; but its high primary mortality has not only deterred many operators from performing it, but has led to its abandonment by some who had already adopted it.

Those who make the criticism that the primary mortality of the operation is too high must not forget that the history of all major abdominal operations, in their period of development and perfection, have been accompanied by a higher mortality, and that such death-rates should not be taken as final.

SUMMARY OF THE REVIEW OF THE PRIMARY MORTALITY

1. In the 2,765 operations tabulated there was a primary mortality of 19.45 per cent.

2. The average percentage of primary mortality among Continental surgeons was 19.94 per cent. and among the American operators 15.77 per cent.

3. In individual instances the deaths from this operation have been reduced considerably under the general average, Jacobs 6.37 per cent., Zweifel 10.8 per cent., Kline 12.8 per cent., Wertheim in last 200 cases 10 per cent. and Döderlein 14.3 per cent.

4. The primary mortality is much lower when the operation is made before the disease has advanced too far. According to Berkeley in early cases the primary mortality is only 6.8 per cent., as compared to 26.7 per cent. in late cases.

5. The relatively high primary mortality of this operation is largely due to the greater number of cases operable by this method, the result being that cases are operated in a stage too far advanced for the employment of any other method of operation.

6. Death from this operation seems to be due in most instances to infection and sepsis and not as a rule to shock as is generally supposed to be the case.

The infection is, in all probability, the result of the presence of pyogenic bacteria in the carcinomatous mass and large area of raw surface exposed during the operation.

Shock may be due to any one or more of the following causes:

1. Inaccessibility of the deep pelvic structures, causing rough manipulations.

2. Manipulation and exposure of the abdominal viscera, particularly the small intestines.

3. Hemorrhage.

4. Prolonged operation with subsequent prolongation of the anesthesia.

FINAL RESULTS

It is too early at the present time to obtain a large amount of corroborative information regarding the end results of the radical abdominal operation. This is due mainly to two reasons: (1) the operation is still in its period of development, and (2) in only a few instances have operators been performing the operation for a sufficient length of time to have series of cases which have been observed for five years after the operation.

The following reports as they exist in the literature, together with the personal reports which I have been able to obtain from some of the American operators, represent the end results with the radical abdominal method as near as they can now be determined:

Bergesio and Berrutti¹⁰ reported 1906, their final results in 20 operations performed from 1898 to 1900; 3 patients were alive two years after operation; 1, three years afterward, and 2, four years afterward; 11 were unaccounted for and 4 patients had relapsed and died in periods ranging from six months to twenty-two months after operation; 33 per cent. were alive from one year and ten months to four years.

Bumm,¹⁶ reporting in 1907, was able to trace fifty-six women out of seventy-five in whom he had made the radical abdominal operation. Thirty per cent. were alive more than one year after operation.

Dobbert,¹⁹ in 1907, out of twenty-five radical abdominal operations, gives the end results in eleven. Seven patients are free from recurrence one to four years after operation (35.7 per cent.).

Döderlein,¹⁶ in 1907, reported forty-seven radical abdominal operations which he performed in 1902. Of the patients fifteen were free from recurrence three and one-half to four and one-half years after operation (31.9 per cent. Waldstein, 37.5 per cent. Winter); fifteen of these operations were made for cancer of the body of the uterus, which gave a primary mortality of 6.6 per cent., with an operability of 100 per cent. and a percentage of cure, after Winter, of 72.7 per cent. (or 53.3 per cent. after Waldstein). The thirty-two cases of cervical cancer gave an operability of 60.3 per cent., a primary mortality of 18.7 per cent., with permanent cure in 26.9 per cent. after Winter and 21.8 per cent. after Waldstein; an absolute cure of all cases observed three and one-half to four and one-half years after operation 16.2 per cent. were after Winter, 13.1 per cent. after Waldstein. He contrasts this with the end results of vaginal hysterectomy at Tübingen, which was only 9 per cent.

Mackenrodt,^{68, 53, 27} in 1908, reports that among 144 patients operated on by his method, who were observed eighteen months to six and one-half years after operation, there were 61.5 per cent. of all or 74 per cent. of the surviving patients still well. The primary mortality in the last few years has been between 19 and 21 per cent. in an operability of 92 per cent.

Absolute cure 18 months to 6½ years,	55.6 per cent.
Absolute cure 3½ years to 6½ years,	52.6 per cent.
Absolute cure 4½ years to 6½ years,	45.4 per cent.
Absolute cure 5½ years to 1½ years,	58.3 per cent.

Polosson^{75, 14, 74} reported in 1907 that after thirty-two radical abdominal operations for uterine cancer, 60 per cent. of the patients were alive after five years.

Reinecke,⁷⁸ in 1909, reports the final results in sixty-six cases. Up to the end of 1903 twenty-seven radical

abdominal operations were made for cervical cancer. Of the twenty surviving patients, seven are still free from recurrence, making a permanent cure of 35 per cent.

Recurrences were as follows:

First	year there were	23 recurrences
Second	year there were	5 recurrences
Third	year there were	3 recurrences
Fourth-Fifth	year there were	0 recurrences

Enlarged glands were removed in twenty-six of the sixty-six cases; in twelve instances they were found carcinomatous; all cases, excluding the primary deaths, recurred, with one exception, in which the glands had been found carcinomatous, or in which carcinoma-like cells were found.

Von Rosthorn⁸⁵ reported by Schindler in 1906 thirty-three abdominal radical operations. Twenty-seven patients have been observed for a period of five years and six for a period of four years. Seventeen patients have had recurrences and five have remained well. This makes 77.2 per cent. of recurrences with a permanent cure of 22.7 per cent.

Veit,⁸⁹ writing in 1910, states that out of thirty-three radical abdominal operations performed in 1904 for

The summary of permanent results of continental operators is as follows:

Three operators report 20% to 30% of cures from 1 to 5 years
Seven operators report 30% to 40% of cures from 1 to 8 years
Three operators report 40% to 50% of cures from 1 to 5 years
One operator reports 50% to 60% of cures after 3 years
Five operators report 60% to 74% of cures from 1 to 6½ years

Operators reporting permanent cures five years after operation are as follows:

Von Rosthorn.....	20	per cent.
Veit	30	per cent.
Wertheim	58.6	per cent.
Polosson	60	per cent.
Reinicke	35	per cent.

Average of the five operators, 40.72 per cent.; permanent cures five years after operation.

Average of the American operators, 8.39 per cent.; permanent cures five years after operation.

From the 298 radical abdominal operations by American operators there were forty-six deaths (15.77 per cent.) of the 252 survivors, seventy-eight are still free from recurrence and twenty-five or 8.39 per cent. are alive and well five years after operation.

TABLE 5.—COMPARISON OF OPERATIONS FOR UTERINE CANCER

Method.	Operability.	Primary Mortality.	Permanent Cures After Five Years.	Absolute Cures.
1. Radical abdominal operation by Continental surgeons, including Wertheim.*	65.17 per cent.....	19.94 per cent.....	40.72 per cent. (five operators).....	Average 21.14 per cent. (five operators with a period of observation from 2-6½ years).
2. Wertheim's results. †.....	60 per cent. in last 200 cases.....	10 per cent. in last 200 cases.....	58.6 per cent. (Dresden Congress, 1907).....	19.3 per cent.; awaits 30 per cent. on account of increase in operability.
3. Radical abdominal operations by Continental surgeons, not including Wertheim.*.....	65.54 per cent. (Continental Surgeons).....	13.79 per cent. (Continental Surgeons).....	36.25 per cent.; average of 4 European Surgeons.....	Average 21.40 per cent. (four operators 3 to 5 years after operation).
4. Extensive vaginal hysterectomy, Schauta. ‡.....	47.7 per cent.....	10.7 per cent.....	39.5 per cent.....	13.4 per cent.
5. Vaginal hysterectomy. ††.....	25 to 40 per cent.....	8 to 10 per cent.....	Lasting results in 33⅓ per cent., Gusserow, 1890-1900 (ca. cervix), 24.4 per cent. (ca. body), 100 per cent....	7 to 10 per cent.
6. Byrne's operation, 237 cases, 151 lost sight of. ‡.....	100 per cent.....	Nil.....	Three years after operation (65 cases), 17.71 per cent.; five years after operation (46 cases), 12.53 per cent..	Three years after operation 17.71 per cent.; five years after operation (46 cases), 12.53 per cent.

* Compilation by the author.

† Internat. Med. Cong., Budapest, 1909.

‡† Döderlein-Kroenig, 1907.

‡ Tr. Am. Gynec. Soc., 1889, xiv and xvii.

uterine cancer with a primary mortality of eleven cases, nine patients are now living, and, among these, one from whom probable carcinomatous glands were removed.

Wertheim,^{27, 102} at the last International Medical Congress, 1909, at Budapest, reported the final results in 487 operations by this method; 200 patients were operated on more than five years ago. The primary mortality was 24.5 per cent. and the absolute cure in all cases 19.3 per cent. In the last series of cases the primary mortality has been lowered to 10 per cent. and the operability has risen to 60 per cent., so that Wertheim states that he expects an absolute cure, in all cases observed of 30 per cent. The accuracy of his statistics is demonstrated by the fact that none of his cases were lost from observation. At the Kiel congress, in 1905, Wertheim reported 60 to 70 per cent. of permanent cures (Winter) after five years, and at the Dresden congress, in 1907, he reported 120 radical abdominal operations the patients having been observed for five years after operation, among whom there was a permanent cure of 58.6 per cent. (Winter).

These twenty-five cases are reported by the following:

Cure.	
Peterson	3 Permanent cure five years after operation.
F. Rader.....	2 Permanent cure five years after operation.
E. Rixford.....	2 Permanent cure five years after operation.
J. E. Janvrin.....	2 Permanent cure five years after operation.
J. O. Polak.....	1 Permanent cure five years after operation.
C. G. Cumston.....	3 Permanent cure five years after operation.
J. W. Poucher.....	6 Permanent cure five years after operation.
C. W. Barrett.....	2 Permanent cure five years after operation.
Emil Ries.....	4 Permanent cure five years after operation.

The following is a summary of absolute cures:

Mackenrodt,⁶⁸ 58.3 per cent., 5½-6½ years after operation.
Wertheim,¹⁰² 19.3 per cent., 5 years after operation.*
Döderlein,¹⁶ 1902, 16.2 per cent., 2½-3½ years after operation.
Döderlein,¹⁶ 1903, 22 per cent., 2½-3½ years after operation.
Von Franque,²⁸ 10.1 per cent., 3 years after operation.
Von Franque,²⁸ 19.4 per cent., 2 years after operation.
Von Rosthorn,⁸⁵ 2.65 per cent., 5 years after operation.
* Awaits returns from 30 per cent.

The advisability of removing enlarged and carcinomatous glands, when such are found at the operation, is still one of the mooted questions in the performance of radical abdominal operation. While most operators agree that when such enlarged and carcinomatous

glands are found, a recurrence is the rule, and in spite of the fact that Wertheim and others consider the wide excision of the parametria as the all-important factor in the operation, the following reports of patients alive without recurrence five years after operations in which such carcinomatous glands were removed commands our serious consideration.

PERMANENT CURES FROM ABDOMINAL OPERATION IN WHICH CARCINOMATOUS GROWTHS WERE REMOVED

Emil Ries,¹⁴ in 1906, reported four cases in which carcinomatous glands were removed at the time of operation; the patients were free from recurrence five years after operation.

Döderlein¹⁰ has two patients with carcinoma of the cervix who were operated on in 1902, with simultaneous removal of carcinomatous glands, who have remained free from recurrence four and one-half years. He also has three other patients, operated on in 1903, who have remained free from recurrence for three to three and one-half years.

Wertheim¹⁶ has had four similar cases with freedom from recurrence from three to three and one-half years after operation.

Mackenrodt¹⁶ had eighteen cases of radical operation with the removal of carcinomatous glands which, as reported by Brunet, are as follows:

Three cases in 1901,	1 patient remaining well without recurrence
Four cases in 1902,	3 patients remaining well without recurrence
Nine cases in 1903,	7 patients remaining well without recurrence
Two cases in 1904,	1 patient remaining well without recurrence

Von Rosthorn⁸⁵ had one case with ultimate recovery.

Bumm⁸⁵ had two cases in which carcinomatous glands were removed, in one of which the right ureter had become infiltrated with cancer which necessitated the removal of the right kidney; both patients were well after two and one-half years.

Veit⁸⁹ reports one patient alive after five years in whom the glands were probably carcinomatous.

CONCLUSIONS

From the foregoing summary we are warranted in drawing the following conclusions regarding the operability, primary mortality, permanent results and absolute cures obtained from the radical abdominal operation for uterine cancer:

1. Among Continental operators, including Wertheim's figures, an operability of 65.17 per cent., a primary mortality of 19.94 per cent., a permanent cure from three to five years in 40.72 per cent. (five operators) and an absolute cure in all cases of 21.14 per cent. (five operators with period of observation from two to six and one-half years).
2. Wertheim's figures are an operability of 60 per cent.; a primary mortality of 10 per cent.; permanent cures after five years in 58.6 per cent., and an absolute cure of all cases in 19.3 per cent., with a probability of 30 per cent.
3. Other Continental operators exclusive of Wertheim's figures, give an operability of 65.54 per cent.; a primary mortality of 13.79 per cent.; an average permanent cure five years after operation in the hands of four other operators of 36.25 per cent., with an average absolute cure in all cases three to five years after operation in the hands of four operators of 21.44 per cent.
4. Eleven American operators give an average operability of 35 per cent.; a primary mortality of 15.17 per cent.; permanent cures after five years, 8.39 per cent. On this basis the absolute cure would be approximately 1 per cent.

In Table 6 is found a comparison of the results obtained from the radical abdominal operation with those obtained from other operations for cancer of the uterus.

From the review it is apparent that the best results in the surgical treatment of uterine cancer are obtained from radical abdominal operation.

The real problems at the present time in the surgical treatment of uterine cancer are not what particular operation gives the best results, but, rather, how such patients can be operated on earlier and how the primary mortality of the radical abdominal operation can be further reduced.

The first problem can be solved only by a campaign of education in our medical schools and in our medical societies, together with some form of public instruction similar to that which has been inaugurated in Germany by Dührssen and Winter. The problem of reducing the primary mortality is one which I believe will be solved largely in the next few years. Further experience with the technic of the operation, the use of spinal anesthesia, perhaps the more general employment of Mackenrodt's transverse abdominal incision, Bumm's modification of Wertheim's technic for quickly locating the ureters, further experience with implantation of the ureters in the bladder, diminution of the exposure and manipulation of the viscera, and the diminution of the dangers from hemorrhage either by Momburg's method or by temporarily clamping the internal iliac arteries, are some of the methods and procedures which, combined with early operation, will help toward solving this problem.

THE PARTICIPATION OF THE TISSUES
ADJACENT TO THE UTERUS AND OF
THE PELVIC LYMPHATICS
IN UTERINE CANCER*

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ALBANY, N. Y.

Cancer may arise either in the body or in the cervix of the uterus. The former variety is infrequent, occurs as often in nulliparous as in parous women, and the average age of those afflicted is greater than in cancer of the cervix. Its growth is usually slow and it remains restricted to the uterus for a relatively long period of time (Fig. 1). For the latter reasons the diagnosis is usually made while it is limited to the uterus, and hysterectomy for this condition is attended with a low primary mortality and a high percentage of cures.

Cancer of the cervix, on the other hand, is one of the most frequent varieties of primary carcinoma; it usually occurs in parous women; and it is more often a disease of midlife than of old age. (A large percentage of its victims are under 45; and its occurrence in those under 35 is not infrequent.) Its growth is often rapid and it soon extends beyond the cervix by the direct invasion of the adjacent tissues (Fig. 2) and by metastases to the lymph structures of the pelvis. Its frequency, virulence, the youth of many of its victims and the fact that they usually have children make it one of the most dreaded diseases and one of the most important problems confronting the gynecologist at the present time. Its rapid growth and early extension

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at St. Louis, June, 1910.
* For reasons of space, part of the text and of the illustrations are omitted. The entire article appears in the Transactions of the Section and in the author's reprints.

beyond the uterus have in a large measure been responsible for the failure to recognize it while it is still confined to that organ. In a large percentage of the cases the condition is detected too late for anything but palliative treatment, and hysterectomy is attended with a high primary mortality and a very small percentage of cures.

On account of its greater frequency, malignancy and importance, cancer of the cervix alone will be considered in this communication.

Clinical experience has taught that only a small percentage of patients have been cured by operation; thus



Fig. 1.

Fig. 2.

Fig. 1.—Advanced cancer of the body. From photograph of stained median sagittal section of the uterus ($\times \frac{1}{2}$), operative specimen. The growth usually does not extend beyond the uterus until late in the course of the disease, and in the majority of cases the diagnosis is made before this has taken place. Hysterectomy is attended with a low primary mortality and a high percentage of cures.

Fig. 2.—Advanced cancer of the cervix. From photograph of stained median sagittal section of the uterus ($\times \frac{1}{2}$), operative specimen. The growth usually extends beyond the cervix early in the course of the disease and the diagnosis is rarely made while it is restricted to the uterus. Hysterectomy is attended with a high primary mortality and a very low percentage of cures.

suggesting that either the entire growth had not been removed or, through faulty technic, the pelvic tissues had been infected with cancer at the time of the operation, or that there has been a true recurrence of the disease.

It is evident that a knowledge of the exact extent of the disease, especially in the "operable" cases, is of the greatest importance in the intelligent treatment of this condition.

The study of the specimens removed by the more radical operations has shown that the disease had extended beyond the uterus in a large percentage of them. The careful studies of Kundrat¹ in Wertheim's clinic have been of great value. Similar studies have been made in other clinics and they all, in the main, confirm the findings of Kundrat.

In 1906 I reported² the results of a careful study of twenty-seven specimens removed in Dr. Kelly's clinic at the Johns Hopkins Hospital. Cancer was found in the parametrium in seventeen instances, eight times as direct extension alone, either in the form of thread-like processes or *en masse*; three times as metastases in the lymph structures of the parametrium without any evidence of a direct extension of the disease from the cervix; and in six cases both forms of invasion were present. In nineteen cases some of the pelvic lymph-nodes

had been removed, and cancer was found in nine of these. In three of the latter there was no evidence of cancer in the parametrium. I am at present studying the material from eighteen additional cases; fourteen of the specimens were obtained by me at operation, and four at autopsy from patients dying during the advanced stages of the disease. While these studies are not yet completed they confirm the findings in the previous report.

We may classify cervical cancer according to its origin, whether from the portio vaginalis or from the mucosa of the cervical canal. Irrespective of their situation or histologic structure the growths may usually be grouped as either everting (vegetative) or inverting (infiltrating). Intermediate types are seen, and possibly in the progress of the disease a growth may sometimes pass from one morphologic type into the other.

The everting type, arising from the portio vaginalis, forms a sessile or pedunculated tumor projecting into the vaginal canal; it tends to spread over the mucosa and gradually invades the underlying tissues (Fig. 3). It is apparently less malignant and less frequent than the inverting form.

In the latter variety the process seems to be reversed. The growth soon extends into the deeper tissues and sometimes with very little evidence on the surface (Fig. 4). Necrosis often occurs early with a resulting loss of tissue and the formation of the so-called ulcers. This variety is apparently the more frequent one and also the more malignant. It soon extends beyond the uterus by the direct invasion of the adjacent tissues and by metastases to the lymphatic structures of the pelvis.

The two varieties may also arise from the mucosa of the cervical canal; here the inverting form is the more frequent and malignant (Fig. 5).



Fig. 3.

Fig. 4.

Fig. 5.

Fig. 3.—Everting cancer of the portio vaginalis ($\times \frac{1}{2}$). Less frequent and malignant than the following; bleeding usually occurs early, the growth is readily detected on inspection and palpation.

Fig. 4.—Inverting cancer of the portio vaginalis ($\times \frac{1}{2}$). One of the most frequent and malignant types; bleeding may not occur until late in the course of the disease and the diagnosis is not as easily made as in the preceding.

Fig. 5.—Inverting cancer of the cervical canal ($\times \frac{1}{2}$). This type is apparently less frequent and less malignant than the same type arising in the portio vaginalis; bleeding may not occur until late in the course of the disease. In its early stages a diagnosis can be made only through curettage of the cervical canal.

THE DIRECT EXTENSION OF CANCER INTO THE TISSUES ADJACENT TO THE UTERUS

Cancer may invade the tissues adjacent to the uterus as delicate thread-like processes or *en masse*. These processes are sometimes found in the nerve sheaths, other times in definite lymph-vessels but more often in whatever tissues are nearest the growth, in what are known as lymph-spaces. The parametrium is the tissue most frequently involved and often

1. Kundrat: Arch. f. Gynäk., 1903, lxxix, 355.

2. Sampson, J. A.: Am. Jour. Obst., 1906, liv, 433.

near the junction of the cervix and the vagina (Fig. 6). This is a very unfortunate situation because here the cervix is in its closest proximity to two very important structures, namely, the bladder and the ureters (Fig. 7). Furthermore, it is very difficult to obtain a wide excision of the parametrium at this level, whereas higher up, where the direct extension is less frequent, a wide excision is much easier. The growth may extend anteriorly, laterally or posteriorly. In its anterior extension it soon reaches the bladder, in its lateral, the tissues about the ureters, while posteriorly it is separated from the rectum by the cul-de-sac. The place at which the cancer extends beyond the cervix is determined by many factors, such as its origin, *i. e.*, whether in the portio vaginalis or the mucosa of the cervical canal, whether in the anterior or posterior lip and whether near the right or left side. There are other factors determining the direction of its growth which we are unable to ascertain.

The reaction on the part of the tissues involved varies greatly in different specimens. Often there is an increase in connective tissue; at other times an inflammatory exudate is present; and again there may not be any apparent reaction on the part of the tissue surrounding the growth. The reaction may sometimes be due to the presence of bacteria in the necrotic portion of the growth, but I think that it is often due to the cancer itself, because the tissues involved by the metastases may show the same reaction as those involved by the primary growth.

The Bladder.—In the study of the specimens obtained in the forty-one operative cases the musculature of the bladder wall was found to be invaded by cancer in eight (Fig. 8). In seven of these it occurred at the level pre-

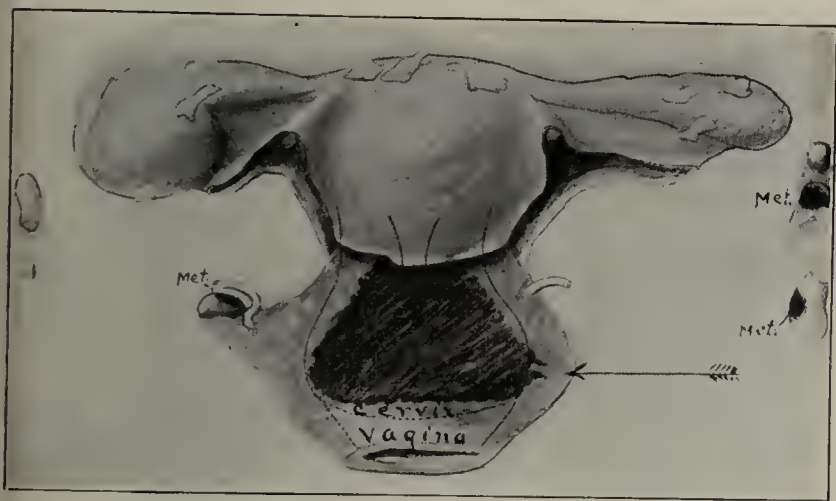


Fig. 6.—The most frequent situation of the direct invasion of cancer into the parametrium. From drawing showing the extent of the cancer in an illustrative case ($\times \frac{1}{2}$). In over half of the operative cases the parametrium is already invaded by cancer. This occurs most frequently at the junction of the cervix and vagina (see arrow), where the cervix is in its closest proximity to the bladder and the ureters.

viously mentioned. If the growth causes a marked reaction in the surrounding tissues, the bladder may become adherent to the cervix before the growth has extended through the cervical tissues. This may be detected during the operation in attempting to free the bladder from the cervix.

The early involvement of the bladder has not received the attention it deserves. Its most important feature is that the growth may invade the intramural portion of one or both ureters.

The Ureters.—It is well known that hydro-ureter and hydronephrosis, due to compression or actual invasion of the lower end of the ureters, exists in a large per-

centage of the patients dying in the advanced stages of the disease. The renal insufficiency resulting from stricture of the ureters is a frequent cause of death. The proximity of the ureters to the cervix, the early invasion of the parametrium, especially at the level where the ureters are nearest the cervix, the frequency of accidental injury to these ducts in hysterectomy for uterine cancer, together with the autopsy findings mentioned above, would cause one to infer that the ureters were actually involved by the growth soon after its extension from the cervix. I have studied very carefully the parametrial portion of twelve ureters (twice a dou-

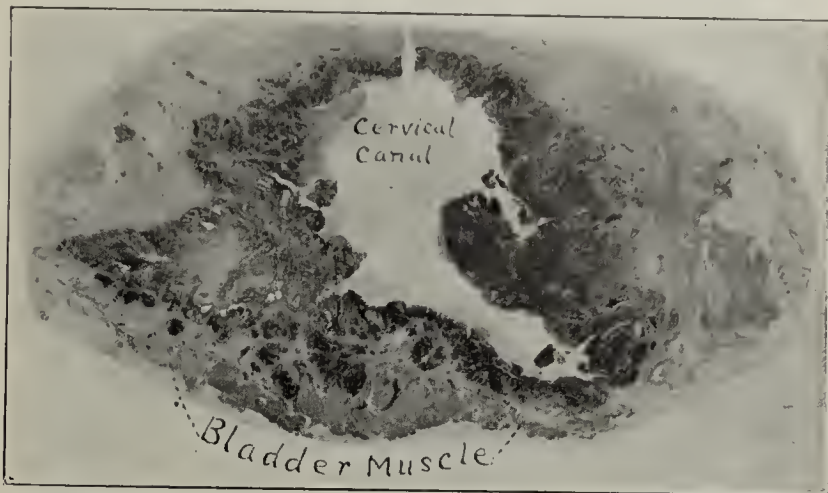


Fig. 8.—The direct extension of cancer into the bladder wall. From photograph of stained cross-section of entire cervix ($\times 1$), operative specimen. The growth has invaded the parametrium laterally and the bladder wall anteriorly. The bladder is often invaded early in the direct extension of cancer from the cervix.

ble ureter was present, thus making fourteen) which had been resected on account of the apparent invasion of the parametrium about the ureters by cancer. In four cases both ureters had been resected and in four only one. In only one instance was I able to find a ureter actually invaded by cancer. In all these cases cancer was present in the parametrium and in some the invasion extended into the tissues about and even beyond the ureter. The single instance of invasion of the ureter occurred in its intramural (vesical) portion from cancer present in the wall of the bladder.

I have concluded (possibly from insufficient data) that the ureter is rarely invaded in the operative cases and have attributed this to three possible factors, first, its peristalsis; second, the protection afforded by its "sheath," and third, that there may be sufficient difference in the lymphatics of the cervix and ureters to render the early invasion of the latter infrequent. It seems remarkable that in a series of forty-one cases the bladder was involved in eight instances and a ureter only once and yet we realize that the main lymph-channels from the cervix cross the parametrial portion of the ureter. In previous papers I have called attention to the "ureteral sheath" and have stated that I believed that the peristalsis of the ureter converted the tissues about it into a form of sheath which is not a distinct anatomic structure but simply the tissues along the course of the ureter which had been molded into this shape (Fig. 7). In those cases in which the parametrium is invaded and there is a reaction on the part of the tissues involved with the formation of connective tissue, this "sheath" may become markedly hypertrophied (Figs. 9 and 10). In this hypertrophied condition it may afford temporary protection to the ureters. As this hypertrophy increases the ureter becomes compressed and later may become

invaded by cancer. This marked thickening of the "sheath" may possibly arise from two sources, first, the reaction arising from its invasion by cancer and second, the local irritation caused by the ureter rubbing against it during its peristalsis.

From the study of material obtained at autopsy of those dying in the advanced stages of the disease I have found that the ureter may become involved from three sources; first, its intramural (vesical) portion from cancer in the bladder wall (Fig. 12), second, its parametrial portion from the direct extension from the pri-



Fig. 9.—The direct extension of cancer into the tissues about the ureter. From photograph of stained cross-section of right half of the cervix and adjacent tissues ($\times 2$), operative specimen. The growth has invaded the tissues (sheath) about the ureter, causing a hypertrophy of the latter, which may temporarily protect the ureter. The tissues about the ureter are often involved early in the direct extension of cancer from the cervix.

mary growth (Fig. 13) or from metastases to lymph-nodes of the parametrium, and third, the pelvic portion above the parametrium from the direct extension from metastases in the pelvic lymph-nodes. Once gaining access to the ureter, the growth may extend in its walls and sections taken at other levels may show what appear like metastases in the ureter (Fig. 14).

The Vagina.—The involvement of the vagina presents three pictures: the direct extension over the surface, the direct invasion of the deeper structures from above which may appear without any evidence of the disease on the surface other than a slight elevation caused by the growth in the underlying tissues, and finally the so-called implantations. Aside from an occasional slight involvement of the vagina at its junction with the cervix, in only four of the forty-one operative cases was there any marked invasion of its tissues.

I have had the opportunity to study only one "vaginal implantation" where the tissue between it and the primary tumor was intact. In this instance I found that the implantation was apparently connected with the primary tumor by a thread-like process of cancer, *i. e.*, it was a direct extension of the growth and did not result from a "retrograde metastasis" or implantation of cancer cells in an abrasion of the vaginal mucosa. I used the word "apparently" because complete serial sections were not made and thus I cannot state that the thread

of cancer was intact for its entire course from the primary growth to the nodule in the vaginal mucosa.

Rectum.—In only one of the operative cases was the rectum invaded, and this resulted from the direct extension posteriorly with obliteration of the cul-de-sac and invasion of the anterior wall of the rectum. The rectum may also be invaded by the extension of cancer in the posterior vaginal wall.

Body of the Uterus, Tubes, and Ovaries.—The body of the uterus was involved in only seven of the forty-one cases, and in all of these the disease was advanced. This is more apt to occur in cancer arising in the cervical canal, especially if it is of the adenomatous variety. The tubes and ovaries were not examined microscopically in this series, but there was no evidence of cancer in them which could be detected in the gross specimens.

METASTASES

Apparently if cancer once gains access to a lymph-vessel it either grows in the vessel in continuity with the primary growth or, if set free, it is carried by the lymph-stream and usually does not stop until it reaches a lymph-node whether it be situated in the parametrium or further on. Metastases to structures other than lymph-nodes are very unusual.

Metastases may be divided into four regional groups: the parametrium, pelvic lymph-nodes, abdominal lymph-nodes, and lastly, other parts of the body.

Parametrium.—Metastases to the lymphatic structures in this situation are of frequent occurrence. A careful study of the parametrium has been completed in thirty-two of the forty-one operative cases and parametrial metastases were found in ten of these. In this

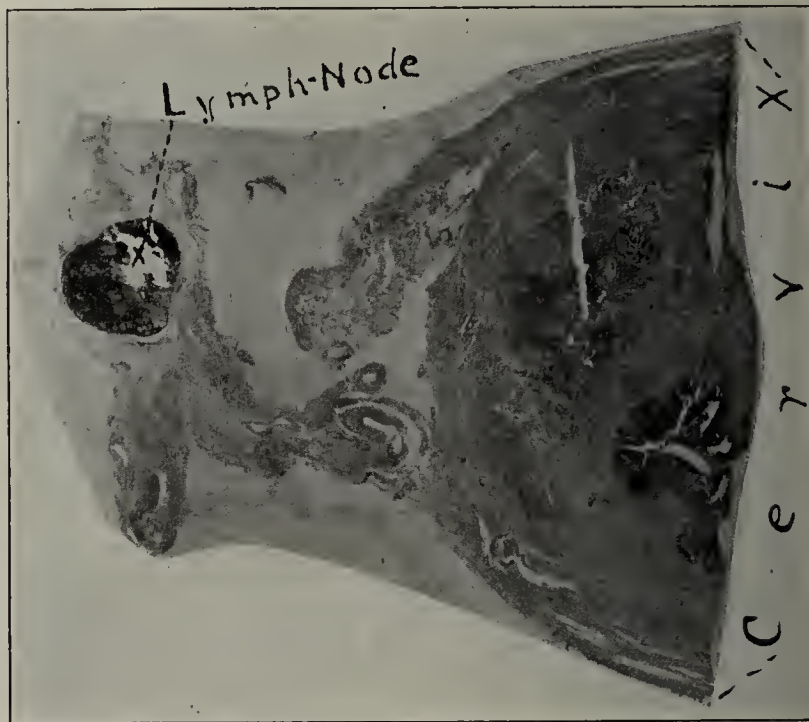


Fig. 15.—Metastasis in lymph-node inconstantly present near the crossing of the ureter by the uterine vessels. From photograph of stained cross-section of right half of the cervix and adjacent tissues ($\times 2$), operative specimen.

situation we may recognize four varieties of lymph-nodes:

1. *The Parametrial Lymph-Node Inconstantly Present at the Crossing of the Ureter by the Uterine Vessels.*—It was found and removed eight times in this series of forty-one cases (and only on one side). Cancer was present in three of the nodes removed and in none of these did it apparently alter in any way the surrounding tissue (Fig. 15).

2. *Small Lymph-Nodes Scattered Throughout the Parametrium.*—These are apparently typical lymph-nodes and occur normally in varying number. They are usually found along the course of the main lymph vessels. In one instance a typical node was found in the tissues of the cervix itself (outer portion). Metastases were found in these nodes in four of the thirty-two cases in which a complete study of the parametrium has been made (Fig. 16). In one case there was a thickening of the tissues about the node and in another the retrograde growth of the cancer from the node into the afferent lymph-vessel. The infected nodes were apparently not increased in size and in two there was no change in the surrounding tissues.

3. *Intravascular Lymph-Nodes.*—These small nodes project into the lumen of the lymph-vessels like sponges. I do not know if they may occur normally in the parametrium or if they may be associated with diseased uterine conditions other than cancer. I have found them in only four specimens of uterine cancer and only in the parametrium. In three of these four cases, cancer was found in one or more of these nodes (Fig. 17). Possibly they are newly formed lymph-nodes and later develop into the small lymph-nodes previously described; or they may be the latter observed under different conditions of activity. In one specimen they were very numerous; in a section taken at one level eight were present.

4. *Small Lymph-Nodes Which Apparently Do Not Bear Any Relation to the Lymph-Vessels.*—Collections of lymphoid tissue about blood-vessels may be present in large numbers, appearing in the section as darkly stained areas the size of miliary tubercles. They apparently owe their origin to a stimulus directly or indirectly



Fig. 16.—Metastasis in a small lymph-node of the parametrium. From photograph of stained cross-section of right half of the cervix and adjacent tissues ($\times 2$), operative specimen. These nodes are normally present in varying numbers and are apparently sometimes increased in size and number in uterine cancer. A metastasis is present in the periphery of the larger node. It is possible that these nodes may sometimes prevent metastases from reaching more distant nodes.

caused by the cancer, but do not necessarily bear any relation to the lymph-vessels. I have never seen any metastases in these nodes.

Pelvic and Abdominal Lymph-Nodes.—The study of the material obtained from those operations where some of the pelvic lymph-nodes have been removed have shown that metastases occur in from one-third to one-

half of these cases. I have studied the material from twenty-three of these cases and found cancer in the pelvic lymph-nodes in twelve. While these metastases occur more frequently in patients with extensive primary tumors they may be present in very early cases. The primary tumor may be very small, the parametrium free and yet metastases may be present. This occurred especially in the inverting type arising in the vaginal portion of the cervix. The glands most frequently found involved were those situated in the triangle between the external and internal iliac vessels and along

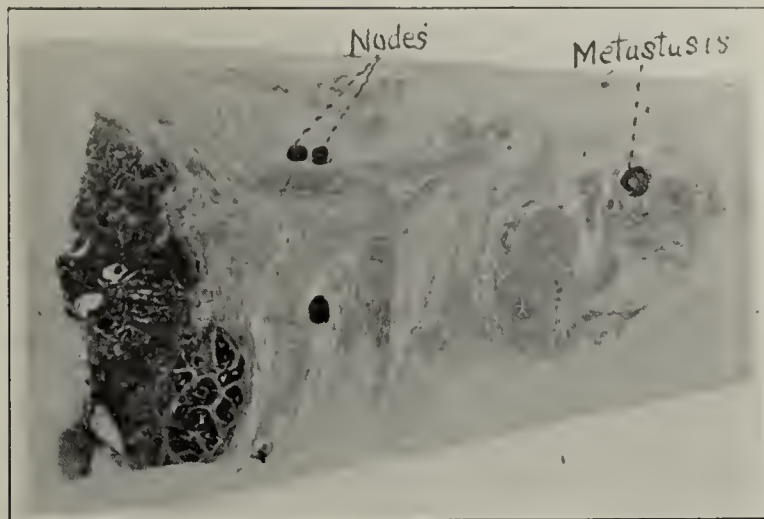


Fig. 17.—Metastasis in an "intravascular" lymph-node of the parametrium. From photograph of stained cross-section of the left half of the parametrium ($\times 2$), operative specimen. These nodes project into the lumen of the lymph-vessels like sponges, are possibly newly formed, and it is possible that they sometimes check cancer as it is carried along the lymph-vessels.

the external iliaes. I do not think that my observations are of any great value in determining the exact distribution of metastases in the pelvic lymph-nodes because the above mentioned nodes were the ones most frequently removed and often others were not removed which might have been infected.

I have studied all the abdominal and pelvic lymph-nodes in three operative cases. The patients died as the result of the operation and the lymphatics were obtained at autopsy. All the glands were cut and an attempt was made either to find or to exclude cancer. Metastases were found in only one of these cases. In this instance three nodes were found to contain cancer (Fig. 19).

The early metastases are usually found in the periphery of the node along its convex border or near its proximal pole. The reaction varies greatly (Fig. 20).

Metastases to the lymph-nodes in other parts of the body may occur but they are very infrequent.

CONCLUSION

The term "cancer of the uterine cervix" defines the exact condition present in only a very small percentage of the cases when first seen by the physician. In more than half of them the growth has so extensively invaded the adjacent structures that palliative treatment alone is indicated and in over half of the operative cases the growth has already extended beyond the uterus. As in its extension it invades the lymph-spaces of the adjacent tissues and metastases occur in the lymph-nodes of the parametrium, pelvis and even the abdomen, this condition should be studied and treated as carcinoma of the lymphatics of the uterus and adjacent tissues.

In its direct extension the lymph-spaces of the parametrium are usually first invaded, then those of the

bladder wall and rarely, in the operative cases, those of the ureters, although the tissues about them may be infected and in this way the ureter may be compressed. Later in the course of the disease one or both ureters are very apt to be invaded.

Metastases to the pelvic lymph-nodes are present in at least one-third and possibly over half of the operative cases. While they are more frequently found in the advanced than in the early ones, they may be present in cases in which the primary growth is very small and the adjacent tissues free from cancer. Metastases to the abdominal nodes are sometimes present in the operative

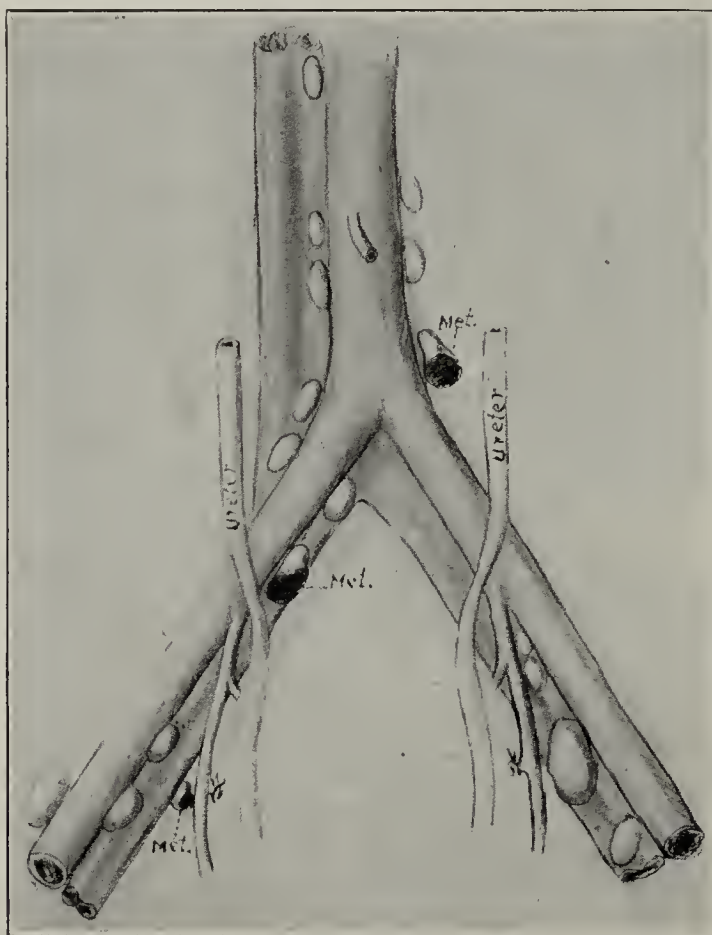


Fig. 19.—Metastases in the pelvic and abdominal lymph-nodes. The patient died on the fifth day after the operation. The abdominal and pelvic blood-vessels with their accompanying lymphatics were removed at autopsy. The lymph-nodes represented were found and carefully studied. Metastases were found in those indicated.

eases. I do not know their frequency and whether or not they may be present in the very early ones.

Should the operative treatment of this condition be based solely on laboratory findings it would consist in first, dissecting the lymphatics from the blood-vessels of the lower abdomen and pelvis, then freeing all the tissue lateral to the cervix from each pelvic wall and removing it, together with the lower portion of both ureters, the uterus and any portion of the bladder wall which may be adherent. We know that the ureters are actually invaded by cancer in only a small percentage of the operative cases but the tissue about them is very likely to be invaded and the main lymph-vessels cross them. In order to remove this tissue undisturbed the lower portion of the ureters would have to be sacrificed. The clean dissection of the lymphatics of the lower abdomen and pelvis is very difficult even in a cadaver and takes a long time—too long with our present technic for any patient to stand on the operating table. The resection of the ureters and their implantation into the bladder is attended with the danger of compressing them, thus causing renal insufficiency and possibly leading to renal infection. Such an operation is attended with a prohibitive primary mortality.

My own experience in the early cases with a wide excision of the parametrium and freeing the ureters with or without the removal of the accessible pelvic nodes has been attended with a very low primary mortality (I have not lost a favorable early case) and I hope for a high percentage of cures. This group of cases is small and sufficient time has not elapsed to render my statistics of any definite value. On the other hand, the operative treatment of the advanced cases, in which I have sacrificed a portion of one or both ureters or resected portions of the bladder wall (and in one case a portion of the rectal wall) has been attended with a high primary mortality (50 per cent.) and the growth has recurred in all patients who have survived the operation. The treatment of the so-called border-line cases, in which there has been a wide excision of the parametrium with freeing the ureters, has also been attended with a high primary mortality and the growth has recurred early in the majority of them. On the other hand two patients who were operated on in July, 1905, and which were unfavorable cases, are at present apparently free from cancer. In one of these, metastases were found in the pelvic lymph-nodes. Such instances as these encourage one to operate in unfavorable cases.

As a result of a combined laboratory and clinical study I wish to emphasize the following points:

1. In over one-half of the operative cases the growth has extended beyond the uterus at the time of the operation and the recurrence after operation is usually (possibly always) but a continuation of a growth not entirely removed.

2. Certain types are more malignant than others. In my experience the inverting type arising in the portio vaginalis is the most frequent and most malignant variety, the same type arising from the mucosa of the cervical canal is less frequent and less malignant, while the evert type is still less frequent and malignant. As

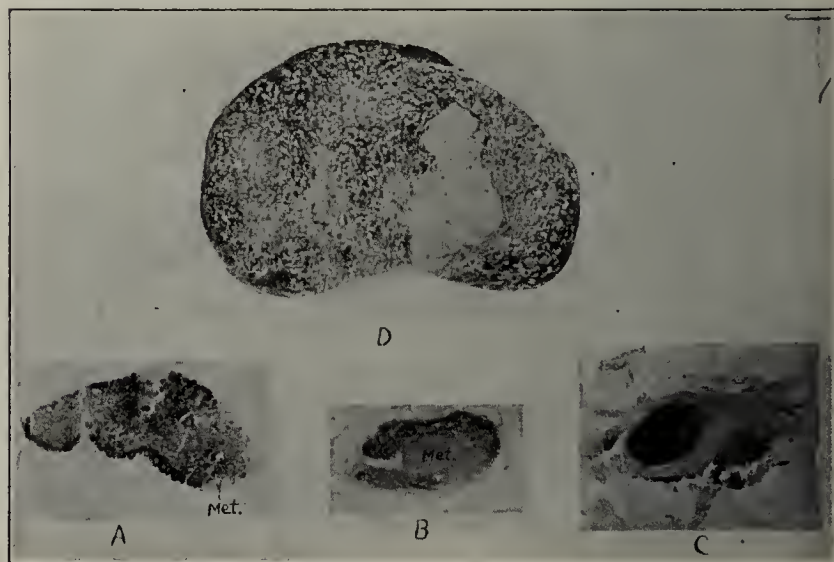


Fig. 20.—Metastases in pelvic and abdominal lymph-nodes showing variations in reaction on part of nodes. From photograph of stained sections of these nodes ($\times 1$), operative specimens. A, early metastasis in the proximal pole of an iliac node. The node is apparently hypertrophied, but there is no reaction in the tissues about it. B, metastasis in a similar node. Over half of the node has been replaced by cancer, yet the node is apparently but very little increased in size and the tissues about it are unaltered. C, another metastasis showing that the cancer has invaded the surrounding tissues and these are markedly thickened. D, lumbar node diffusely invaded by cancer and greatly enlarged. There was no reaction on the part of the surrounding tissues.

was stated in the beginning of the paper, carcinoma of the body is so much less frequent and less malignant than cervical cancer that it was not further considered in this paper.

3. The reaction on the part of the tissues invaded by cancer varies greatly.

A. Sometimes there is very little, thus suggesting that it is unable to resist its invasion.

B. At other times there is a marked increase in connective tissue about the cancer which may retard its growth.

C. The lymph-nodes of the parametrium are sometimes increased in size and new ones are apparently formed. These may check metastases.

4. We are unable to judge definitely of the extent of the disease before the operation.

A. The growth may appear to be very early and yet metastases may be present (especially true of the inverting type).

B. The primary growth may seem very extensive and yet be entirely local.

C. A normal-feeling parametrium does not exclude the possibility of cancer in its tissues.

D. The induration felt in the parametrium is not always due to carcinoma.

E. For the above reasons an apparently favorable case may prove unfavorable and *vice versa*. Exploratory operations are sometimes justifiable.

5. The most radical operation consistent with a "permissible primary mortality" is indicated, especially in the early cases. The first requisite of this operation is a wide excision of the parametrium. The routine removal of the pelvic lymph-nodes is still, in my mind, a debatable procedure with our present technic. If the nodes have not been removed, cancer has been left behind

the chance for curing the patient and for these reasons we should do the most thorough operation which we believe that each individual patient will stand.

6. Extensive operations in advanced cases are usually unjustifiable and great care should be exercised in the choice of the border-line cases in which operation should be done.

7. *The most important aid to the treatment of this condition is an earlier diagnosis.*

8. An earlier diagnosis could have been made in the majority of our cases. Sometimes symptoms referable to the growth do not arise until late in the course of the

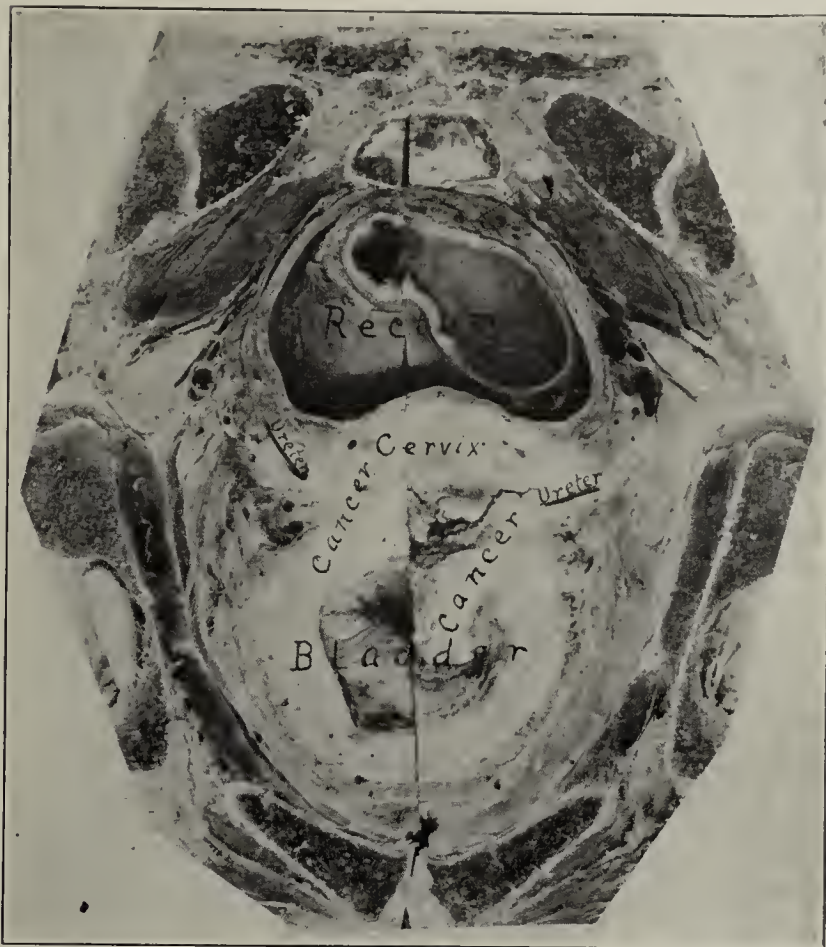


Fig. 22.—Cross-section of the pelvis through the plane A-B in Figure 21. Wires are inserted in the lumina of both ureters. The one in the right ureter can be seen protruding into the bladder at the margin of the vesicovaginal fistula. The ureteral walls are invaded by cancer, causing hydro-ureter, hydronephrosis with resulting renal insufficiency and death.

disease, but in *over half* of the *forty-one operative cases* referred to in this communication there was a history of *neglected uterine bleeding of over six months' duration*.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SAMPSON, JACOBSON, RIES, AND FREDERICK,
CONSTITUTING A SYMPOSIUM ON CARCINOMA OF
THE UTERUS

DR. GEORGE GELLHORN, St. Louis: The papers have presented so many phases of the subject that I shall confine my remarks to the paper presented by Dr. Frederick. Dr. Frederick has spoken of the cautery for two different purposes, if I understood him correctly; one for the purpose of radically curing a cancer, and the other for the purpose of treating inoperable cases of uterine cancer. I wish to refer only to the second use of the cautery. I can confirm the statement of Dr. Frederick that the thermocautery will relieve the symptoms for a short time but I must insist that any lasting good effect can be accomplished only by a methodical repetition of its use. Only if it be applied every four weeks for six or seven months in succession is a good result likely to occur. Unfortunately the patients do not return for such repetition; at least, my experience has been that a patient would come a second time, but I have yet to see the patient who would



Fig. 21.—Advanced cancer of the cervix with extensive involvement of the bladder and resulting vesicovaginal fistula (patient only 25 years of age). From photograph of median sagittal section of the pelvis. Line A-B indicates the plane at which the section illustrated in the following figure was taken.

in at least one-third and possibly in over half of our operative cases. Against their removal it may be said that it increases the primary mortality and that patients in whom metastases have not yet occurred will die from the operation who would have survived had this not been done. It is also impossible to remove at operation all the lymph-nodes which may be infected, and at best we must be satisfied with their incomplete removal. The more thorough and complete the operation the greater

come back to the hospital for a third cauterization, so that the good effect of the cautery remains more or less theoretical. The majority of inoperable cases after all are in the hands of the general practitioner and the cautery is hardly an appliance of general practice. The odor of the profuse discharge and the hemorrhage are so overwhelming that the practitioner is practically helpless. The acetone method is especially suited to his needs. Regarding the criticism made by Dr. Frederick, I would state that the penetrating effect of acetone seems to be very great. From our laboratory knowledge we know that it deeply penetrates dead tissues, and it is only logical to suppose that the penetration in living tissue is even more quick. Two and a half months ago I curetted an inoperable cancer and after the excochleation the opening was large enough to admit a speculum about two inches in diameter. On Monday last I only succeeded in introducing a very small vaginal nozzle into the crater in order to pour the acetone in. This would show that the penetration is sufficiently deep and the resulting formation of scar tissue satisfactory. Of course, these patients all die, but we are able to keep them alive from one to two years and in comparative comfort. One of our patients in the St. Louis Skin and Cancer Hospital who had been declared inoperable by Wertheim when he was in St. Louis occupied her position as scrub-woman in a downtown office a year after having been declared inoperable, earning a livelihood for herself and family. The woman died almost two years after the first treatment and might have lived longer except that the absence of symptoms induced her to stay away from our treatment. The acetone treatment is a very simple method and can be used in the hands of the general practitioner who has not hospital facilities. The lesion should always first be curetted very thoroughly. I use a large spoon devised by Dr. Boldt. After curetting, I insert a Ferguson speculum into the bleeding wound and then pour the acetone into it. In all the cases that we have observed the bleeding has been checked. We use the pure acetone, a chemical that is used for the wholesale preparation of chloroform, and also in machine-shops for dissolving fats. It is poured into the speculum and left there for fifteen or thirty minutes. It is then permitted to run out, a piece of gauze soaked in the acetone is inserted into the wound and the speculum is removed. The patient is returned to bed, which she may leave the next day. Regular treatment is begun five days after this preliminary treatment and applied three times a week for several weeks. As the symptoms improve we gradually lengthen the intervals. I have again and again tried to curette these lesions after five or six or seven weeks of treatment and I have hardly ever succeeded as the walls are hard and smooth in contradistinction to the spongy character of the original excrescences. The subsidence of the symptoms of the patient, aside from the relief of hemorrhage, odor and discharge, is very marked. Perhaps owing to its chemical relationship to chloroform the acetone seems to have an anesthetic effect on the patient. In many cases the pain disappears. When the cancer has reached the nerves, of course, the acetone does not relieve pain. In those cases we have to resort to morphin. Certainly, however, the subjective symptoms of cancer have been greatly relieved by this method, and we have, after trying various other methods, always returned to this and shall continue to use it until we find something better. At that time, however, we shall be the very first ones to adopt the better method.

DR. REUBEN PETERSON, Ann Arbor, Mich.: I have been much interested in the Ries operation for the radical cure of cancer of the uterus ever since Dr. Ries brought forward his operation in 1895. I had the good fortune to be associated with him shortly after that time in the Chicago Post-Graduate Hospital. I can only praise the thorough work which Dr. Ries has done with his operation and the consistency with which he has followed along one line. But I differ with Dr. Ries because of my own experience. We are not partial to any one operation unless it will save the most patients. My experience with the radical operation for cancer of the uterus as I tried to carry it out according to Dr. Ries' directions, gave me such a high mortality that I concluded that if I

could do a less radical operation and save more lives, the women at least would be better off. I agree with Dr. Ries that statistics based on less than 100 cases do not count for much. Yet, right after that he gives his own statistics with much less than that number. We must talk about our results for that is what we have to go on. My mortality for the first fourteen cases was 42 per cent. That is a shocking mortality to anybody who is doing abdominal work. Out of the seven patients that have been operated on for five years there are four alive. Two of these had carcinoma of the fundus, which Dr. Ries very properly says are in another category. Still, theirs are cancer cases and in my hands prior to this abdominal operation I did not save such patients. You say it is easy to save them, but I didn't. I remember only one patient whom I operated on for carcinoma of the body that I saved by the old method. So setting aside, if you please, the two cases of carcinoma of the fundus I have two patients out of seven to my credit who have lived beyond five years. Since that time I have been doing less radical work, not making such extensive dissection of the glandular tissue as Dr. Ries recommends. My primary mortality is much better, as of course, he will say it should be. The operation, even when one does not dissect out the glands, is a terrible one and I agree with him it is the worst we have to perform. In my last twenty-three cases I lost but one patient. Some have lived for over three years. I do not know whether they are going to live beyond five years, but I know that the mortality is much more satisfactory, and taking that as a whole I think I shall be better off as far as saving these women is concerned than if I did the radical procedure.

Statistics improve with the operator's experience. I can now see my mistakes with my first cases. I have had the same experience that Dr. Ries and others have spoken of, that when you begin with this operation you have an idea that when the uterus seems to be firmly fixed in the pelvis the patient is beyond hope. I quite agree with the essayist when he says that every operation should be an exploratory laparotomy. In some of the cases it is a matter of surprise to find that the induration to one or the other side of the cervix is really inflammatory tissue and not carcinomatous.

There is a certain class of patients whom I exclude from this radical operation irrespective of the extent of their disease because the primary mortality is so great. Such patients are the excessively fat women. They die from the operation almost invariably and I think that I shall do better by them in carrying out the palliative treatment because in my hands, at least, they do not stand the ghost of a chance of surviving with the radical operation.

DR. A. GOLDSPOHN, Chicago: I also admire the radical work which Dr. Ries has done; but when we consider the results of very extensive autopsies in uterine cancer cases, particularly those made by Schauta, which show that in only about one-fourth of all the cancer cases the glandular involvement is located only in or near the pelvis, so that thorough operation and search for the glands is rational, we feel that extreme searching for glands is irrational and disappointing. We all know the extensive research work which Schauta has done in some eleven or twelve thousand post-mortem examinations of glands. The conclusion of the matter is that if these ideas of thorough extirpation are to be actually followed, then the operation, which consists in eliminating the human trunk, as Dr. Ries has mentioned, would be necessary.

In the majority of cases the metastatic glands are located in both the upper and the lower parts of the abdominal cavity. In a small proportion they are in the upper part only. In all of these the extreme search for glands means the cutting short of many lives by unwise operating, for no good reason. Since recurrence most commonly takes place in the cicatrix of the amputated vagina a very liberal exsection here is called for. A procedure which I like consists in doing an abdominal hysterectomy with a moderate search for glands. Take out the uterus thoroughly with the adnexa and broad ligaments as closely up to the bony limits as possible. Get the entire uterus free from everything except the vagina. Dissect the upper part of the vagina also from the connective tissue area.

Then tuck the whole uterus with the inverted vagina down into the small pelvis. Close over the small pelvis by peritoneum from different directions at about the level between the true and false pelvis and close the abdomen. Then go to the vagina and take out the uterus, taking with it the upper portion of the vagina more thoroughly and safely against bleeding than can be done from above. This method has given me rather satisfactory results. Repeated cauterization is also followed by good results, in the inoperable cases. I have seen a number of such patients live quite comfortably for three and four years.

The excellent views of Dr. Sampson have shown what needs to be emphasized—that in the majority of cases cancer of the uterus begins in the upper part of the cervix. Germans have shown that it comes chiefly from retention cysts, *i. e.*, the Nabothian follicles superficially and deeply seated up in the cervical canal. These vulnerable and dangerous glands can mostly be removed in amputations of the cervix, when any operation for lacerated or pathologic cervix is indicated. Such amputation, then, and not the Emmet trachelorrhaphy should be done. As a prophylactic for cancer it will do much more good than the heroic search for glands with the attendant mortality in attempts at cure.

DR. ELIZA M. MOSHER, Brooklyn, N. Y.: The small number of patients with cancer of the uterus who are cured emphasizes what has been said here and for years past on the importance of instructing women in reference to the symptoms and early signs of this disease. Even though we realize the tremendous importance of it, we cannot do very much in our offices in the way of prevention. You will be glad to hear that the committee appointed last year by the House of Delegates, termed the "Public Health Education Committee" has been able during this year, in New York and Brooklyn alone, to give careful instruction on this subject to more than a thousand women, through these lectures. Throughout the United States the same teaching is being carried on, and we are hoping that the number of cases of late cancer will be lessened materially during the next five years through the work of this committee.

DR. HORACE G. WETHERILL, Denver: In regard to the work to which Dr. Mosher has just referred, as your representative in the House of Delegates, I may say that this committee made its report to the House of Delegates yesterday and it was a very comprehensive, dignified and tactful report, showing excellent work on the part of the committee. So far as may be in our power this Section should endorse and support this educational committee.

DR. J. H. JACOBSON, Toledo: Just a word in reference to the statistics that I have shown. I realize full well that everything which Dr. Ries has said is true; that it is very difficult to get statistics in which a genuine radical abdominal operation has been performed, and that it is impossible to get statistics of operations performed as thoroughly as Dr. Ries does them. I was prompted to make this statistical study because the operations ordinarily performed for the cure of cancer uteri, have appeared to me only palliative at best. If we expect to make any advance in this work we must make our operations more radical. I admire Dr. Ries' work very much and have only words of praise for it. Wertheim's results are the best up to the present time. I hope that this statistical study will help operators to adopt this operation which has a higher percentage of permanent and absolute cures than any other.

DR. EMIL RIES, Chicago: Wertheim removes a few glands from a patient and gives a low percentage of carcinoma in the glands. That does not prove anything. If anybody removes glands extensively, as some have done, the number of cases in which carcinoma is found in the glands is about 60 per cent. That means that two out of three women have cancer in their glands when they have carcinoma of the cervix. You take the chances on the 60 per cent. if your main purpose is a large primary recovery. You can do so. You are the physicians and it is for you to say, only be honest with the patient. Tell her what you can do. Wertheim said in Chicago that all the patients in whom he found carcinoma in the glands had recurrence. Why? Because he did not take out enough.

The so-called recurrence in the scar in the vagina is not new disease. It is only the consequence of insufficient operation. The operation did not go far enough.

Just a word in regard to Schauta's report. Dr. Goldspohn did not tell you all about it. He did not tell that Schauta's work has been refuted by Mackenrodt. Schauta's paper shows that he examined from six to ten glands in each case, when the smallest number should be approximately twenty. As he overlooks the other fourteen the work of Schauta is absolutely useless. If you have no conception of the meaning of examining glands for carcinoma, try it in one case. I have examined 1,200 sections from one case without finding a single bit of carcinoma, while the next 200 sections were full of it. Anybody not willing to do such work should not talk about it.

REPAIR OF CEMENTUM

IN RELATION TO THE TREATMENT OF ALVEOLITIS *

M. H. FLETCHER, D.D.S., M.D., M.S.

CINCINNATI

Many years ago Dr. William H. Atkinson of New York endeavored to induce repair in the sockets of teeth which were deeply affected with alveolitis, by sponge-grafting, a method of surgery then in vogue.

At that time, from 1885 to 1890, the discussion of the etiology and treatment of the diseases of the sockets of the teeth, was at a very high pitch, the name "pyorrhea alveolaris" being then, as it is now, strongly attacked by many as inadequate and misleading. The etiology and pathology and the question whether it should be considered a local or a constitutional disease were also hotly discussed. Since then the methods of treatment have changed very little.

If, however, we knew all the causes and the actual tissues most involved in the repair we should better know how to treat the disease intelligently, and have a greater number of recoveries and those more complete. It is hoped the facts here to be presented may do something toward this desired end.

The wonderful recuperative powers of cementum have recently been brought to my attention with great force, and the result has been active research regarding this tissue. Such literature as I have been able to find about cementum and its relation to human teeth is confined to mere descriptions of its locality and histology but not of its necessities and uses.

Cementum is the bond of union between the teeth and bone, and seems much like bone in its recuperative and reparative powers. For one to know that under proper environment the cementum may and will reform, when it has been removed from a root or cut into grooves, should be a fact of much moment and value to those interested in the treatment of diseases of the sockets of the teeth and the surrounding tissues. The incident which encourages me to believe this to be true is as follows:

A year or more ago a young woman of 19 came to me for treatment. About four years previously she had lost the crown of the first lower molar on the right, by an attempt to have the tooth extracted. The crown had been broken at an angle quite below the neck so that the soft tissues, when they began to repair, lapped partially over the broken surface. On close examination the soft tissues were found to be adherent to the broken surface of dentin. This being very unusual, the roots were carefully extracted, the lump of soft tissue still adhering to the broken surface. The anterior root was decalcified,

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

with some of the soft tissue still adherent. Sections were made from the root and adherent tissue (Fig. 1). It was found that the cementum had not only grown over and become adherent to the broken surface of the dentin but had partly filled the canal of one root from the top down, something after the manner of the growth of secondary dentin induced by abrasion from mastication. The formative membrane was still adherent to these surfaces (Fig. 2). The cementum was very much thicker about the end of this root than is normal in teeth of this age (Fig. 3). This, no doubt, was due to the disturbance brought about by the attempt to extract the tooth. Nodules of cementum on the roots of the teeth are very common in older persons and are called exostoses, but to find cementum formed on and adherent to a broken surface of ivory of a human tooth, much as it is on the roots, is a new phenomenon in biology to me, and is of so much moment to those interested in the treatment of alveolitis that I have spent much time in investigating the subject.

The specimens examined seem to show that if environment is made perfect in treating deep-seated cases of alveolitis we may have a normal restoration of tissue to a great extent if not to a full amount. In the language of the general surgeon, we can expect to have a healthy useful stump if we cannot have a completed organ.



Fig. 1.—Section of anterior root of first molar ($\times 3$) ; d, dentin ; c, cementum growing on broken surface of dentin ; p. c, pericementum ; p, remnants of pulp chamber.

We all know numbers of cases in which teeth that, under treatment, have seemed hopelessly loose, in time have become firm and useful for many years; and I have wished many times that we might know just what the process of repair was. This one case of excessive growth and unusual attachment of the cementum to the broken surface of dentin teaches what this process of repair can be, and I am now convinced that it is the cementum on which we largely rely for the repair in these cases, it being the underlying factor of attachment. The specimens show excessive growth of cementum which must have been the result of some stimulating environment.

Cementum is of mesoblastic origin like dentin and bone; but bone seems to be one step too far away from dentin in physical character for perfect union between them to be possible, so that in the growth of teeth in vertebrate animals the cementum seems to have been a development by nature to supply the intermediate link as a bond of union between tooth and bone. Cementum is the natural product of the pericemental layer of the periosteum of the socket, and does not exist until the

root of the tooth is formed. The presence of the dentin of the root in proximity to the periosteum seems to stimulate the layer of cells next to the dentin to bring into action that unknown law, the differentiation of cells, and cementum is the result. Thus it is seen that the periosteum of the socket is remarkable in that it forms bone on one side and cementum on the other, and at the same time acts as a cushion against the forces of mastication.

Since we know by the specimens that this membrane is capable of what seems unusual things, we can set our goal at having Nature reproduce much of the lost attachment in diseased sockets. The necessary conditions to produce this result would mean that we must have live tissue to live tissue as is done in setting a broken bone. Sterile blood-clot must fill the space between. To produce this condition the roots of the tooth must be surgically free from foreign matter. They can be cleaned by scraping and polishing, or, better, by planing the roots off with instruments like Thompkin's, Hartzells' or Carr's sets, which leave live tissue on the tooth side.

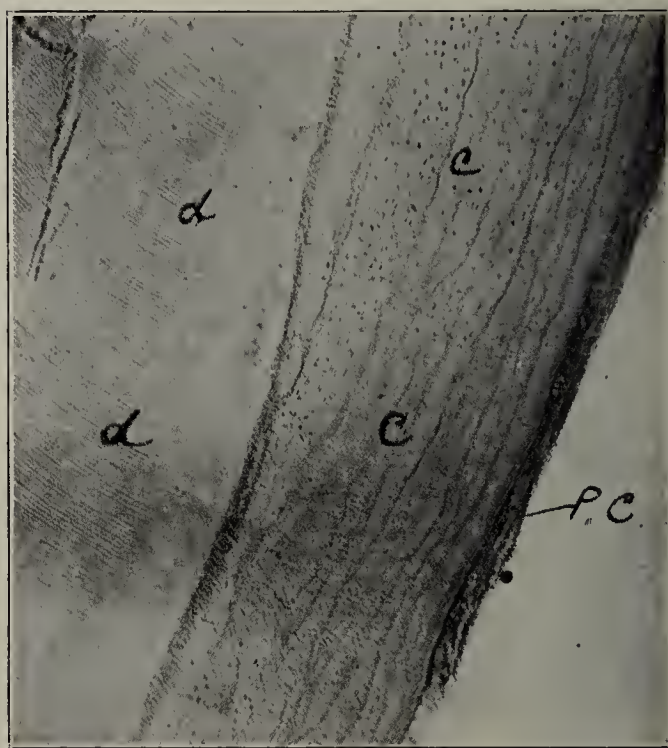


Fig. 2.—Normal cementum of the root ($\times 100$) to compare with the cementum found on broken dentin and in root canal ; d, dentin ; c, cementum ; p. c, pericementum.

All dead or diseased bone or other tissue should next be removed from the socket; this leaves live bone tissue on the other side opposing the live cementum, and if the wound be kept sterile by gently washing away the disorganized blood-clot at proper times, what would seem perfect conditions for repair will be produced, the space not being large enough to demand anything like sponge-grafting.

This condition no doubt existed in the case of repair here presented, that is, a broken surface of live dentin on one side and healthy cementum-producing tissue on the other side in close proximity, so that it could grow over the broken surface of dentin with the results shown. The cementum-producing membrane may come from above or below in the socket or from both directions.

If pus is found forming again, as it often is, either more thorough curetting or escharotic germicides such as pure lactic acid or iodine should be resorted to, in order to have Nature throw the strongest possible army of repair into the neighborhood. She will renew the effort, as often as called on, by making frequent fresh wounds in the socket. The principle is the same as that

according to which setons were formerly drawn daily through a wound; but daily is too often in these cases. This treatment should fall short of destroying any repair which has already begun.

If the tissues are put and kept in normal condition for repair, as above described, healing will take place in due time, that is, in from two or four months, or in whatever length of time it would naturally take such wounds to heal—possibly a year or more in some cases. But the physician must know when the tissues are in proper condition for repair and how to produce them. It is understood that many patients do not come for treatment until they are beyond recovery.

It seems to me that at present we proceed in the treatment of alveolitis without any definite idea of what processes are called into play in the healing; but we go

tent, but, surgically speaking, the reformation of enough periosteum and pericementum to line the whole tooth socket would not be considered a large amount to be reproduced. In cases of amputation of the apex of roots it no doubt is due to the cementum which covers the freshly cut surface that makes it possible for the tissues to retain the tooth in health instead of expelling it. Where roots may have been fractured repair may take place by the crevice being filled with cementum just as broken bone is cemented together by the fracture being filled with new bone.

Often arteriosclerosis, auto-intoxications or other systemic disorders hinder the healing of these wounds in the same manner as they hinder the healing of wounds in other parts of the body. If these conditions exist,



Fig. 3.—Top of Section 1 ($\times 75$) showing cementum growing up over the side and onto broken dentin and into pulp canal: d, dentin; c, cementum; p c, remnants of pericementum; p, remnants of pulp chamber.

ahead and do something; if the patient recovers, well and good; if not, we do not know why nor do we know what we should do in order to have Nature do the repairing which she is always trying to do and always will do if the physician is bright enough to know how to remove the hindrance in her way. Thus encouraged, Nature will accomplish what may seem wonders, but what to her is mere fulfilment of her own laws.

The facts as displayed in this case of repair certainly show a definite and encouraging goal for which to work and this goal is, I believe, the proper one; that is, we may look forward to the activity and reproductive power of cementum to form a new bond of union, knowing that this union will occur if the environment is made right. In bone surgery, it is not thought that the periosteum reproduces itself by growing edgewise to any great ex-



Fig. 4.—Higher magnification of Figure 3 ($\times 100$), showing more plainly the character of tissue: d, dentin; c, cementum; p c, remnants of pericementum.

they should be looked after either by the operator or the family physician, since the condition of the blood and blood-vessels have much to do with the susceptibility of the patients to alveolitis and to other diseases, as well as with the tendency to repair or to remain chronically diseased. So the systemic conditions must be looked after as well as those that are local.

Many patients suffering from necrotic and suppurative alveolitis are reported to have recovered under systemic treatment, but always after the deposits have been removed from the roots. From my point of view such patients recover on the same principle that tuberculous and other patients recover, that is, through such improvement in the patient's health by means of medical or climatic assistance that the system is equipped with sufficient additional material and vigor to overbalance and finally overcome the disease.

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ABSTRACT OF DISCUSSION

DR. FREDERICK NOYES, Chicago: For a long time I have been trying to teach that cementum was the means of attaching the surrounding tissues to the tooth, and that normal cementum continues to be formed as long as the tooth remains in function. A tooth that has just erupted has a few layers of cementum over the root. One that has been in use for a long life has a great many. Further, I have been trying to convey the idea that the tooth is continually moving as long as it is in function, and with every movement the attachment of the fibers to its cementum is cut off and they are reattached by the formation of a new layer of cementum. I think Dr. Fletcher will agree with me that these things which are physiologic facts occurring in the formation of every tooth are of prime importance in the consideration of this specimen, and that they are the foundation of the treatment of the roots of teeth in alveolitis.

The problem, then, which is presented to the practitioner in the treatment, for instance, of a deep pocket on the labial surface of the lower incisor where the normal attachment has been removed, is that of bringing the tissues in physiologic contact, and that is very far from an easy thing to do. If physiologic conditions can be obtained, the reattachment of the soft tissues to the surface of the root is the only logical thing to be expected. I would like to ask Dr. Fletcher if any of those broken fragments of dentin showed any formation of cementum?

DR. H. M. FLETCHER: They are enclosed in cement, and yet in most of them you can see an attempt at absorption.

DR. NOYES: That question was suggested to me from the emphasis of Dr. Fletcher on its being living dentin. I am not so certain on that point. That is that the formation of cementum continues on the surface of the root from which pulp has been removed, and moreover, formation of cementum continues on fragments of diseased roots in which there is no living dentin. For instance, I saw a case a few days ago, in which a tooth which had lost almost all of its peri-dental membrane, had become turned over sideways and formation of new cementum along the new under surface had occurred. Any damage to the outer surface of the dentin is always repaired by the formation of a new layer of cementum.

No surgeon ever closes a wound; all he does is to control conditions so that the living tissues can close the wound, and the thing that has led to the development of modern surgery has been a knowledge of the conditions of life and an ability to control cell activity. The same way in this field. No dentist can ever reattach the tissues to the surface of the root, but if he knows enough about the vital conditions and can control them the tissues may be able to carry out their activities, and they may reattach themselves in their normal position.

DR. G. V. I. BROWN, Milwaukee, Wis.: The subject opens up vast possibilities in our treatment of pathologic conditions affecting the cementum and adjacent structures, which if these slides are as they seem, will make it possible to do a great deal more than has ever been attempted before. It is another example of the wonderful versatility that cells display in adapting themselves to adverse conditions which sometimes leads to the production of cells essentially different in their ultimate character from the condition of the original cell. It certainly is new to me to know that cementum would spread itself over a bare surface of dentin, whether living or dead, as this seems to have done. I would like to be a little more certain as to just how far the fibers of the pulp in that tooth had extended themselves, and have no doubt Dr. Fletcher will be able to tell us whether this would be the kind of thing which one could expect regularly from cementum under pathologic conditions, or whether it is merely the outgrowth of pericementum quite similar perhaps to that which we find where we have hypertrophic conditions and polypoid gum tissue, or if it is only an unusual case.

DR. T. W. BROPHY, Chicago: The essayist has brought two very important subjects for consideration; first, the importance of observing the correct nomenclature; and second, the

wonderful reproductive powers of Nature. As to etiology, he has not entered into it. However, we have a local condition which is aggravated by lowered vitality of the patient. Anything which decreases the patient's vitality aggravates the disease in this locality the same as anywhere else. Therefore, proper treatment of patients from a systemic point of view should be considered. The work of Nature in depositing cement on this pericementum has been pointed out by the essayist in a manner that explains many of the conditions that we find associated with the teeth that have never been heretofore pointed out. If so, it has escaped my attention. What the essayist has presented here will be very interesting material for the men working along these lines of pathology and histology.

If the pathologic condition has advanced to a point that has left the tooth denuded of pericementum—if there has been considerable destruction of the surrounding bone—though the tooth may be an irritant to the tissues about, in such a case I think the tooth is gone. The essayist has not told us that Nature could reproduce the alveolar process. I have never heard anyone say that could be done. I do not believe it can be done. The greatest mistakes made in treating alveolitis have been in the failure to make diagnoses—to determine to what extent the parts are lost. If the only support of the tooth is gone, the tooth is lost, notwithstanding the fact that it may still be present and adherent to the membranes. It seems to me that where there is doubt, every practitioner should have a skiagraph made in order to be of the greatest service to his patient.

DR. EUGENE S. TALBOT, Chicago: This specimen certainly has brought out some beautiful things which will give us material for future study. As to the application of this condition to repair of the alveolar process, etc., I can hardly agree with Dr. Fletcher. There are two fixed conditions, foundation principles, we cannot get around; one, that the alveolar process is only a temporary structure to hold the teeth in place, and as the persons grow older, the process is absorbed; second, that the alveolar process is an end-organ. These two points must always be considered.

In the first place the patient must have been about 17 or 18 years of age. The chances are that such a condition would not be found in an individual who had obtained his growth. After the process has built itself around the tooth, it is simply waiting for an irritation to tear down the alveolar process. This is only a matter of time. If a man live long enough and keep his excretory organs in good condition, the alveolar process, without disease, will gradually absorb, and he will lose his teeth naturally. As I tried to show yesterday, and as Dr. Noyes brought out very beautifully in his pictures, when the matrix is destroyed—the lathing—the fibrous tissue within the alveolar process of the bone cannot possibly be restored under any circumstances. It is only partially restored in other bones of the body needed for the future support of the individual; so that his analogy, to my mind, will not hold good.

DR. FREDERICK NOYES, Chicago: There are two points clearly shown in the microscopic specimens that are particularly important. The first is that the broken surface across the end of this root shows first an absorption in the dentin, and then the laying of the cementum on it. In other words, the tissues came into physiologic contact with that dentin, first to absorb it, and then the absorbing cells were replaced by building cells, and the tissue was attached to it. I believe this is important. Second, it is evident that the pulp chamber has been largely obliterated by the formation of dentin by the remains of living pulp in the broken root, and in a hurried examination it is impossible in all places to find the junction between the cementum and that secondarily formed dentin; but I think it is a little misleading to assume that all of that tissue down in the pulp chamber is cementum. It is not. It is at least largely secondary dentin, and the cementum has overlapped on to that at the mouth, but I think it does not cover it entirely, though I would not be positive. In the treatment of these conditions, I believe that the tissues will first lie in contact with that denuded root for the purpose of absorption, and then the absorbing cells

will be replaced and forming cells produced. This is an exceedingly important factor.

DR. WILLIAM C. FISHER, New York: Does Dr. Fletcher mean to convey the idea from this specimen that he hopes to build by stimulation the cementum body, filling in such spaces as may have been produced by the waste product of alveolitis? And if so, to what point he thinks this can be controlled? In other words, is this a sort of artificial exostosis that he would stimulate?

DR. M. H. FLETCHER, Cincinnati: Dr. Noyes' description of what he saw in the specimens indicates the necessity of putting it properly before you. The only way this can be done is to have you study the specimens through the microscope. If Dr. Noyes had time to look through all the specimens, he would find a few that are perfect, where there is no breaking away of the cementum from the dentin in the process of mounting. The law of repair would make me believe, after all our scraping and polishing of roots, that Nature still puts the root surface in proper condition for reattachment of the bone.

In answer to Dr. Fisher, I think what the cementum does is to reproduce itself on the surface of the root, preparing a surface to which bone may be attached through the periosteum; to what extent I do not think we know. Theoretically, I should say it will cover any place on the root that is in normal contact with healthy periosteum, thus we can at least have what is left in a healthy condition.

In answering Dr. Talbot I would say that it is a well-known fact that an organ which is not continually and normally used is changed to a useful form or position or it disappears, but the alveolar process is constantly in use so long as the teeth are present. I have seen mouths of elderly persons in which there was comparatively no recession of the gums, except where disease from local irritants existed. I do not believe in the idea that the alveolar process is a temporary or transitory organ. It disappears if the teeth are removed, but it will remain so long as the teeth remain without local disease. The permanency of this bone is shown in animals where the teeth are of persistent growth. In the tusks of elephants, the incisors of rodents and all animals that have teeth of persistent growth, the alveolar process, the periosteum and the peri-dental membrane are in perfect health so long as life lasts. I have examined the mouths of many animals, and if I understand the doctor correctly, I do not agree with him that the alveolar process is transitory or weakened excepting by disease. If the gums and bone about the teeth are kept healthy I believe the alveolar process is as permanent as the turbinates or other thin bones connected with the air passages.

Regarding the cementum, it is a law of the construction and attachment of teeth of vertebrates that it exists on the root. I do not believe we as practitioners have attached the importance to his fact that it demands. Such men as John Hunter, Richard Owen and Purkinje are the ones who gave us the best knowledge we have of this tissue, but they were not dentists and could not realize the importance it is to us to-day in the treatment of the diseases of the tooth sockets. We should know more about this tissue and call it into use in our work from the present on. Nature utilizes cementum between plates of enamel for constructing perfect grinders in many animals. The cementum wearing away faster than enamel leaves indentations which form perfect millstones for grinding the rough foods which would not otherwise be digestible.

Nasal Chancres.—Chancres of the nostrils and nasal fossæ are rare. Contagion may be direct or indirect. The chancre may be erosive, hypertrophic or ulcerative; the latter form may be mistaken for eczema or impetigo. Rolleston reported an interesting case of nasal chancre which was mistaken for nasal diphtheria, and sent to a fever hospital. In this case the chancre was covered by a diphtheroid membranous deposit; the submaxillary and sternomastoid glands were enlarged and there was an eruption of secondary syphilis on the body which had escaped notice.—C. F. Marshall, in the *Practitioner*.

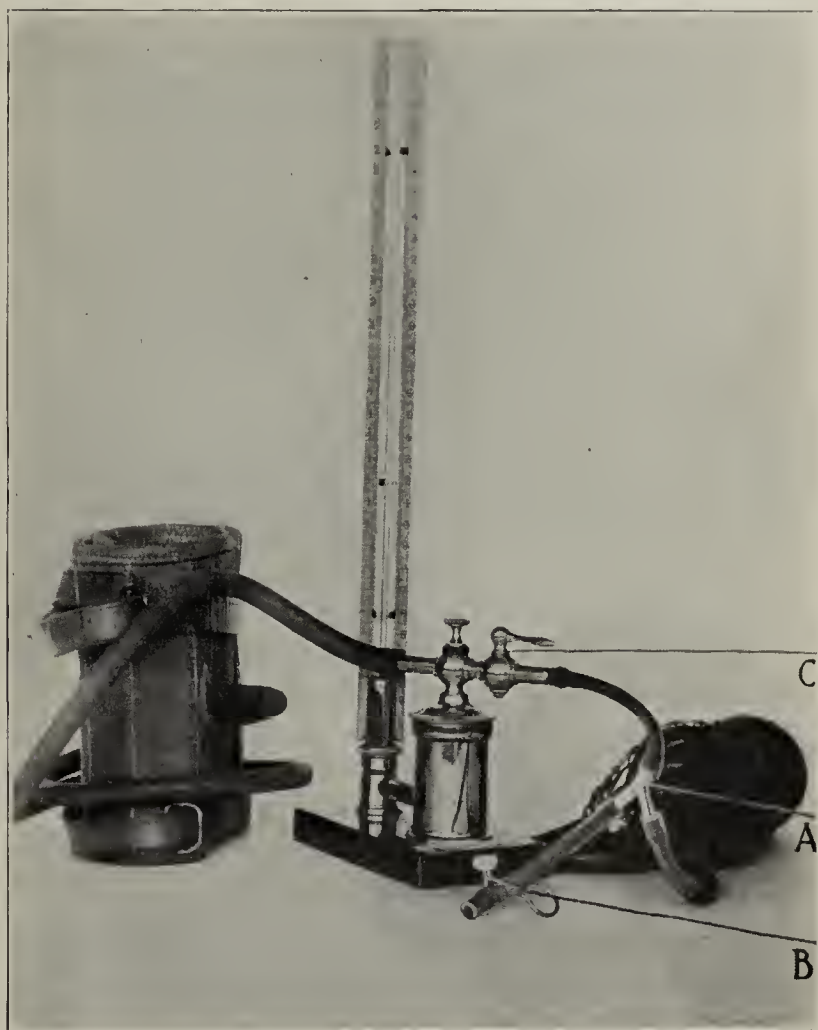
A SUGGESTION IN THE USE OF THE STANTON SPHYGMOMANOMETER

EDWARD H. GOODMAN, M.D.

PHILADELPHIA

Those who use the Stanton sphygmomanometer a great deal will have experienced the necessity of frequent renewals of the rubber bulb used to inflate the cuff. When employing the instrument, the bulb remains distended throughout the entire blood-pressure determination, and if the pressure be high, the tension is extremely great. It has been my experience, and this is probably the experience of many, to find that the bulb usually lasts but a short time and must be replaced frequently.

To overcome this protracted distention I have devised a simple arrangement whereby the air may be let out of the bulb without affecting the pressure in the cuff. As shown in the illustration, the rubber tube leading to the



Suggested improvement in blood-pressure apparatus to avoid continuous pressure on the rubber bulb while taking the reading. A Y tube, A, is inserted in the rubber tubing with a short rubber tube closed by a pinch-cock, B, on one leg of the Y. After the cuff is inflated the cock, C, is closed and the pinch-cock, B, opened, releasing the pressure on the bulb.

mercury chamber is cut and a Y-shaped tube (A) is interposed. To the third arm of the tube is attached a piece of rubber tubing furnished with a pinch-cock (B). When a blood-pressure reading is to be made the cuff is inflated in the usual way, the cock (C) turned and the pinch-cock (B) opened, allowing the air to escape from the bulb, but in no way affecting the pressure in the arm band.

I am aware that many practitioners prefer to use a Politzer bulb, or an ordinary atomizer bulb with the Stanton instrument, and when this is practiced there is no necessity for the Y-tube. In our work we employ the double bulb, and we have found that this slight but useful modification complicates in nowise the technic

and is of distinct advantage in preserving the usefulness of the former.

I am uncertain as to whether such a modification has been suggested before, but inquiry of the manufacturers failed to reveal any record of this. If such a modification has been described, however, it is worthy of wider use than is apparently the case at present.

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APPARATUS FOR PROCTOCLYSIS

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The new appliance for heating salt solution for proctoclysis shown in the accompanying illustration, consists of a galvanized iron box covered with asbestos and sole leather, 9 inches long, 6 inches wide, 6 inches at greatest height, being dome-shaped, one end closed, the other open, with an opening $\frac{3}{4}$ -inch in diameter at top of closed



New apparatus for proctoclysis

end, and a loop $\frac{3}{4}$ -inch in diameter at top of open end, allowing a $\frac{1}{2}$ -inch tube to be passed without trouble; an electric lamp socket is fixed on the inside of the closed end and fitted with a 4-candle-power lamp, 12 feet of silk-covered copper wire with plug for attachment to electric light fixture, attached to lamp through the closed end.

The advantages of the appliance are the following: It is simple, efficient, and durable. It will not get out of order, keeps a constant temperature and will not burn the patient, or soil or moisten the linen. If a 16-candle-power lamp is used, the bed will be warmed also when the apparatus is used for shock. The patient cannot be injured in changing position or by lying on the appliance. It reduces the labor and attention required of the nurse. The appliance slides on the terminal portion of tube, there being no fixed segment; therefore the reservoir can be placed any distance from patient without removing end portion of tube, which should be 16 inches in the bowel.

NEW REFLEX SIGNS IN MENINGITIS DIAGNOSIS

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Brudzinski's "new sign" in meningitis is probably one of the best signs in the diagnosis of this disease, although it does not differentiate between the various forms. It consists of reflex actions manifested in what are called the neck-sign and the leg-sign. It comprises two reflex phenomena, the identical reflex (*réflexe identique*) and the contralateral reflex (*réflexe contralatérale*).

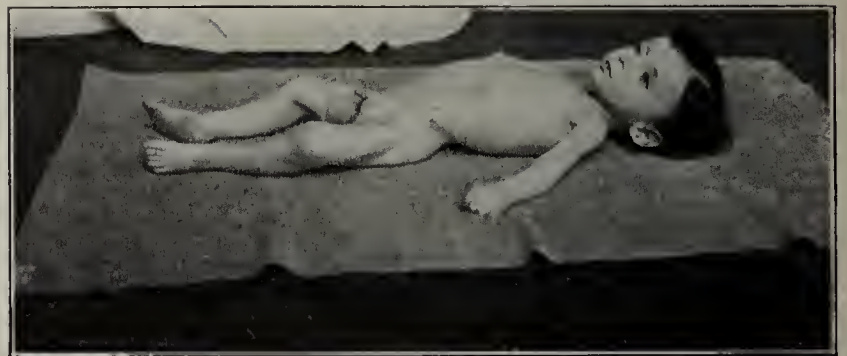


Fig. 1.—Patient with septic meningitis, subsequently fatal; relaxed; comatose.

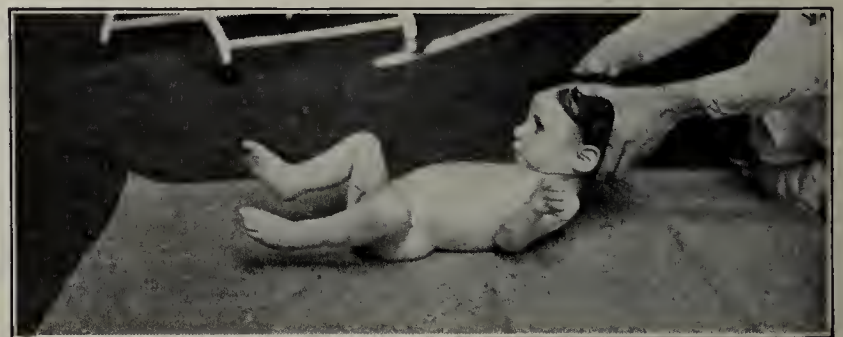


Fig. 2.



Fig. 3.

Figs. 2 and 3.—Method of eliciting the identical reflex or neck-sign, by flexing head on chest.

The identical reflex is elicited by forcibly flexing the head on the chest, when the arms and legs regularly assume the positions shown in Figures 2 and 3.

The contralateral reflex is produced by passive flexion of one leg, which causes the fellow limb to draw up and remain in the position shown in Figure 4.

Of the two signs the neck-sign is the more constant and is really a refinement of the ordinary "stiff-neck," "rigidity," etc., mentioned in the descriptions of the physical signs in meningitis.

Brudzinski¹ in forty-two cases of meningitis, found the neck-signs (*réflexe identique*) positive in 97 per

1. Brudzinski: Arch. de méd. d' enf., 1909, xii, 745.

cent.; the leg-sign (*réflexe contralatérale*) in 66 per cent.; Kernig's sign in 57 per cent, and the Babinski sign in 50 per cent.

Morse² examined 400 children, "well, or ill with diseases other than meningitis," and his conclusions are that "neither the neck-signs nor the contralateral reflex are present in well children or in those ill with diseases



Fig. 4.—Producing contralateral reflex or leg-sign by passive flexion of one leg; causing a reflex flexion of the other leg.

other than diseases of the nervous system; and that they are very seldom met in diseases of the nervous system, outside of meningitis." "Their presence is strong evidence in favor of meningitis: their absence does not rule out meningitis."

57 East Seventy-Ninth Street.

AN APPARATUS FOR THE PREPARATION OF BACTERIAL SUSPENSIONS *

CLOUGH TURRILL BURNETT, M.D.
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Anyone who has prepared autogenous vaccines has no doubt found the shaking up of the suspension by hand,



as recommended by Wright, a tedious process. There are several mechanical agitators for the emulsification of large quantities of fluid, but I have been unable to find anything well adapted to the preparation of bacterial suspensions as used in vaccine work. In several

instances mechanics have made on special order devices for this purpose, but these have been produced at a considerable expense. The device described was made under the direction of Professor Hunter of the College of Engineering, and is reported because of its slight expense and its simplicity.

A second-hand sewing-machine was bought for fifty cents. Much of the machinery was removed, being unnecessary, leaving the wheel and the needle-bar. On the top of the needle-bar was attached a bronze cylinder $\frac{7}{8}$ by $5\frac{1}{2}$ in. as shown in the illustration at A. In this cylinder is placed the sealed glass capsule containing the bacteria in salt solution. The capsule is protected by cotton and held down by a rubber stopper. As the needle-bar oscillates rapidly up and down it carries with it the cylinder and capsule contained in the cylinder. This rapid vertical motion will very quickly break up any clump of germs, producing a uniform suspension in five to ten minutes. This agitator may be propelled by water or by an electric motor. I obtained a water motor for one dollar and fifty cents which furnishes as great a speed as is necessary. The work required on the machine would not cost two dollars, making the entire cost with the motor about four dollars.

THE TREATMENT OF PUERPERAL ECLAMPSIA

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ST. PAUL, MINN.

Of all the diseases or pathologic conditions confronting the medical profession, perhaps none has received so much attention as puerperal eclampsia. We learn from early literature that the most competent investigators of all ages have searched for the cause, and equally competent therapeutists have endeavored to apply successful treatment. While these labors have resulted in a measure of success, it must be admitted that even in this enlightened age of medical research we have been unable to determine the exact etiology; and the fact that the most recent statistics still estimate the maternal mortality at from 25 to 35 per cent., and the fetal at 40 to 60 per cent., would indicate that the treatment has been as unsatisfactory as the attempt to find out the cause.

Pathologists are almost unanimous in their belief that the convulsions and concurrent symptoms of puerperal eclampsia are the result of irritation of the liver and kidney cells, and of the cerebral centers, by toxins circulating in and distributed by the blood-current. Taking this for granted, it would seem that treatment based on such a theory, having for its purpose rapid elimination of a part of the toxins, and the neutralization, by dilution or otherwise, of those which remain, would more nearly meet the indications than the slow and uncertain methods heretofore employed.

COMBINED VENESECTION AND INFUSION

With the hope of accomplishing this purpose I have combined the very oldest method, that of venesection, with the comparatively new intravenous infusion of normal salt solution, as follows:

Technic.—Any prominent superficial vein, preferably the median basilic on the anterior surface of the elbow, is selected. Constriction is made above by applying a bandage just tight enough to cause congestion sufficient to make the vein prominent. The parts are carefully cleansed and under local or general anesthesia an incision from 1 to $1\frac{1}{2}$ inches

2. Morse, John Lovett: Arch. Pediat., xxvii, 561.

* From the Laboratory of Bacteriology, University of Colorado.

in length is made over the long axis of the vein, which is exposed by carefully dissecting it loose from the contiguous tissue. A double ligature of No. 1 or single 0 catgut is then carried under the vein by an aneurysm needle, tissue forceps or other suitable instrument (Fig. 1, *a*) the loop divided (Fig. 1, *b*) and the two ligatures tied around the vein with a single knot at either end of the incision, from $\frac{1}{2}$ to $\frac{3}{4}$ inches apart (Fig. 2, *a, a*). The external surface of the vein is then grasped with a small rat-toothed tissue forceps midway between the two ligatures (Fig. 2, *b*) and divided at this point (Fig. 2, *c*) transversely upward (or downward as desired) about half-way through its circumference. The end of a thin-walled glass cannula, with the largest diameter that will be admitted, is then inserted downward into the distal end of the opening in the vein (Fig. 3, *a*); traction is then

the tubes are carefully withdrawn while the assistant securely tightens the knot, obliterating the vein. The skin wound may be closed by any suture desired.

In emergencies, a fountain syringe, with the glass tube of an ordinary medicine dropper, or in the absence of the latter the cannula from a small oil-can (such as is found with every sewing-machine, automobile or other machinery), may be used to convey the salt solution into the vein. If catgut is not at hand spool linen or other thread will answer for ligature. The salt solution is prepared by adding a heaping teaspoonful of common table-salt to one quart of water. The blood is allowed to escape from the vein by simply loosening the distal ligature as above described; the disadvantage being that without the aid of the cannula the blood obscures the field of operation,

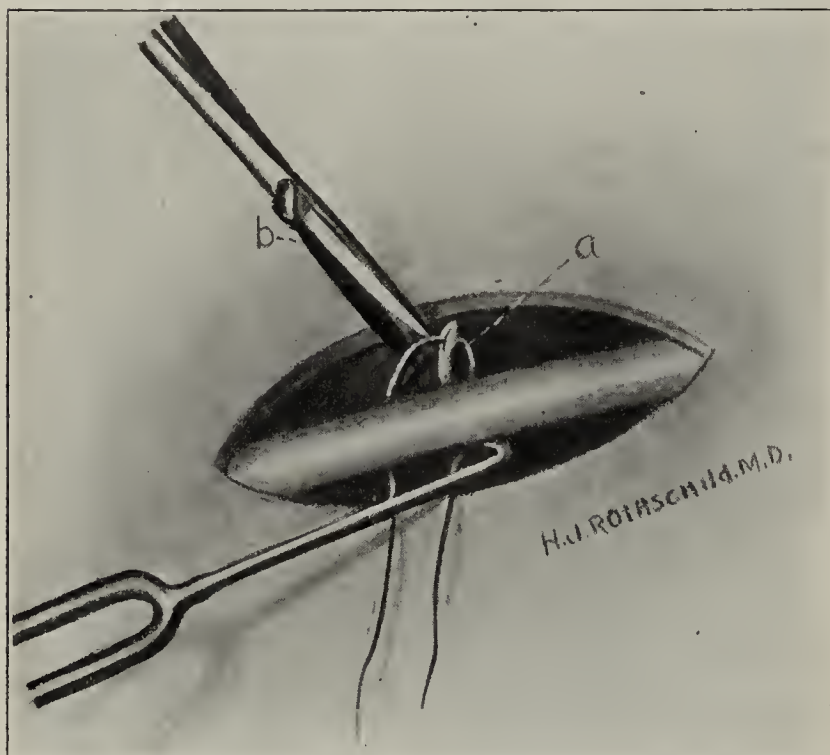


Fig. 1.—Dissection of vein and preparation for venesection; (*a*), ligature and carrier; (*b*), division of loop, forming two ligatures.



Fig. 2.—Vein with ligatures tied at *a*, $\frac{3}{4}$ inch apart; at *b*, rat-tooth forceps holding vein; at *c*, diagonal partial section of vein.

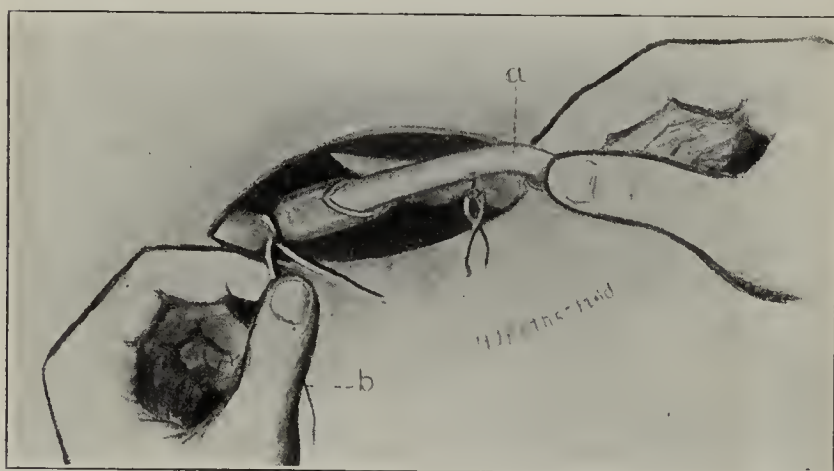


Fig. 3.—Insertion of glass tube in distal portion of cut vein at *a*; at *b*, loosening ligature to permit of insertion of tube.

made on one end of the ligature (Fig. 3, *b*), when the single knot readily loosens, allowing the cannula to pass through the loop (Fig. 4, *a*); the ligature is again tied, this time around the vein containing the end of the cannula (Fig. 4, *b*) (it is important that the lumen of the cannula is not too small, otherwise the blood will coagulate and refuse to flow); the constriction is then removed and another cannula which may be of smaller diameter, attached to a rubber tube coming from a receptacle containing a normal salt solution, is inserted (with the solution slowly escaping from the tube) upward into the other (proximal) end of the opening in the vein (Fig. 4, *c*) in exactly the same manner in which the first tube was introduced. When the desired amount of blood has escaped and a sufficient quantity of salt solution introduced

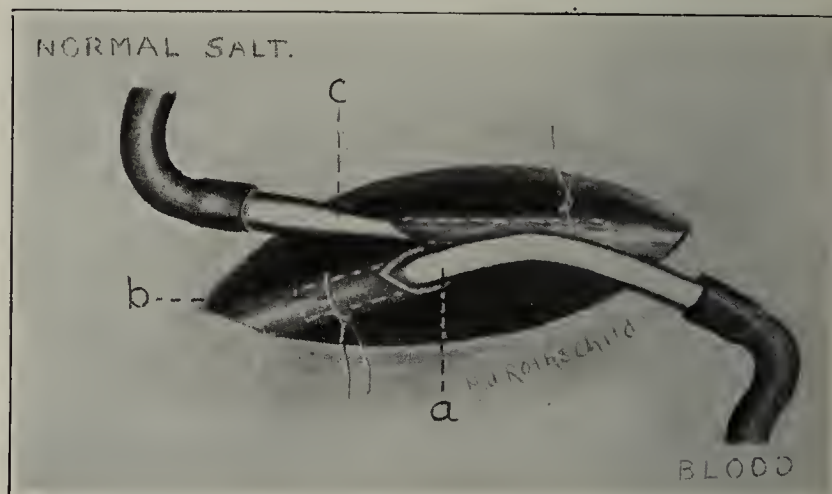


Fig. 4.—Tube (*a*) in distal portion of cut vein, for escape of blood, held by ligature (*b*); *c*, tube in proximal end of vein conveying saline solution.

and it cannot be accurately measured. When the condition of the patient warrants, it is advisable to allow from 10 to 15 ounces of blood to escape before the introduction of salt solution is begun. The amount of blood withdrawn in my cases ranged from 15 to 32 ounces; the quantity of salt solution introduced varied from 1 to 2 quarts; average, about 40 ounces.

Nothing new is claimed for this operation, other than the combination of the two methods, viz, the withdrawing of the blood and introduction of salt solution through the same opening at the same time, thus literally washing out the vascular system. It seems reasonable to assume that by the withdrawal of a portion of the

surcharged blood the system is relieved of a considerable part of the toxins, and by dilution with salt solution the poison in the remaining blood is rendered at least temporarily less irritating.

I have used this treatment in ten cases, seven puerperal, two of convulsions in chronic nephritis and one of subacute nephritis, with the result that in each case the convulsions ceased at once and in no case did they reappear. The following will serve as examples:

CASE 1.—Mrs. M., aged 23, primipara, weight about 120 pounds, had a perfectly normal labor of about 4 hours' duration; 1 hour after the child was born the nurse noticed a slight spasm of the muscles of the face; this was followed in a few minutes by a severe convulsion lasting about 2 minutes; this was again followed by another in about 10 minutes; the convulsions increased in severity, becoming more prolonged and appeared at shorter intervals until I saw her about 1½ hours later, when she was in a tonic spasm. She was given ¼ gr. morphin hypodermatically and taken to Bethesda Hospital 3 blocks away and immediately placed on the operating table; by this time the pulse was 150 and very weak. The convulsions were so severe that it was almost impossible to hold the patient on the table until chloroform could be administered. The median basilic vein was opened and 12 ounces of blood withdrawn, when the introduction of salt solution was begun and 10 ounces more of blood allowed to escape. The patient revived from the anesthetic in about 30 minutes, and except for a slight twitching of the facial muscles there was no further signs of convulsions. She left the hospital on the tenth day in as good condition as would be expected to follow an uncomplicated confinement.

CASE 2.—Mrs. S., aged 26, primipara, weight 130 pounds, a patient of Dr. A. W. Miller, was sent to my office with a note that she was 8 months pregnant, very anemic, with feet and legs swollen, large quantities of albumin in the urine, etc. On examination the above was confirmed and in addition a large number of granular, hyaline and epithelial casts were found. The patient was sent to the home of friends with instructions to keep quiet in bed, confine herself to a milk diet, etc. At 3 o'clock the following morning labor began. She was sent to St. Luke's Hospital, where a healthy child was born about 5 hours later after an easy labor, an intern attending. About 5 hours after the delivery she was seized suddenly, without warning, with a terrific convulsion lasting about 6 minutes. I arrived at the hospital about 1 hour after the first attack; during this time the patient had had about five or six convulsions, and appeared absolutely lifeless during the intervals; the pulse was very rapid and almost imperceptible at the wrist. She was taken to the operating room and given chloroform enough to control the convulsion, the median basilic vein was opened, and on account of her serious condition the cannula conveying the salt solution was inserted first and the infusion begun before any blood was allowed to escape. Then about 28 ounces of blood was allowed to flow away without any attempt to insert the larger cannula; about 1½ quarts of salt solution was given; in 10 minutes the pulse was very much improved, being slower and of better volume. The patient was returned to her room, where she regained consciousness in about 3 hours, with no further sign of convulsions. She left the hospital at the end of 2 weeks, and 2 weeks later left for her home in South Dakota in as good health as before the confinement.

CASE 3.—Mrs. D., aged 22, weight about 120 pounds, primipara, 7 months pregnant, had been in good health up to Dec. 3, 1909, when a dull headache, which had been present for a week, suddenly developed into an agonizing pain, with blurred vision, intense restlessness, etc. Dr. R. J. Brady of Hastings was called and found the urine almost solid with albumin. He ordered hot packs, saline cathartics, rest, milk diet, etc., which apparently gave slight relief until December 9 at 3 a. m., when he was again called and found the patient in a severe convulsion, it being the fourth she had had in an hour. She was entirely blind, very restless and suffered intensely from headache. She was given ¼ gr. morphin, which was

repeated in an hour with practically no relief. As the convulsions increased in severity and her general condition became alarming she was brought to the city by train and taken to St. Joseph's Hospital, where I saw her with Dr. Brady about 3 p. m. She had had about fifty convulsions up to this time and continued to have them every few minutes. She was irrational and intensely restless during the intervals. The whole body was badly swollen, the face almost beyond recognition; pulse was 140 and weak; no sign of fetal life could be detected, but on account of an urgent request from the husband that every effort be made to save the life of the child we abandoned our first intention, that of rapid dilatation or vaginal Cesarean section, and under chloroform anesthesia opened the basilic vein, inserted a cannula, through which about 15 ounces of blood was allowed to escape; another cannula was then inserted as above described and 2 quarts of salt solution introduced; after the infusion of salt solution was begun 17 ounces more of blood was withdrawn, making 32 ounces in all. The patient was returned to her room, where 4 hours later she was semi-conscious and was able to count fingers 2 feet away. The next morning she was perfectly rational and able to recognize her husband at the bedside. She improved steadily, with no further sign of convulsions and left the hospital on the tenth day, remaining in good condition until one month later, when she returned and gave birth to a dead child, which, from its appearance, had been dead for about one month.

No other treatment was employed in these cases except a dose of salts every morning, and a hot vapor bath once daily for a week as a matter of precaution.

The same treatment was employed in the other seven cases, varying only in the amount of blood withdrawn and the quantity of salt solution introduced. In this we were always guided by the condition of the pulse, having an assistant watch it very carefully, while the blood was escaping and, at the first sign of weakness, the infusion of salt solution was begun, with an invariable improvement within a few minutes. It was interesting to note that in each case within 30 seconds from the time that the salt solution was allowed to enter the vein there was a decided change in the blood to a lighter color, indicating dilution.

While I confidently believe this treatment, when properly applied, to be the most successful of any yet employed, it is not intended that it should take the place of, or be used exclusive of all other methods; in many cases, perhaps the majority, in which convulsions appear after seven months, and positively in all cases after eight months, in which other means do not relieve promptly, vaginal Cesarean section, manual or instrumental dilatation, with rapid delivery, should be practiced. I am of the opinion, however, that if the venesection-infusion method is employed first, Nature, with a little assistance in the way of hot packs, hydragogue cathartics, milk diet, rest, etc., will, in most cases, do the rest. At any rate no harm will result, and unless an unnecessary amount of blood is withdrawn the patient will be in better condition to withstand the shock of the more radical procedure, should that become necessary.

In the foregoing an attempt has been made to present a treatment based on rational principles, the advantages of which may possibly be emphasized by a brief comparison with some of the other methods.

As above stated, in cases in which rapid dilatation or vaginal Cesarean section is indicated, i. e., if the woman is at that period of gestation when under more normal conditions the child would be expected to survive, the treatment is not a substitute but an adjunct. Thus, if for any reason, as lack of an assistant or the necessary instruments, etc., delivery must be delayed, this treatment can be employed, not alone with the hope of bene-

fit during the temporary delay, but with reasonable assurance that the patient will, as the result of its use, be the better able to undergo the graver operation. Again, it may be done by an assistant at the same time that delivery is being made, and by thus ridding the system of toxins hasten the convalescence and obviate the danger of a continuance of the convulsions after delivery.

Veratrum viride, without doubt the most reliable of all remedies in the so-called expectant treatment, is supposed to act by powerfully depressing the circulation, and thereby bleeding the woman into her own vessels; it is also supposed to reduce the spasm of the renal vessels, causing an increased flow of urine and encouraging perspiration by relieving spasm of the capillaries.

If this theory is correct, the effects are, to an extent, exactly what we hope to obtain by the venesection-infusion method, with the difference that by the latter, instead of the patient being bled into her own vessels and retaining the cause of the trouble within the system, the poisoned blood is withdrawn and replaced with salt solution, thereby promoting diuresis, diaphoresis, etc., and what is most important, in many of these cases, stimulation of the heart and vasomotor centers, which is directly the opposite to the ultimate effect of veratrum viride. It is also worthy of note that while veratrum viride is supposed to control the convulsion by depressing the circulation, the venesection-infusion treatment, although temporarily reducing arterial pressure, finally stimulates the circulation and raises blood-pressure; yet, as demonstrated by my cases, the convulsions cease.

Hot baths, for the purpose of encouraging perspiration, used as a preventive before the convulsions appear, and to guard against recurrence after they have ceased, are unquestionably a valuable aid to other means, but for direct relief of the convulsions they are obviously too slow. It may even be seriously questioned whether by rapidly drawing large quantities of liquid from the blood by a process approaching filtration, an abnormal proportion of the more insoluble products (possibly toxins) are not left behind; thus instead of the toxins being eliminated they become more concentrated, consequently more irritating. The indications for, and the effect of, hydragogue cathartics are practically the same as those of hot baths and these cathartics can be advantageously used at the same time.

Considering the cause, as we understand it to-day, morphin is theoretically contra-indicated in all cases of puerperal eclampsia, for the reason that it inhibits both secretion and excretion, thus locking up the toxins in the system, and when used in doses large enough to control the convulsions undoubtedly endangers the life of both mother and child by prolonging the post-eclamptic coma. In emergencies, when other means are not at hand, its use is justifiable.

Chloroform, the most generally useful of all means at our disposal for the treatment of puerperal eclampsia, should be used to control the convulsions while waiting for the less active remedies to take effect, and for anesthesia when the more radical means are employed; but as recent investigations have shown that its prolonged use causes acute degeneration of the liver and kidney cells, it is advisable, on account of the already crippled condition of these organs, to substitute ether when it is necessary to continue the administration for a considerable time.

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THE SITUATION AS REGARDS SALVARSAN (606)

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CHICAGO

Indications at present are very strong that we are on the verge of a period of indiscriminate and reckless use of Ehrlich's new remedy, 606, or salvarsan, as it is known commercially, that will result in disappointment in that valuable remedy and—what is more important—in damage to many syphilitic patients, chiefly, let us hope, from neglect of established measures of treatment. Indeed, it will be very fortunate if we do not have another therapeutic fiasco, like that following the announcement of Koch's tuberculin, in which a valuable remedy failed to come up to first expectations, and thereby caused disappointment from which it did not recover for ten years. For in the excitement over 606 we are apparently remembering only that it was introduced to cure syphilis, and are therefore assuming that it will cure it, and are not taking heed of the fact that experience already is showing that it is not doing it. Undoubtedly the basis of the sensational interest in 606—the sole basis in the popular, if not in the professional, mind—is the belief that the new remedy is a cure for syphilis; that it will completely destroy the infection and leave the patient free from the disease; that the person who gets syphilis will be cured “at one shot”—to adopt an expression concerning 606 now in the vernacular; and that the disease will be robbed of its seriousness. Take, for example, the following statement¹—not from the daily press, but from one of the soberest of scientific journals: “One of the greatest scourges of humanity—perhaps the most insidious and cruel of all, since it so often places its victims beyond the pale of human sympathy, to be loathed rather than pitied—is on the point of being eradicated.” The patient is to be cured of syphilis by one injection, or mayhap two or three, and the treatment is so efficient that syphilis is possibly “on the point of being eradicated.”

And this conception of the possibilities of the agent are in accordance with the purpose for which 606 was introduced. To cure syphilis was Ehrlich's noble aim. The new drug was to be a *therapia sterilisans magna*—to destroy by one massive dose of a “parasitotropic” remedy all of the infecting organisms in a syphilitic patient.

In the light of even the brief present experience with 606, it may be said with confidence that the agent has failed in this magnificent aim. It is not a *therapia sterilisans magna*; it does not destroy the infection; and it does not rid the syphilitic patient of his syphilis. This is not saying that the drug is not a useful remedy; there seems every reason to believe that it is a valuable addition to our means of combating syphilis.

Ehrlich's hopes for 606 were based on animal experiments. Ehrlich recognized, as do others, that experiments on syphilized animals with the agent were not conclusive for man, and he turned over the remedy to clinicians for trial in human syphilis. And it is with the results in human syphilis that we have to do.

The belief that salvarsan cures syphilis in man depends on the following considerations:

1. Schweitzer, H.: Ehrlich's Chemotherapy, Science, Dec. 9, 1910, p. 809.

1. The destruction of the spirochetes.
2. The reversal of the Wassermann reaction.
3. The removal of the clinical manifestations of syphilis.

The evidence is becoming increasingly strong that the agent does not permanently and completely cause any of these results.

It has a very striking effect on spirochetes, but the sudden disappearance of spirochetes from lesions is no evidence of an overwhelming attack upon the disease. The drug may cause the disappearance of spirochetes from a chancre within twenty-four hours and greatly reduce the number, or cause their disappearance from deeper lesions—but mercury may do the same thing. A little calomel powder dusted on a chancre will within twenty-four hours make it exceedingly difficult or impossible to demonstrate spirochetes; and as soon as a syphilitic patient is brought thoroughly under the influence of mercury the difficulty of demonstrating spirochetes is enormously increased. And yet under such conditions, who attaches any weight to these findings as an evidence of the cure of syphilis? If one were to take any warning from the accumulated experience of generations in syphilis, it would lead him to expect that the apparent disappearance of the spirochetes was but a lull in the invasion and that they would return. And that is exactly what is coming to light. Disappearing spirochetes are returning, it may be, even at the site of the original lesion, where their disappearance has been regarded as of such significant importance.

The Wassermann reaction is very much more reliable evidence of the effect on the disease, for its findings cover the patient's whole organism. Present experience indicates that a reversal to negative occurs in a minor proportion of cases; but if it were made negative in all cases, only time—and much more time than the few weeks after treatment of most of the reports—would show that this negative reaction meant cure. The Wassermann reaction can be made negative by vigorous mercurial treatment—not so readily, however, as by 606—but no conservative syphilographer regards this as evidence of cure. On the contrary, experience with mercury shows that a return to positive is to be expected, and that treatment must be persisted in after the manner that we have learned from clinical experience. As a matter of fact, we do not yet know how to interpret the reversal of the Wassermann reaction in its bearing on treatment. The same return to positive of cases which have become negative under salvarsan is occurring in the same way as after the use of mercury.

But, after all, the most important evidence as to the value of 606 is the effect on the clinical manifestations of syphilis; and here experience indicates great variability. These variations extend from cases which are "refractory" to the drug, and show no effect, to cases in which strikingly good results are seen. As a rule, there is in active early syphilis—the stage at which most would be expected from a remedy that cured—distinct and positive improvement. Sometimes the symptoms entirely disappear—as happens from mercury or even without treatment—but that, even in these cases, no cure is obtained, is shown by the definite tendency to recurrence that the later literature is revealing.

In fact, accumulating experience simply shows that the remedy has as a rule a distinctly beneficial effect on the lesions of syphilis, but not so positive or beneficial an effect as would give any ground for the hope that it will cure the disease by the radical destruction of the

invading spirochetes. How definite and constant these effects will be, or whether the action of the drug will be as reliable as that of mercury, cannot with our present experience be determined. But it can at least—and unfortunately—be said from present experience that the effects on symptoms are such as to show that salvarsan falls short of cure of the disease.

How useful 606 will prove is another question. The burden of reports is that it shows marked effects in intractable and destructive lesions. In the usual cases of active early syphilis it is very much to be doubted if it is of more value than mercury. In late lesions—lesions of the tertiary period—particularly in those which have been intractable to other treatment, the most striking results have occurred. In the cases of active secondary syphilis of the ordinary types that I have seen treated with salvarsan the effects have certainly not been more rapid or better than would be expected from mercury—not, I believe, so good. In three or four cases with very extensive ulcerative lesions the effects have been remarkably good. Various syphilographers are calling attention to the fact that men are losing sight of the results obtained from mercury, and that the new agent does not show results to indicate any probability of its superseding or being superior to mercury in the treatment of syphilis; that, so far as we can judge from present experience, mercury must still be our reliance, but that as a reserve we have a valuable agent in 606.

Of the dangers of salvarsan we are least able to speak at present. We do not fully know them. The evidence is large that immediate risk of serious accidents from the remedy are small. But enough is known to show that dangers exist. There is good ground for the belief that a larger proportion of serious accidents are occurring than would be estimated from the present literature. And that serious accidents should occur is not surprising. Salvarsan is the lineal successor of atoxyl, soamin, and arsacetin. All of these were introduced as safe arsenical preparations—toxyl, so safe that its atoxic character was "blown" as it were in its name—and all have a train of arsenical fatalities and optic atrophies in the wake of their use in therapeutic doses. Salvarsan has about 35 per cent. arsenic content; it is administered in an average dose of half a gram—8 grains—that is, a dose of 2.8 grains of arsenic. There is no doubt that such a dose of arsenic has in it immediate possibilities of optic atrophies and other dangers. The dangers of its use, however, are as nothing in the face of a severe syphilitic crisis, or if the remedy were able to cure syphilis.

There is great diversity of opinion about technic of efficient administration, with much striving for a new technic that will be more effective. Injections in neutral emulsion, in alkaline solution, or mixed with oil, into the subcutaneous tissue, into the muscles, or into the veins, or combinations of these various methods of administration are succeeding each other. The hope of a *therapia sterilisans magna*—the complete destruction of the spirochetes of syphilis in an infected patient—is practically abandoned, and two or three or more injections are being used. And, finally, the recommendation of the use of salvarsan and then mercury, as heretofore, is the last evidence that the new agent is not equal to its proposed mission.

It cannot be emphasized too strongly that the situation with 606 is still experimental—and more experimental

than it was thought to be when the drug was introduced. Its position is not established; the degree of its usefulness—even of its immediate usefulness on the active manifestations of the disease—is not established. The amount of beneficial effect it will have on the after-history of syphilis is, of course, with our present brief experience with 606, purely theoretical—with grounds existing for different theories. Our present experience shows that it does not cure syphilis and that we are not justified in holding out to patients any hope of cure by it, but that it is likely to prove a useful remedy in syphilis, with mercury, however, as before, our chief dependence.

The foregoing statement can be abundantly substantiated from the recent literature. Particular attention in this connection may be called to the following references:

Dr. W. Fischer, assistant to Professor Buschke, who writes for Buschke's Dermatological Clinic in the Rudolf Virchow Krankenhaus, Berlin—the very center of the clinical exploitation of "606:" *Medizinische Klinik*, Nov. 6, 1910, p. 1778.

Professor E. Lesser and Sanitätsrath Dr. O. Rosenthal, Berlin: *Deutsche medizinische Wochenschrift*, Nov. 17, 1910, pp. 2175 and 2176.

Professor Gaucher, successor to Fournier in St. Louis Hospital, Paris: *Paris Letter*, THE JOURNAL A. M. A., Dec. 10, 1910, p. 2074.

Professor E. Finger, Vienna: *Wiener klinische Wochenschrift*, Nov. 24, 1910, p. 1667.

72 Madison Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

L-SUPRARENIN SYNTHETIC.—L-suprarenin synthetic is epinephrine produced synthetically according to the method of Stolz & Flaecher (*Ztschr. f. physiol. Chem.*, 58, p. 189).

L-suprarenin synthetic is a white odorless powder nearly insoluble in water, alcohol and ether. It melts at 211°-212°. It has the power of rotating polarized light to the left:—

$$[\alpha]_{\text{D}}^{19.6} = -51.4^{\circ}$$

L-suprarenin synthetic has the chemical and physical properties and physiologic effect of natural epinephrine obtained from suprarenal glands.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.) German patent No. 222,451.

L-SUPRARENIN SYNTHETIC BITARTRATE.—L-suprarenin synthetic bitartrate is the acid tartrate of l-suprarenin synthetic.

It is a white odorless powder readily soluble in water yielding an acid solution. It melts at 149° and rotates polarized light to the left.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.) German patent No. 222,451.

PHARMACEUTICAL PREPARATIONS ACCEPTED FOR N. N. R.

The following dosage forms of accepted proprietary articles have been accepted for N. N. R.:

Protan and Opium Tablets, No. 1.—Each tablet contains opium 0.005 Gm. (1/12 grain) and protan 0.162 Gm. (2½ grains).

Protan and Opium Tablets, No. 2.—Each tablet contains opium 0.03 Gm. (½ grain) and protan 0.5 Gm. (7½ grains).

Supracapsulin Inhalent.—A solution 1:1,000 of supracapsulin in an aromatized neutral oil, containing approximately 2.5 per cent. of chloral and 10 per cent. of alcohol.

Therapeutics

NOT TUBERCULOSIS

History.—A young man, aged 28, came on Oct. 7, 1910, to ascertain how long he could live. He had been told that he had tuberculosis of the lungs, and had been treated three years for that disease. He had not worked for the last seventeen weeks, and was, in his opinion, rapidly growing worse. He had not a real cough, but he hawked and raised a great deal of yellowish sputum which was very frequently streaked with blood; in fact, hardly a day passed that he did not raise some blood. He had considerable gastric indigestion, some nausea, but no vomiting, quite a little gastric flatulence, but no pyrosis. A year and a half ago he had trouble with diarrhea, having movements of the bowels from ten to twelve times a day, but for the last six months the bowels had moved only two or three times a day, and not loose. The previous history shows that the patient had never really coughed, and that he had been subject to nose-bleed, sometimes as often as five or six times a week; it might not occur for several weeks, and then he would again have a period of it. He had no recognizable palpitation; no dyspnea on exertion; slept well; had had no swelling of the feet and legs. He had never had any urinary trouble, except a gonorrhea twelve years ago, and had no syphilitic history. He did smoke a great deal, but not so much during the last year. He also chewed tobacco. He had never used much alcohol. The only severe illness he ever had was pneumonia when 12 years of age. The patient's father died of kidney trouble; his mother was alive and well. One sister died of tuberculosis three years ago. The patient did not live in the same house as this sister. Three sisters and two brothers were alive and well.

Examination.—Last year at this time the patient weighed 127 pounds; he now weighed 136, and the weight had remained stationary for the last three months. His tongue was slightly coated and moist. The pulse was 78, occasionally intermittent. Temperature was 98 at 2 p. m. The heart was not enlarged, but showed an incomplete contraction of the ventricles every sixth to tenth beat, which accounted for the intermittency at the wrist. There were no murmurs. The lungs were absolutely normal. The abdomen was normal, with perhaps slight epigastric tenderness. There was an enlarged thyroid gland. The pharynx showed chronic catarrh, as did the naso-pharynx. The lingual tonsil was enlarged, coated, and showed a number of dilated blood-vessels. The nostril which bled the most frequently, the left, showed a swollen mucous membrane, and the mucous membrane of the septum was unusually red. The urine and the sputum were negative.

Diagnosis.—Disturbed thyroid secretion caused the diarrhea and the tendency to bleeding. The large amount of tobacco caused the throat catarrh, lingual tonsil irritation, and probably the irregular action of his heart. There was no tuberculous trouble in this patient.

Treatment.—The patient was told to go to work; to stop tobacco; and given Seiler's tablet gargle, and a small dose of sodium iodid to satisfy the probable need of the thyroid to improve its activity.

℞	Gm. or c.c
Sodii iodidi	2| gr. xxxi
Aquæ menthæ piperitæ	100| or fl ʒiv

M. et Sig.: A teaspoonful, in water, three times a day, after meals.

October 21: The patient has been working throughout the two weeks since last seen; is feeling very much better; has no cough, and less expectoration; the appetite is good; the bowels constipated. The pulse is regular, and the heart has ceased its reduplicating beat. The throat looks very much better, and the patient has raised no blood since October 11; has not quite stopped his tobacco. The patient is told to cease his use of tobacco absolutely, and to continue the same medication.

November 4: The patient feels well; is not in the least tired after working all day, and is perfectly able to work longer, he says. He has entirely ceased his use of tobacco; raises but little sputum, and that is white instead of yellow, and without a drop of blood. The tongue is in perfect condition; the appetite is fine; the bowels act normally; the pulse is regular, and the heart is acting perfectly. The throat looks almost normal; the lingual tonsil is apparently normal, except for some enlarged blood-vessels; the weight is 137 pounds.

The patient is dismissed; told to stop all medication, except twice a day for a short time to use a tannic acid gargle.

R	Gm. or c.c.	
Acidi tannici	3	gr. xlvi
Glycerini	10	fl. 3iiss
Aquæ	ad 200	ad fl. 3vi

M. et Sig.: Use as a gargle, twice a day.

REMARKS

A patient could not have had active tuberculosis of three years' duration, with profuse expectoration, with blood, without loss of weight, fever, tubercle bacilli in the sputum, and very evident lung lesions.

No examination of a patient is complete without an examination of the throat, and if he is coughing and raising blood, the laryngoscope should be used to examine the lingual tonsil and larynx.

Excessive use of tobacco can cause the disturbance of the heart as noticed in this patient.

Disturbed thyroid secretion can cause digestive disturbances, mucous membrane congestions, and a tendency to bleeding as occurred in this patient.

A small dose of iodid will often stimulate a thyroid to normal activity, and an enlarged thyroid may become reduced in size under such a treatment. This patient's thyroid was undersecreting and not oversecreting.

GOOD SENSE IN PRESCRIBING

The following has been recently recommended as an internal treatment for posterior urethritis:

R	
Mass of copaiba	2 gr.
Oil of santal	2 m
Potassium bicarbonate	4 gr.
Extract of kava-kava	2 gr.
Atropin sulphate	1/250 gr.

M. et fac Pil. 1.

Sig.: One pill every two hours.

Further instruction is given that this treatment should be stopped after the urgency of urination has subsided, but there is no definite limit placed on the number of pills that shall be taken at the rate of every two hours.

In the first place, atropin sulphate is a potent drug. It is absolutely uncertain when each 1/250 will be absorbed from the sticky mass with which it is incorporated. It is therefore uncertain how much atropin will be in the patient at one time, even if each individual dose is small. Also, as the excretion of belladonna or atropin is very slow, taking certainly from ten to twenty hours, at least five doses, taken at two-hour intervals, would be in the patient at once, making 1/50 of a grain of atropin somewhere in him. Also, in this sort of a sticky mass several of the pills might dissolve

very slowly, and then all at once several might dissolve rapidly, depending on their chemical surroundings, and the patient might be poisoned. In other words, this method of administering atropin is absolutely inexcusable. If atropin action is desired, a soluble tablet of atropin sulphate, uncombined, may be given the patient by the mouth, in doses of 1/250 of a grain, or, better, 1/200 of a grain, and repeated every four to six hours, if deemed advisable, to be stopped as soon as symptoms of atropin action were evident, viz., a dry throat, flushed face, or dilated pupils.

Massa copaibæ, not official in the last Pharmacopeia, but official in the Pharmacopeia of 1890, is really a solidified copaiba. Its action is similar to the better preparation of "Copaiba," which is official in the Pharmacopeia of 1900, and is a thick liquid. Copaiba, oil of santal, and kava-kava belong to the same class of drugs, i. e., are all genito-urinary stimulants. In other words, theoretically, they should not be used in acute inflammations of this part of the body, but are valuable in subacute and chronic inflammations of the genito-urinary tract. They all interfere more or less with digestion, and may produce flatulence, pyrosis, and even nausea. They readily cause a coated tongue. The drug least likely to cause indigestion is the oil of santal; consequently, as these drugs act in the same way, the oil of santal should be preferred. Two grains of the mass of copaiba every two hours would soon cause gastro-intestinal disturbance, with no advantage to the patient over the oil of santal. Also, any drug, especially in pill or capsule form, should preferably be administered after meals, when it is least likely to cause stomach disturbance. Therefore, a genito-urinary stimulant administered in pill form every two hours is inadvisable.

As just stated, the oil of santal is the best genito-urinary stimulant, and there is no need for the others. There is nothing that oil of santal can do pharmacologically that the other two drugs can do better. There is nothing that oil of santal cannot do that the other two drugs can do pharmacologically.

The oil of santal in 2-minim doses, made into a solid pill, would require a considerable amount of dry excipient to absorb it. The oil of santal is best administered in flexible capsules, and it is better administered in larger doses, after meals, than in a small dose every two hours, when it is surely more or less irritant to the stomach.

Potassium bicarbonate is an alkaline diuretic. The dose of 4 grains, even every two hours, is very small. Such a dose would probably ordinarily not render the urine alkaline, as the dose for this purpose would be 2 gm., or 30 grains, three or four times in twenty-four hours. In amount to do any good, it must be administered in solution, and it tastes disagreeable. Potassium citrate is more agreeable to taste and will do as well. It may be administered as follows:

R	Gm. or c.c.	
Potassii citratis	40	3i
Aquæ gaultheriæ	200	or fl. 3v

M. et Sig.: 2 teaspoonfuls, in water, three, four, or five times a day, as deemed necessary.

There is no official extract of kava-kava. Kava-kava is a pepper (*Piper methysticum*) which grows in the South Sea Islands. It acts locally in the stomach and intestines as a pepper. It contains some resinous bodies which have been thought to have some action as a genito-urinary stimulant. Its action is certainly very much inferior to that of the oil of santal. As a drug it is not needed.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JANUARY 14, 1911

CANCER OF THE APPENDIX

In the early days of the surgical pathology of the appendix the occurrence of neoplasms of this organ was not often noted, but as the laboratories of hospitals and clinics became better organized and thorough gross and microscopic examination of all surgical specimens became a matter of routine, a histologic diagnosis of cancer in an appendix removed for supposedly simple appendicitis began to be somewhat less of a rarity. The literature of this subject also began to increase rapidly, and although there were but a few scattered cases reported before 1900, since that time medical journals have teemed with reports of single cases or small groups of cases. In 1908 McWilliams¹ was able to collect records of 105 cases, and since then a great number have been added, MacCarty² having reported one group of twenty-two cases among five thousand appendices removed by the Mayos. Statistics from large clinics, where great numbers of appendices are removed and thoroughly examined, have shown with remarkable uniformity that not far from 0.5 per cent. of all appendices removed for whatever cause show thickenings, nodules or tumor masses which exhibit a microscopic structure warranting the pathologist in returning a diagnosis of cancer.

In most cases this diagnosis reaches the surgeon as a surprise, the appendix having been removed for symptoms and findings which indicated nothing more than ordinary acute or chronic appendicitis; and at first such diagnoses occasioned much alarm and anxiety. The general experience, as exhibited by the literature, soon brought at least partial relief, for it was found that in spite of the positive diagnosis of cancer by the pathologist, the patients, when watched for several years, in but few instances gave evidence of recurrence or metastasis. To explain this unusual behavior of appendix carcinoma various explanations were suggested. Some authors have thought that because of the location of these cancers they soon cause symptoms of obstruction to the lumen of the appendix, leading to a diagnosis of appendicitis and removal at so early a stage in the devel-

opment of the growth that metastases and regional infiltration have not developed. The pathologists have pointed out that the structure of these epithelial growths is usually somewhat different from that of the ordinary malignant cancers of the gastro-intestinal tract, many being of a spheroidal-cell type approaching in character the rodent ulcer or basal-celled carcinoma of the skin, which is notorious for its slow growth and its failure to produce metastases.³ Other explanations have been offered, among them one based on the vestigial character of the appendix and the possibility that locally defective resistance might permit of a cancer growing here which could not obtain foothold in the normally developed structures elsewhere.⁴

Of late there has been a growing doubt as to whether, after all, these epithelial neoplasms in the appendix are true cancers, in spite of the typical invasion of the connective and muscular tissues by strands of columnar or spheroidal cells. Some of the reasons for skepticism are well put by Sitsen,⁵ who calls attention especially to the fact that in large autopsy material pathologists do not find carcinomas arising from the appendix except as the greatest of rarities, nor did they in the days before the appendix was removed by operation for inflammatory attacks. If one in every two hundred inflamed appendices were carcinomatous, as the surgical laboratory statistics intimate, then among the hundreds and thousands of chronically inflamed appendices observed at autopsy there should be not a few fatal cancers. Of 1,460 cases of cancer in the public hospital of Berlin, however, in but one did the disease definitely arise in the appendix, and Nothnagel found but one such case in 2,124 cancers. Furthermore, the fact that out of about one hundred instances in which a microscopic diagnosis of cancer of a resected appendix has been made, only one has been reported as terminating fatally, gives abundant grounds for questioning the diagnosis.

In view of all this doubt concerning an important practical subject, we note with particular interest a warm discussion concerning cancer of the appendix at the last annual meeting of the German Pathological Society.⁶ Winkler reported that he had found at autopsies no less than six appendices showing changes of the type usually diagnosed as carcinoma, yet in none of these cases was there evident regional infiltration or local or remote metastases. In the discussion which followed, participated in by some of the best-known pathologists in Germany, there developed much difference of opinion as to the exact status of these growths. It seemed to be generally agreed that they do not represent inflammatory hyperplasia of the endothelium of the lymph-channels, as some critics have suggested; but

3. See Warthin: Physician and Surgeon, December, 1906.

4. Horsley, J. Shelton: Carcinoma of the Bowel and of the Appendix in the Young, THE JOURNAL A. M. A., May 8, 1909, p. 1471.

5. Sitsen: Centralbl. f. Path., 1910, xxi, 871.

6. Verhandl. d. deutsch. path. Gesellsch., 1910, xiv, 167.

1. McWilliams: Am. Jour. Med. Sc., 1908, cxxxv, 822.

2. MacCarty, W. C.: Classification of Appendicitis, THE JOURNAL A. M. A., Aug. 6, 1910, p. 488.

as to whether they should be looked on as true carcinomas, or as "carcinoid tumors," or as epithelial malformations of either embryonal or inflammatory origin, there was no agreement. Perhaps a fair interpretation of the opinions expressed here and elsewhere would be somewhat as follows: True malignant epithelial growths do occasionally, but rarely, arise in the appendix, and their occurrence is probably favored by chronic inflammatory processes; these true cancers are usually of the typical columnar-celled type, and sometimes mucoid changes are present, but this latter or "colloid" form is less common than in cancer of the cecum. As a result of chronic appendicitis we also have a snaring off and displacement of epithelium, which may proliferate to some degree, forming atypical epithelial growths which are not true carcinomas, but which may resemble carcinoma closely, and into which they may also become transformed. Similar structures may also be produced by congenital malformation or displacement of the epithelial structures of the appendix, analogous to certain epithelial growths found elsewhere in the alimentary tract, and accounting for the supposed carcinomas which have been described in the appendices of young children. Finally, as a result of chronic infection, the endothelium of the lymph-channels of the appendix may proliferate in such a manner as to produce appearances strongly suggestive of cancer infiltration. The chief conclusion to be reached is that surgeons should appreciate, as well as the best pathologists do, the limits of our ability to decide positively from microscopic appearances alone the malignant or non-malignant character of each and every growth; and also that, especially in the appendix, we encounter not only true carcinomas, but also much more frequently epithelial proliferations which exhibit all the usual histologic criteria of malignancy without necessarily or commonly causing the clinical results usually associated with cancer.

PUBLIC HEALTH AND THE COURTS

The important decision of the Supreme Court of Minnesota which was cited in our last issue¹ is another indication of the gathering force of public opinion in matters of public health. The causes that sway public opinion and determine national character from age to age are often obscure, but their effects are nevertheless striking. The contrast between the Elizabethan Englishman and the Englishman of the time of Pope and Swift or of Lloyd George and Rudyard Kipling is one of the really important facts of history. The transformation in the national character of the German people which has occurred in the last hundred years is another and most remarkable instance of the change that may take place in the character of a great nation. Our knowledge of the underlying factors concerned in

such changes is still very imperfect, although Bagehot's characteristically shrewd speculations on the subject are well worth reading.

No competent observer can doubt that we in this country are passing through one of these periods of transformation of national character. National ideals are shifting and new forces are making themselves felt in politics, business, religion and medicine. The greater sensitiveness now displayed by public opinion about all matters relating to the public health is one of the many manifestations of the new spirit. It is perhaps in keeping with the qualities of the legal mind that the courts should not be among the first agencies of public opinion to reflect the view that is becoming dominant. At the same time, it is well for many reasons that they should not be the last. In any case, public opinion will not indefinitely tolerate legal decisions that are sharply out of harmony with the prevailing type of national judgment or modes of thought.

The Minnesota decision, which holds that a municipality becomes liable for negligence if it carelessly allows the water in its waterworks system to become polluted, so causing deaths from typhoid fever, is an especially significant illustration of the increasing responsiveness of the courts to the modern view of public health responsibilities. The matter is put squarely on the same footing as negligence in regard to care of streets and sidewalks. One part of the decision merits wide publicity: "It is obvious that a sound public policy holds a city to a high degree of faithfulness in providing an adequate supply of pure water. Nor does it appear why the citizens should be deprived of the stimulating effects of the fear of liability on the energy and care of its officials; nor why a city should be exempt from liability while a private corporation under the same circumstances should be held responsible for its conduct and made to contribute to the innocent persons it may have damaged."

It remains to be seen what effect this decision will have on the outcome of damage suits that have been started in Rutland, Rochester and other places where typhoid fever has been attributed to public water-supplies. One thing is sure, however, and that is that the best public opinion will no longer rest satisfied with an explanation of "accidental" or "unavoidable" for extensive water-borne typhoid epidemics. Someone's negligence is usually responsible for such a catastrophe, and in many cases it will be found possible to assign responsibility and to insist on punishment or reparation so far as that is possible. The Minnesota decision will be warmly welcomed by everyone interested in having the established conclusions of modern medical science recognized by progressive legal opinion and made part of the law of the land. The translation of technical knowledge into practical measures for improving conditions of life is an indispensable condition of real progress.

1. *Medicolegal Department*, p. 65.

DAIRY INSPECTION

The extensive use of milk in the raw state as a food by both adults and infants, the ease with which it is contaminated and its qualities as a culture medium for dangerous bacteria, render it important that the highest degree of purity be secured and maintained in its production and after-care. To this end there has been a constantly increasing activity on the part of health officers and sanitarians to improve the quality of the milk-supplies of cities and towns. Local milk commissions for securing milk of certified quality have been organized, and regular inspections of dairies instituted. We commented recently¹ on the practical side of clean milk production and its cost.

It is generally agreed that a bacteriologic examination furnishes the most accurate insight into the conditions which have prevailed during the production and handling, and that the bacterial content of the milk is the proper index of its purity or safety as an article of diet. Some authorities think that an ideal milk would contain no germ life, but such an ideal would doubtless be difficult of attainment. No way has been found of producing milk with less than a few hundred bacteria per cubic centimeter, since milk in the udder is not sterile; and under commercial conditions milk with a few thousand bacteria per cubic centimeter must perhaps be considered the limit of the attainable.

In the production of a pure or safe milk with a low bacterial content, care is necessary at four stages: in production, in transportation, in distribution, and, by no means least in importance, in the home after it is finally distributed. The first three may be controlled by suitable legislation, by inspection and laboratory examinations; the last must be improved by proper education of the consumer. Milk may be produced with care, yet become unwholesome through improper handling during transportation and distribution. If it is produced with too little care, or, as is frequently the case, with gross carelessness, subsequent attention cannot make good milk of it.

The chief attention should be concentrated on a cleanly and hygienic production; and therein the rôle of the inspector is most important. Much depends on the knowledge and judgment of the inspector. Unfortunately at present the inspection of dairies is carried on largely by persons not properly educated for the duties. Many delicate points have to be considered and decided, and their decision depends not only on intelligence and experience, but on a technical knowledge of the various sciences concerned, particularly of bacteriology. Without a thorough knowledge of dairy bacteriology, some points are sure to be overlooked or misjudged. Inspectors may insist on changes which are not justified in the light of modern knowledge, or on points about which scientists still disagree, in consequence of which dairymen who endeavor to produce a truly sanitary milk

become discouraged or are put to needless expense and annoyance. It is therefore highly important that dairy inspectors be men of good practical judgment, thoroughly trained in the technical requirements of clean milk production, and well acquainted with the best work in dairy research. The card system of recording the results of inspections and establishing the rating of each dairy has proved of value, but needs further elaboration and improvement. About this we may have something to say later.

SURGEONS AS NON-BELLIGERENTS IN WAR

In his recent and notable "History of the Confederate War," Eggleston calls attention¹ to a great step forward in the civilization of warfare which was brought about by one of America's great surgeons, who was also one of the Presidents of the American Medical Association. The event makes an epoch in the betterment of the customs of war, and its origin deserves to be more widely known than it is. In describing Stonewall Jackson's Valley Campaign, Eggleston pauses to give the following account of the event in question, which occurred after the battle of Winchester, in May, 1862:

"In the meanwhile, it is pleasant to record here one step forward in civilization which was made during this campaign, and the author of which, Dr. Hunter McGuire, deserves remembrance for his humanity. Until that time, and indeed for long afterward, surgeons in charge of hospitals full of wounded men, on falling into the enemy's hands, were treated as prisoners of war. After every battle, therefore, the surgeons of a retiring army, in charge of wounded men from both sides, must make a hard choice. They must either abandon their patients—many of whom were in desperate need of immediate surgical attention—or they must submit themselves to the rigors and sufferings of a military imprisonment, precisely as if they had been taken in battle. As a result of this peculiar barbarism of war the wounded—by the flight of their surgeons—were often left unattended at the critical moment that meant to them the difference between life and death. Many precious lives were needlessly sacrificed to this barbaric military practice.

"At the battle of Winchester Jackson captured all the Federal surgeons in charge of the field hospitals there, but instead of sending them to Belle Isle or Andersonville or Libby Prison, he acted on the suggestion of his medical director, Dr. Hunter McGuire, and released the doctors unconditionally on the rational and humane ground that surgeons do not make war, and ought not to be subjected to war's pains and penalties, and on the still more rational and humane ground that it is needful for the care of the wounded on both sides that surgeons shall be permitted to remain at their posts

1. Jan. 7, 1910, p. 48.

1. Eggleston, George Cary: *The History of the Confederate War*, i, 385, et seq.

until surgeons on the other side can replace them, regardless of army movements and without fear of being sent to a loathsome prison as a punishment for their faithfulness to their merciful duty.

"This step forward in the amelioration of war's horrors was not generally followed up until two years later when, during the tremendous struggle of 1864, General Lee and General Grant, acting on their own humane impulses and with no authority except the confidence of each that his acts would be approved, agreed that surgeons in charge of wounded men should not be made prisoners of war. . . .

"It was Dr. Hunter McGuire who first offered this suggestion in behalf of humanity, and it was Stonewall Jackson who first took the responsibility of acting on it. To their memory history should record honor for it."

It is a pleasant duty to repeat this bit of history and to give this tribute to one who left a rich heritage of good deeds.

Current Comment

DOCTORS DIGGING THE DITCH

Under the above heading the *St. Louis Republic* recently made the following editorial comment:

When a great medical inventor or chemist discovers anything which promises to be or is of great benefit to mankind his discovery or invention at once becomes the common property of the human race without royalty or rate beyond that of personal service of the physicians who may administer such remedies.

When a great commercial chemist or inventor makes a discovery of value to humanity he at once capitalizes it, and all mankind pays high tribute in the form of sometimes prohibitive royalty.

In digging the Panama Canal the United States is obliged to pay tribute to monopolists of machinery and to patentees of various mechanical devices.

Yet had it not been for the physicians who have made the canal zone habitable through sanitation the efforts of all the inventors and "world conquerors," of engineers and machinists would amount to exactly nothing.

The doctors of the United States, not its engineers or mechanics, are doing the most important work in the great isthmian ditch. Yet it is the soldier, the engineer, the mechanic to whom the honors are accruing.

Why is it that temporal honor and financial reward seem so bent upon being diverted from the ways in which they should properly travel?

The construction of the Panama Canal has been, and is, a magnificent object-lesson on the possibilities of prevention of disease by the application of facts connected with modern scientific medicine. No one will deny that the French had as good plans, as good engineers, as good machinery, and as good workmen as we have; but the French could not build the canal. And what was the reason? Simply that they could not keep enough men out of the hospitals and graveyards to complete it. The men sickened and died as fast as they could be imported. When the United States undertook the construction of the canal, the government did not call in the representatives of various erratic cults, "mind-cure healers" or patent medicine vendors to solve

the problem as it related to health. Its solution was entrusted to educated, experienced, specially trained, scientific medical men; to those who brought to its solution the latest and best methods of modern science. And the results have justified the methods. The civilized world has marveled at the result of the work of the Sanitary Department of the Isthmian Canal. Yet, it is simply the application of modern medical science. There is not a village, not a city, not a state that cannot secure equal results in the way of prevention of sickness and the saving of life, if such methods are adopted and if competent men are given authority and opportunity.

STATE SOCIETIES AND A SANE FOURTH OF JULY

At least one state medical society, that of Pennsylvania, through a special committee, has been doing energetic work toward the securing of safer methods of celebrating the Fourth of July. This committee, which was appointed a year or two ago, has been giving wide publicity throughout the state to the statistics of deaths and injuries as published annually in *THE JOURNAL*, and has also been conducting a campaign through local clubs, societies and associations of Philadelphia, to secure the enforcement of existing laws, or the adoption of new laws restricting or prohibiting the use of fireworks during the celebration of Independence Day. Since proper control by the larger cities means practically the solution of the problem, the committee has drawn up two model prohibitive ordinances, one for boroughs and one for cities, and is now working to secure their adoption. The committee has also been working for the substitution of more desirable methods of celebration, such as picnics, parades, pageants, field sports and the like. The splendid work being done by the Medical Society of the State of Pennsylvania through its able committee is worthy of emulation in other states.

CONSUMPTION-CURE FAKES

At different times *THE JOURNAL* has exposed the methods of those firms and individuals who make capital out of the consumptive by advertising "cures" for his disease. The way in which one of these cruel frauds is carried on may be taken as typical of the methods of all. On another page¹ a widely advertised concern of this kind is dealt with—the J. Lawrence Hill Company. Like another "consumption cure" shown up a few weeks ago, the firm is located at Jackson, Michigan, a town which has also fathered such fakes as the Magic Foot Drafts, the Van Vleck Pile Cure, Young's Pepto-Pads, the Vitalia Company, Vibro Discs and Lung Germine. One of the reasons for this city being so popular as headquarters for mail-order medical fakes is made evident in the article before referred to: at least three of the concerns are operated by the same group of business men. The fact of the matter is, medical mail-order companies, as a general rule, are in no sense the property of those renegade members of the

1. Page 134.

medical profession whose names appear on the stationery of the concern. Such physicians usually are merely cheap tools in the hands of business men who are concerned not at all with the moral, much less with the ethical, phase of the subject of quackery. The cruelty of promising to cure such diseases as cancer and consumption by means of pills bought in million lots from pharmaceutical houses does not, apparently, occur to such men. The business is, to them, merely a cold-blooded commercial proposition: A few thousand pills; a series of follow-up letters; a batch of testimonials; a cheap and unscrupulous physician; an advertising campaign—these are the stock-in-trade by which those engaged in this disreputable business gather in the toll of blood that pays dividends on the money invested. A pretty business, forsooth!

Medical News

CALIFORNIA

Million to Hospital.—Through the generosity of the heirs of Calvin Page and D. O. Mills, St. Luke's Hospital, San Francisco, will receive an endowment of more than a million dollars.

Personal.—Dr. John C. Hollister, formerly of Chicago, has recovered his health and settled in Los Angeles to resume practice.—Dr. M. Evangeline Jordan has been elected president of the Professional Woman's League of Los Angeles.

Advertising Abortionist Sentenced.—Charles H. Carelton, Los Angeles, charged with using the mails to advertise unlawful surgery, is said to have been found guilty, December 28, and fined \$2,500. This individual was arraigned in 1909 on the charge of conducting the business of an abortionist and of using the mails in furtherance of this occupation. He is said to have pleaded guilty to a similar charge in 1908 and was fined \$1,500.

Elections.—At the annual meeting of the Alameda County Medical Association, held in Oakland, Dr. Alexander S. Kelly, Oakland, was elected president; Dr. William A. Clark, San Leandro, vice-president; Dr. Pauline S. Nusbaumer, Oakland, secretary, and Dr. Dudley A. Smith, Oakland, treasurer.—The Santa Clara County Medical Society, at its annual meeting held in San José, December 21, elected the following officers: president, Dr. Jonas Clark, Gilroy; vice-presidents, Drs. William S. Van Dalsem, San José; Harry B. Reynolds, Palo Alto, and Robert L. Hogg, Saratoga; secretary, Dr. William T. McNary, San José; treasurer, Dr. Henry J. B. Wright, San José; delegates to the state association, Drs. A. Lincoln Cothran and Henry C. Brown, both of San José, and alternates, Drs. Louis V. Saph, Morgan D. Baker, John L. Benepe and Edward F. Holbrook, all of San José.

ILLINOIS

Enters Penitentiary.—Dr. J. Allen Cotton, Peoria, entered the State Penitentiary, Joliet, December 28, to serve an indeterminate sentence for forgery.

Small-Pox in State Hospital.—Employees and patients of the Elgin State Hospital have been vaccinated on account of the discovery that the chief gardener was ill with small-pox.

State Board Election.—At the annual meeting of the State Board of Health, held in Springfield, January 5, Dr. George W. Webster, Chicago, was reelected president, and Dr. James A. Egan, Springfield, was reelected secretary.

New Trial Granted.—In the case of Dr. Benjamin A. Arnold, Freeport, convicted in the March term of the circuit court of Stephenson County on account of criminal assault, and sentenced to four years in the penitentiary, the supreme court has reversed and remanded the case.

Superintendent of Health Loses Case.—In a case instituted by Dr. George T. Palmer, Springfield, against Dr. Addison C. James, Springfield, for alleged violation of the city ordinance which prescribes the reporting of all cases of communicable diseases, the magistrate dismissed the case on motion of the city attorney on the ground that the evidence was not sufficient.

Sterilization of Defectives.—A bill is being prepared by Judge Sherman, president of the State Board of Administration,

with the assistance of Dr. Frank Billings, chairman of the State Commission on Charities, providing for the sterilization of habitual criminals, imbeciles, idiots and feeble-minded wards of the state. The bill provides that in all cases the subject must be examined and passed on by an authorized board before this operation is performed.

Personal.—Dr. Charles M. Noble, Bloomington, who has been confined in a hospital on account of a fracture of the leg, is convalescent and has left the hospital.—Dr. Thomas E. Walton, Danville, was thrown from his buggy recently, fracturing a rib.—Dr. Edward E. Barbour, Peoria, is reported to be seriously ill with typhoid fever in St. Francis Hospital.—A judicial inquiry is to be made with the object of determining the mental condition of Dr. William P. Pierce, Hoopes-ton, who is alleged to be on the verge of a nervous collapse.

State Board Recommendations.—The Illinois State Board of Health, in its annual report to the governor, recommends the creation of a state sanatorium for consumptives; a bill providing for better methods of registration in vital statistics to conform with the provisions of the census bureau of the United States; a law providing for a revised medical practice act so as to give the State Board of Health jurisdiction over all licenses issued since 1877; continuation of the provision for free distribution of diphtheria antitoxin to all classes of people, and a special provision for the investigation of typhoid fever in the state.

Hospital Notes.—By the will of the late Elizabeth Shaw, Dixon Public Hospital is bequeathed \$30,000.—The Colonial Hospital, Geneva, has been incorporated by Drs. Raymond G. Scott, Francis M. Marsteller and others. The hospital now has accommodation for twenty-five patients.—A hospital for the care of destitute crippled children, costing \$50,000, has been erected 3 miles west of Wheaton, as a branch of the Home for Destitute Crippled Children, Chicago. Sixteen acres of land were donated to the institution by Sears, Roebuck and Company.—A private sanitarium for the treatment of nervous diseases is being established by Dr. George W. Mitchell in Peoria.

Good Work at the Edward Sanatorium.—The report just issued of the Edward Sanatorium, Naperville, of which Dr. Theodore B. Sachs is medical director, gives an analysis of the first four years' of the work of this institution. Of the patients who were admitted in the incipient stages of the disease, 91.5 per cent. have been discharged as either cured or the tuberculosis process arrested, and these are all still maintaining their condition and full working capacity. Of the moderately advanced cases treated at the sanatorium during the same period, 35 per cent. are at present in possession of full working capacity. The State Association for the Prevention of Tuberculosis maintains that the fact that patients taken in the first stages are cured at relatively small expense and again become productive members of the community, is a convincing argument in favor of state and local provision for the curable consumptive, obviating as it does the necessity of later care at county expense for both the advanced consumptive and his family left destitute.

The Apfelbaum Case.—The State Board of Health has served notice on David Apfelbaum that if he continues to practice, additional suits will be brought against him. In June last the board revoked his certificate for advertising under another name than his own, and for fraudulent use of the United States mail in conducting medical practice. A short time ago the board learned that Apfelbaum was still engaged in practice. He was served with notice to discontinue. The notice was disregarded. The board then brought suit against him for practicing medicine without a license. The defendant, through his attorney, declared that he had a license and that there was no provision in the law enabling the board to prosecute a man who had once been issued a license. The attorney took exception to this plea and pressed the suit which was tried in the municipal court, January 3. The court decided against Apfelbaum, who has appealed to the supreme court.

Chicago

Senn Memorial.—The building of a new high school at Ridge and Francis Avenues is recommended to relieve the old Lake View High School which is to be torn down. The new school is to be known as the Nicholas Senn High School.

Personal.—Dr. and Mrs. Robert H. Babcock and family have gone to California for a stay of two months at Pasadena.—Dr. Jacob M. Furstman has been appointed commissioner of health of Lacrosse, Wis.—Dr. Claude Tilleson, an intern at the Henrotin Memorial Hospital, was painfully burned while acting as Santa Claus at a Christmas celebration at the Nurse's Home of the hospital.

Impure Food Seized and Condemned.—More than 6,200 cans of tomato paste, weighing 124,000 pounds, said to be used by hotels and restaurants in making soup and tomato bouillon, were seized, December 30, by United States deputy marshals, who raided box cars in the Pennsylvania Railroad yards, following the filing of a libel against the tomato paste, in the United States District Court, declaring that the "paste was putrid, decomposed and contained filthy matter."

Hospital Notes.—The Iroquois Memorial Emergency Hospital, a monument to the six hundred and more who lost their lives in the Iroquois Theater fire, Dec. 30, 1903, was dedicated December 30, with impressive ceremonies. The building is of fireproof construction, four stories and basement in height, and contains twenty rooms, including four surgical dressing rooms and two operating rooms.—An order was issued December 29, allowing the Northern Trust Company as trustees of the will of the late Anna W. Durand to purchase a site for a hospital for infectious diseases. Mrs. Durand bequeathed \$375,000 to be used for the erection and maintenance of the hospital.—The dispensary department of the Municipal Tuberculosis Sanatorium opened a night clinic at Gad's Hill Center, January 5. The dispensary is open Thursday evenings from 7 to 8 for the benefit of patients who are unable to come during the day.

KENTUCKY

Sisters of Charity Plan Sanatorium.—The Sisters of Charity of Nazareth are arranging to establish a tuberculosis sanatorium near Louisville at an expense of about \$50,000.

Nurses' Home Damaged by Fire.—The Nurses' Home of the Jewish Hospital, Louisville, was damaged by fire to the extent of \$3,000, recently. Fortunately no casualties occurred.

Typhoid in Railway Shop.—Owing to the prevalence of typhoid fever among employees of the Louisville and Nashville Railway shop, South Louisville, the county bacteriologist is making investigation of the water-supply used by the men at work. Fifteen cases of typhoid fever occurred among these men during the last three months.

Jefferson County Society Meeting.—The annual business meeting and election of officers of Jefferson County Medical Society was held in Louisville, January 2. The following officers were elected: president, Dr. Virgil E. Simpson; vice-presidents, Dr. Albion L. Parsons and Walker B. Gossett, and treasurer, Dr. Hugh N. Leavell, all of Louisville.

Vital Statistics Law.—The Kentucky Vital Statistics Law went into effect January 1. The first infant to be registered under the law was born at Bowling Green, the home of the secretary of the State Board of Health and the headquarters of the Vital Statistics Bureau. Registrars have been appointed in every county in the state largely by magisterial districts, save in larger cities and towns where one registrar will serve.

Personal.—Dr. William Bailey, the oldest practitioner of Louisville, fell on an icy pavement, December 27, and sustained an impacted fracture of the arm; on January 2, he had a mild cerebral hemorrhage, but nevertheless he is reported to be in favorable condition.—Dr. W. Ed Grant, health officer of Louisville, has returned from Pass Christian, Miss.—O. C. Robertson, Cynthiana, has been appointed the osteopathic member of the State Board of Health.

New Officers for Antituberculosis Society.—At the annual meeting of the Kentucky Association for the Study and Prevention of Tuberculosis, held in Louisville, Dr. Joseph N. McCormack, Bowling Green, was elected second vice-president; Dr. Hervey Keller, Frankfort, third vice-president, and Drs. Joseph N. McCormack, Bowling Green; Dunning S. Wilson, Louisville; George P. Sprague, Lexington; Henry P. Sights, Paducah; Vance Rawson, Danville; Hervey Keller, Frankfort, and J. C. Carpenter, Stanford, directors.

MARYLAND

Typhoid Fever at Naval Academy.—The outbreak of typhoid fever at the United States Naval Academy, Annapolis, which began in November last, affected twenty-six midshipmen without a single death, and 200 of the cadets submitted to vaccination with anti-typhoid serum. The outbreak has been traced to infected milk.

Personal.—Dr. William D. Hammond, Hagerstown, has been appointed resident physician of the Free Skin and Cancer Hospital, St. Louis.—Dr. Guy Steele, Cambridge, is ill with pneumonia.—Dr. Arthur L. Wright, assistant physician at the Maryland Hospital for the Insane, Catonsville, has been made pathologist, vice Dr. Robert P. Winterode, resigned to

take charge of the proposed new State Hospital for the Colored Insane.—Dr. Augustine S. Mason, Hagerstown, is reported to be critically ill at his home.

Society Meetings.—At the annual meeting of the Talbot County Medical Society, held in Easton, the following officers were elected: president, Dr. William S. Seymour, Trappe; vice-presidents, Drs. Philip L. Travers, Easton; Joseph A. Ross, Trappe; secretary-treasurer, Dr. Clifford M. Steele (reelected); censors, Drs. Edward R. Trippe and S. Denny Willson, Easton, and Charles H. Rose, Cordova; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. James A. Stevens, Easton.—The Medical Society of Somerset County held its semiannual meeting in Princess Anne, elected Dr. Teackle J. Smith, Princess Anne, president, and reelected Dr. Ralph L. Hoyt, Oriole, secretary-treasurer.

Baltimore

Hospital Sued.—Suit has been started against Mercy Hospital for \$25,000 damages for the death of a man suffering from pneumonia, who, while delirious, threw himself or fell from a window. Negligence of those having the patient in charge is alleged.

Personal.—Dr. M. E. B. Owens, of the University Hospital staff, left for Spokane, December 23.—Dr. William H. Howell has resigned as dean of the Johns Hopkins Medical School, and has been succeeded by Dr. J. Whitridge Williams.—Dr. John W. Churchman, resident physician at Johns Hopkins Hospital, has resigned.—Drs. William Emrich and Hugh W. Brent have returned after three years in Brazil.—Dr. William J. Schmitz has been made second assistant bacteriologist of the City Health Department.

MASSACHUSETTS

Milk Commission.—The personnel of the Suffolk District Medical Milk Commission, beginning January 1, will be as follows: chairman, Dr. James Marsh, Jackson; secretary, Dr. Richard M. Smith; and Drs. George A. Craigin, Robert L. DeNormandie, B. L. Arms, and Fritz B. Talbot, all of Boston.

Personal.—Dr. F. Lyman Wells, formerly assistant in pathologic psychology in McLean Hospital, Waverly, has been made assistant in experimental pathology in the Psychiatric Institute of the New York State Hospitals and lecturer in psychology in Columbia University.—Dr. Edward Wyllys Taylor, Boston, has been nominated to succeed Dr. George F. Jelly, resigned, as a member of the State Board of Insanity.—Dr. Charles G. Dewey, Boston, has been made senior insanity expert, and Dr. William P. Prescott, junior expert.—Dr. Charles S. Tomkies, a member of the Boston City Hospital medical staff and former house officer of the Long Island Hospital and Alms House, has been appointed resident physician at that institution, vice Dr. George W. Holmes, resigned.

Bequests.—By the will of the late Mrs. William O. Moseley, Newburyport, \$200,000 is bequeathed to the Anna Jaques Hospital, Newburyport, to be divided into two funds, of which the income only is to be used. The first fund is to be known as the William O. Moseley Fund and the income is to be applied to the purposes of the hospital; the other fund is to be known as the Julia M. Hale fund, and the income is to be devoted to the maintenance of free beds.—By the will of the late Rev. Thomas Griffin, former pastor of St. John's Church, \$10,000 is devised to St. Vincent's Hospital.—By the will of John Ashton, who died nearly half a century ago, the Massachusetts General Hospital will now receive more than \$20,000. The estate has been in litigation since the death of the testator in 1867.—By the will of Mrs. Sarah A. Matchett, Brookline, \$50,000 is bequeathed to the McLean Hospital, Waverly, and \$25,000 to the Massachusetts General Hospital, together with certain contingent bequests to the McLean Hospital.

NEVADA

Postgraduate Course in Washoe County.—Washoe County Medical Society took up the postgraduate course recommended by the American Medical Association, January 1. The society is divided into four classes, each class meeting once a week.

Personal.—Dr. John A. Ascher, Sparks, has been elected state senator from Washoe County.—Dr. William H. Hood, Reno, has returned from a six-months' trip around the world.—Dr. Lee T. Richie, formerly of Reno, has removed to Trinidad, Colo.—Dr. A. Parker Lewis, Reno, has been seriously ill with pneumonia followed by septicemia from an infected finger.—Dr. John A. Lewis, Reno, has returned after a year abroad.—Dr. Sydney Clarke, Tonopah, is reported to be dangerously ill in a sanatorium in California.

NEW YORK

Albany Hospital Loses.—Because Dr. Willis G. McDonald, who died a short time ago, forgot to put his signature to his will, thus making it worthless under the law, the Albany Hospital with which he was connected for so many years will lose a bequest of \$50,000, and also his surgical instruments and library. The estate goes to his relatives.

Would Discontinue Directory.—At the annual meeting of the Medical Society of the County of Chemung, resolutions were adopted setting forth the loss to the Medical Society of the State of New York in publishing the Tri-State Medical Directory, and urging the discontinuance of the publication of the directory. The state society is declared to lose more than \$6,000 each year in publishing the directory.

Personal.—Dr. Frederick S. Lee, New York City, has been appointed to the directorship of the department of physiology of Columbia University.—The ninetieth birthday of Dr. Alfred Mercer, the oldest practicing physician of Syracuse, was made the occasion of a complimentary party, tendered to him by the Syracuse Academy of Medicine, at which Dr. John L. Heffron presided as toastmaster. Dr. Albert E. Larkin, on behalf of the guests, presented Dr. Mercer with a handsomely-bound copy of the souvenir dining card, bearing his photograph, and signed by those present at the dinner.

New York City

Harvey Society Lecture.—The fourth lecture of the Harvey Society Course, delivered January 14, by Dr. Arthur R. Cushny of the University of London, is on "The Therapeutics of Digitalis."

High Birth and Low Death Rate.—During 1910 this city has recorded the lowest death rate since records have been kept, and also the highest birth rate. The lowest death rate from tuberculosis and typhoid fever and the lowest mortality among infants are also reported.

Herter Lectures.—The first of the six lectures on "The Irregularities of the Heart," given under the Herter Foundation of the University and Bellevue Hospital Medical College, was delivered by Dr. Arthur R. Cushny of the University of London, January 9, at the Carnegie Laboratory.

Hospital Buys Property.—The Presbyterian Hospital has added to the site for the new hospital buildings twelve and one-half lots just west of the property acquired and immediately north of the site on which the buildings of the Rockefeller Institute for Medical Research have been erected.

Officers of the New York Neurological Society.—The following officers were elected for the year 1911: president, Dr. L. Pierce Clark; vice-presidents, Drs. Smith Ely Jelliffe and Dr. Edward W. Scripture; corresponding secretary, Dr. J. Ramsay Hunt, and recording secretary and treasurer, Dr. Edwin G. Zabriskie.

Dr. Alexander's Death.—The Medical Board of Bellevue Hospital, at its meeting, January 1, recorded on its minutes the removal by death of Dr. Samuel Alexander, who had been connected with the hospital from the time of his graduation until his death, and bearing testimony to Dr. Alexander's ability as a surgeon, and earnest, sympathetic and noble qualities as a man.

Injunction Against Expulsion.—The New York County Medical Society recently expelled Dr. Robert Kunitzer and Dr. Louis Anton Ewald for falsification of the Sydenham Hospital records. Dr. Ewald has asked the Supreme Court to continue a temporary injunction restraining the Board of Censors of the County Medical Society from taking action toward expelling him.

Donation to Medical School and Hospital.—A gift of \$1,300,000 has been pledged for the perfection of the affiliation of the Presbyterian Hospital and the medical school of Columbia University. The gift was made through Edward H. Harkness, and is believed to have come from members of his family. He himself contributes \$300,000 for the erection of a surgical pavilion to be equipped with modern appliances and also a complete laboratory for advanced research work.

Reorganization of Health Department.—Dr. Ernest J. Lederle, commissioner of health, in a talk before the City Club, January 7, outlined the work of the department for the last year and detailed his plans for the coming year. One plan is the reorganization of the department on lines to increase its efficiency. This will include the question whether the commission of sanitary inspectors of the various boroughs will have charge of certain functions or whether full power will be centered in the commissioner.

Christmas Gifts for Hospitals.—The Hospital Saturday and Sunday Association, which helps to maintain forty-five hospitals of this city has asked for a fund of \$200,000 this year as a Christmas donation. Of the 79,132 persons cared for in these hospitals during the past year, 42,484 received free treatment. The annual expenditures of these hospitals are in nearly every case larger than their receipts and the cost of maintaining a patient has increased from \$1.17 daily per capita ten years ago to \$2.06 at present.

Personal.—The appointment of Dr. Daniel Potter as director of the new board of ambulance service has been approved by the municipal civil service commission.—Dr. Simon Flexner, who was operated on for appendicitis at the Presbyterian Hospital, December 5, has entirely recovered and has left the hospital.—Dr. Theodore C. Janeway has resigned from the City Hospital Board.—Dr. Ernest J. Walker, Fordham Hospital, was recently injured in a collision between an ambulance and a street car, and as the result of the injury was obliged to have his arm amputated.

To Conserve Eyesight.—At a meeting of physicians and laymen at the United Charities Building a National Association for the Prevention of Blindness and the Conservation of Eyesight was formed. In addition to the conservation of eyesight the association will interest itself in social purity, the prevention of infant mortality and the safeguarding of industrial occupations. National and state medical associations, educational and commercial bodies, labor organizations, women's clubs and other societies dealing with social problems will be invited to cooperate with the new association. Dr. F. Park Lewis of Buffalo was elected Chairman of a Board of Directors to be named in the near future.

Accidents to Children.—There were seventy-six children of school age killed last year in street accidents. The National Highways Protective Association says that 40 per cent. of these accidents were due to the carelessness of the children or their ignorance of the conditions of street traffic. This society caused warnings to be printed and posted and to be read in the schools. The German newspapers printed the notice and commented on it, bringing it forcibly to the minds of parents and it is stated that in no instance was a German child maimed or killed. The necessity of teaching children to care for themselves in the streets should be brought to the attention of teachers and parents. The school masters of Boston have formed a committee of Prevention of Street Accidents to Children and are considering the most feasible ways of incorporating into the minds of the older children a sense of responsibility for younger ones.

Public Health Lectures.—A series of lectures which form part of the New York work of the Public Health Education Committee of the American Medical Association was inaugurated January 12, under the auspices of the Public Health Education Committee of the Medical Society of the County of New York and the Hygiene Committee of the New York City Federation of Women's Clubs. The lectures are to be given alternate Thursday afternoons and Wednesday evenings, and two, three or four lectures are to be given at each session. On January 12, the session was devoted to Home Hygiene; that of January 18 will consider Industrial Hygiene; January 26, the Cause and Prevention of Some Common Diseases; February 1, Insect-Borne and Water-Borne Diseases; February 9, Pure Milk and Infant Hygiene; February 15, Public Hygiene; February 26, The Health of the School Child; March 1, Congenital and Acquired Deformities and Their Prevention; March 9, Mental Hygiene; March 15, Alcohol and Meat in Relation to Disease; March 23, Health of Women, in Youth and Maturity; and March 29, The Care of the Eyes. The use of Hosack Hall has been offered through the courtesy of the Council of the New York Academy of Medicine.

PENNSYLVANIA

Personal.—Dr. George R. Vernon has resigned from the presidency of the Board of Health of Clifton Heights.—Dr. William T. W. Dickenson, of Media, one of the oldest physicians in Delaware County, celebrated his eighty-third birthday anniversary, January 5.

War on Food Adulterations Successful.—Statistics compiled by James Foust, of the State Food and Dairy Commission, show that the campaign against food adulterations has diminished greatly the number of infractions of the law. During the year special agents purchased and the chemists analyzed 5,594 samples of food products. Prosecutions for adulterations misbranding, departure below standard and other infractions of the food laws were terminated in 621 cases; 231 were oleomargarin cases, seventy milk cases and sixty-

two ice cream cases. The fines and costs imposed by the courts in these cases amounted to \$30,405.92, of which those for the violation of the oleomargarin law amounted to \$15,456.92.

Officers Elected.—At the November meeting of the Washington County Medical Society, the following officers were elected: president, Dr. Robert E. Conner, Hickory; vice-president, Dr. Joseph W. Hunter, Charleroi; secretary-treasurer, Dr. John B. Donaldson, Canonsburg; and censors, Drs. Olie P. Dearth, William J. L. McCollough, both of Washington, and John H. Carey, Prosperity. —At the meeting of the Somerset County Medical Society, held at Meyersdale, October 18, the following officers were elected: president, Dr. Maurice Stayer, Rockwood; vice-president, Dr. Henry I. Marsden, Somerset; financial secretary, Dr. Henry Hertzler, Jenners; secretary, Dr. Henry C. McKinley, Meyersdale, and treasurer, Dr. Walter S. Mountain, Confluence.

Philadelphia

Hospital Does Not Need State Aid.—The St. Agnes Hospital has notified the State Board of Charities that it will not apply for an appropriation from the legislature, because the bequest of \$70,000 of James I. McCauley, who died in that hospital four years ago, will become operative during the present year. Its last biennial appropriation was \$50,000.

College of Physicians Election.—The following officers and elective committees were chosen at the January 4 meeting of the College of Physicians of Philadelphia to serve for the year 1911: president, Dr. George E. de Schweinitz; vice-president, Dr. James C. Wilson; censors, Drs. Richard A. Cleeman, S. Weir Mitchell, Arthur V. Meigs and James Tyson; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; honorary librarian, Dr. Frederick P. Henry, and councilors, Drs. Francis X. Dercum and William T. Shoemaker.

Housing Commission Committee Appointed.—At a conference of the Philadelphia Housing Commission, held on December 15, in the Mayor's office in the City Hall, it was decided to appeal for better legislation in the campaign to improve conditions in the congested city districts. The following committee was appointed to prepare a bill for presentation in the legislature: Dr. Richard H. Harte, Mrs. Hannah Fox, Dr. Charles J. Hatfield, Mrs. B. Weston, Dr. Frances C. Van Gasken, Montgomery Harris, F. S. Hall, Dr. Samuel Furbish and Mrs. Wendel Reber.

Gift to the University.—It was announced on January 4, that on December 31, the last day of Mr. C. C. Harrison's provostship, he received a gift of \$100,000 from an alumnus of the University of Pennsylvania, to endow the chair of physiologic chemistry in the Medical School. The donor of the fund, who has requested that his name be withheld, has asked that the new chair be called "The Benjamin Rush Chair of Physiologic Chemistry." Dr. Alonzo E. Taylor, who was called from the University of California last fall, to occupy the chair of physiologic chemistry, will become the Benjamin Rush professor.

Officers Elected.—At a December meeting of the West Philadelphia Medical Association, the following officers were elected to serve for 1911: president, Dr. Hiram L. Lutz; vice-president, Dr. Charles P. Pike; corresponding secretary, Dr. Henry G. Munson; financial secretary, Dr. Walter M. Miller; treasurer, Dr. Edmund L. Graf; board of directors, Drs. Aaron L. Bishop, Benjamin F. Wentz, Christian B. Longenecker, Arthur E. Bogart, A. Wiese Hammer, George M. Astley, George C. Shammo, Charles H. Wallace, William S. Newcomet, Sherman F. Gilpin and F. Mortimer Cleveland. —At the annual meeting of the South Branch of the County Medical Society, held on December 30, Dr. Stuart C. Runkle was made president; Dr. William N. Bradley, vice-president and delegate to the Philadelphia County Medical Society, and Dr. Paul B. Cassidy, secretary, all of Philadelphia.

Personal.—Dr. David L. Edsall, professor of medicine in the University of Pennsylvania, has resigned and accepted the professorship of preventive medicine in Washington University, St. Louis. —Dr. Arthur C. Sender has been appointed chief of the x-ray department in St. Joseph's Hospital. —Dr. Max F. Herrman has been appointed to the out-patient gynecologic staff of St. Joseph's Hospital. —Drs. W. A. Newbold, Francis Stover and Howard L. Hull have been appointed to the out-patient medical staff of Jefferson Medical College Hospital. —Dr. Philip J. Conlon, a resident physician in the Germantown Hospital for the past year, left that institution on January 4, to take a similar position at St. Agnes Hospital. He is succeeded by Dr. C. B. Maek. —Dr. Simon Wendkos, superintendent of Mount Sinai Hospital, resigned January 7, to take effect on March 1. He will go to

Berlin where he will take a special course in medicine and surgery.

TEXAS

Society Meetings.—At the annual meeting of the South Texas District Medical Association, held in Port Arthur, December 8, Dr. Wilbur E. Thomson, Beaumont, was elected president; Dr. Howard R. Dudgeon, Galveston, vice-president; Dr. Edward F. Cooke, Houston, secretary-treasurer (reelected). The next meeting will be held in Galveston in July, 1911. —The Fifth District Medical Society, at its semi-annual meeting in San Antonio, elected the following officers: president, Dr. Evarts V. DePew, San Antonio; secretary, Dr. Ferdinand C. Walsh, San Antonio; and treasurer, Dr. Louis G. Wille, New Braunfels (reelected). —At the annual meeting of the Fourth District Medical Society in San Angelo, Dr. T. Richard Sealy, Santa Anna, was elected president; Dr. J. Ernest Robinson, Brownwood, secretary-treasurer; and Coleman was selected as next place of meeting. —At the annual meeting of the El Paso Medical Association, December 5, Dr. Henry F. Safford was elected president; Dr. Harry H. Stark, vice-president and editor of the bulletin; Dr. R. Irvin McNeil, secretary-treasurer; and Dr. William H. Piekles, censor. —The Big Springs-El Paso Medical Society held its annual meeting in Sweetwater, recently, and elected the following officers: president, Dr. Newton J. Phenix, Colorado; vice-president, Dr. John W. Overton, Sweetwater; and secretary-treasurer, Dr. Granville T. Hall, Big Springs. —At the annual meeting of the Taylor County Medical Society, held in Abilene, December 6, Dr. Manton M. Carrick, assistant superintendent of the State Epileptic Colony, was elected president; Dr. Marion Armstrong, Merkel, vice-president and censor; and Dr. J. M. Estes, Merkel, secretary-treasurer. The members of the society were guests of Dr. James M. Alexander at a dinner. Dr. M. M. Carrick presided as toastmaster.

VIRGINIA

New Secretary of State Society.—Dr. Paulus A. Irving, Farmville, has been elected secretary of the Medical Society of Virginia, vice Dr. Laudon B. Edwards, deceased.

Expectorators Fined.—As a result of the ernsade of the Norfolk Board of Health against spitting on sidewalks, fines of two dollars each were assessed against a negro and a white man recently.

Hospital Notes.—The Southern Hospital and Dispensary Company has been incorporated at Richmond with capital of \$50,000. —Fire at Catawba Sanatorium, the State Tuberculosis Camp, destroyed a building causing damage of \$800. —The resident physician at Catawba Sanatorium announces that ninety-five patients are now under treatment at the hospital.

Medical Fraternity Election.—The eighteenth annual meeting of the Centrum Ovale of the Pi Mu National Medical Fraternity was held in Richmond, December 17. Dr. Paul W. Howle, Richmond, was elected senior councilor; Dr. Charles M. Byrnes, Charlottesville, junior councilor; Dr. Francis W. Upshur, Richmond, calamus scriptorius; Dr. Lawrence T. Price, Richmond, calyx; Dr. Wallace D. Carr, Richmond, librarian, and Dr. N. Thomas, Richmond, editor of the annual.

GENERAL NEWS

Journal Becomes Monthly.—The general manager of the Rockefeller Institute for Medical Research announces that the *Journal of Experimental Medicine* begins its thirteenth volume as a monthly instead of a bi-monthly as heretofore. Two volumes will be issued each year, without change in the price of subscription. Dr. Benjamin T. Terry has succeeded Dr. Eugene L. Opie as the associate of Dr. Simon Flexner in the editorial control of the magazine.

New England Alumni Meet.—The New England Association of the New York Medical College held its eighth annual meeting and banquet in the Parker House, Boston, December 13, and elected the following officers: president, Dr. Elgin W. Jones, Lynn, Mass.; vice-presidents, Drs. Ira J. Prouty, Keene, N. H.; Albion S. Whitmore and Charles O. Thompson, both of Boston; secretary, Dr. J. Henry Woods, Brookline, Mass., and treasurer, Dr. James H. Stuart, Boston.

Interstate Meetings.—At the annual business meeting of the Marinette (Wis.) and Menominee (Mich.) Medical Society, December 14, Dr. Calvin R. Elwood, Menominee, was elected president; Dr. David R. Landsborough, Daggett, Mich., vice-president, and Dr. Earl V. McComb, Menominee, secretary-treasurer. —The Society of Missonri and North Arkansas Surgeons held its annual meeting in Helena, December 14, and selected Heber Springs as the next place of meeting.

The following officers were elected: president, Dr. Hugh L. Routh, Batavia, Ark.; vice-presidents, Drs. S. A. Russell, Fairview, Mo.; Clifford H. Trotter, Helena, Ark., and William B. Snipes, Spring Creek, Ark., and secretary, Dr. Tillman B. Bradford, Cotton Plant, Ark.

CANADA

Sanitarium Fire.—Fire did \$50,000 damage to the Home-wood Sanitarium at Guelph, Ont., January 6. All the inmates were removed safely and found accommodation in a private residence adjoining the sanitarium.

Dominion Society to Meet.—The forty-fourth annual meeting of the Canadian Medical Association will be held in Montreal during the first week of June, 1911, immediately following the official opening of the new McGill medical buildings.

Increase of Cancer in Ontario.—During the seven years up to and including 1908 8,769 persons of all ages died in Ontario from various forms of cancer. In 1902 the number was 1,048; 1903, 1,156; 1904, 1,253; 1905, 1,224; 1906, 1,411; 1907, 1,329, and 1908, 1,348.

Montreal Medical Journal Announces Its Discontinuance.—Having just issued its December number, the *Montreal Medical Journal* announces that it will cease publication, as it has been acquired by the Canadian Medical Association as its official organ. The title of the new journal is somewhat in doubt as "The Canadian Medical Journal" infringes on the title of one of the other medical journals of Canada. The history of medical journalism in Montreal is given from 1844 when the *Montreal Medical Gazette* came into existence, up to the present time.

Personal.—Dr. W. B. Kendall, superintendent of the Muskoka Cottage Sanatorium, Gravenhurst, has gone to Europe to study the latest phases of the tuberculosis problem.—Dr. Joseph E. Laberge, chief of the infectious diseases department, Montreal, has been appointed a member of the Board of Health of the Province of Quebec.—Dr. Charles H. Vrooman, Winnipeg, formerly in charge of the Manitoba Sanatorium for Consumptives, Ninette, has been appointed superintendent of the Tranquille Sanatorium in British Columbia.—Dr. James T. Rogers, Montreal, has returned from Europe.

Tuberculosis in Ontario.—From the published report of the Registrar-General for Ontario, which has just been issued for the year 1908, it is seen that tuberculosis is declining materially in the province of Ontario. The largest number of deaths from this disease in any one year was that of 1900, when the total was 3,484. In 1901 the number was 3,284; 1902, 2,694; 1903, 2,723; 1904, 2,877; 1905, 2,667; 1906, 2,911; 1907, 2,530; 1908 2,511—a decrease in the eight years of 973. The death rate from tuberculosis in Ontario per 1,000 of the estimated population is 1.12; in the city group, it is 1.43; in the town group, 1.17; for the balance of the province, 1.002.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 31, 1910.

The Destruction of Rats

The epizootic of plague among rats in Suffolk, accompanied by four cases in man and occasional imported cases of plague observed in the London docks, which have been reported in previous letters to THE JOURNAL, have led to great activity in the destruction of rats. The Board of Agriculture and Fisheries has issued a leaflet on the destruction of rats. Of poisons, barium carbonate is recommended as the cheapest and best. It causes thirst and therefore induces the rats to seek water in the open, where they die. It may be used in the proportion of one part to four parts of meal mixed into a dough with water, or may be spread on fish or moist toasted bread. It is added that if rats find that any of their fellows die after eating any kind of food they avoid such food for some time, so that it is generally necessary to vary the form and appearance of the bait. With regard to rat virus the results are found to be uncertain, owing partly to difficulty of securing successful infection in all cases, and partly to the fact that if only slightly infected, rats recover and become immune to the disease. When it is desired to exterminate the rats in a district all methods—hunting, trapping and poisoning—should be used and the attack made in

a circle radiating from a spot in which it is considered that the final work of destruction can be accomplished with the least difficulty.

Salvarsan in England

As in all civilized countries, salvarsan, or "606," has become a burning topic, not only in the profession, but in lay circles, and has been the subject of a long article in the *Times*, a journal in which such a technical as well as objectionable (from the lay standpoint) subject as the treatment of syphilis is very much out of place. Considerable difference of opinion exists as to the value of the new remedy. Mr. McDonagh, surgeon to the London Lock Hospital, who has had by far the greatest experience with it in Great Britain, reports favorably on it and endorses all the claims made by Ehrlich. In all stages of syphilis rapid recovery followed a single injection. He has treated 130 cases, in only three of which recurrence took place, two of these patients being cured by a second injection; only five patients did not respond at all. Lichen syphiliticus, which is most resistant to mercury, was cured by a single injection. Malignant syphilis associated with tuberculosis was improved beyond recognition. In nerve paralysis from syphilitic meningitis almost complete power of the muscles was regained. In one case of tabes the Argyll-Robertson pupils disappeared and the knee-jerks returned, and also morning erections which had been absent for years. However, out of seventeen patients with tabes only three improved so much that the lightning pains disappeared. General paralysis in the early stage improved considerably.

On the other hand, Mr. Ernest Lane, another specialist, declares that his results have been no better than he would have expected from mercury. One patient with syphilitic ulceration improved temporarily, but soon relapsed; another injection was followed again by improvement and another relapse, the ulcer spreading to twice its former size. In one case hyperpyrexia followed the injection for ten evenings.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 23, 1910.

The Lannelongue Prize

The Lannelongue prize, which consists of a gold medal and the sum of \$1,000 (5,000 francs), to be awarded every five years (THE JOURNAL, April 3, 1910), has just been awarded for the first time. Sir Victor Horsley of London is the first recipient.

The New Director of the School of Pharmacy

Professor Guignard, who desires to devote himself hereafter solely to scientific work, has requested the minister of public instruction to relieve him of the directorship of the higher school of physiology and pharmacy, which he has carried on for about fifteen years, having succeeded Professor Planchon. The faculty of the school has unanimously elected a new director, M. Henry Gautier, professor of inorganic chemistry at the school.

Personal

On December 20, the Académie de médecine held its annual election, Professor Lannelongue, the vice-president, assuming the presidency of right. Dr. Gariel, professor of medical physiology at the Paris medical school, was elected vice-president, and Drs. Weiss and Henriot were elected secretary and treasurer, respectively.

Relief of Foreign Paupers

M. Emil Loubet, former president of the republic, as president of the Association internationale d'assistance publique et de bienfaisance privée, has asked the government to invite the powers to a diplomatic conference to arrange a treaty in regard to the relief of foreign paupers in conformity with the resolution adopted by the Congress of Copenhagen (THE JOURNAL, Sept. 10, 1910, p. 956). The conference will probably be held in Paris, the headquarters of the association.

Civil Responsibility of the Surgeon

A patient who was operated on at the Beaujon hospital by Dr. Bazy for an ovarian cyst brought suit against the surgeon for \$10,000 (50,000 francs) damages for having left in the cystic cavity two compresses which finally penetrated into the rectum and were eliminated by the anus. The court recognized that Dr. Bazy had been at fault, but as it was established that the present condition of the patient had no relation with this

fact, and that at the time of her admission to the hospital, her health and even her life had been in great danger, and as it was impossible to overlook the fact that the plaintiff probably, not to say certainly, owed her life to Dr. Bazy's intervention, the court reduced the amount of damages to \$1,000 (5,000 francs).

Dr. Bazy has appealed from the decision and has laid the question before the Société des chirurgiens des hôpitaux de Paris, in the following form: 1. Is it scientifically possible, assuming that compresses were left in a cyst in the course of operation, that this cyst, which was malignant according to experts, might, whether spontaneously, through its epithelial nature, or secondarily by the presence of the compresses, have ulcerated or caused the ulceration of the intestine so as to permit the passage of two compresses, measuring a meter in length by 30 centimeters in thickness (about a yard long by about 12 inches wide), without having caused any stercoral fistula? 2. This decision would constitute a precedent which would encourage fraud and would threaten professional independence. Is it not most desirable that the society should take measures to free surgery from this handicap? To study these questions, the society has appointed a commission, composed of Dr. Sagond, president of the société des chirurgiens des hôpitaux, Dr. Nélaton, representative of the same society on the *conseil de surveillance* of the Public Charities, Dr. Routier, president of the Société de chirurgie, Drs. Delbet and Quénu and Professor Reclus, one of the three experts in the case (added to the commission at his own request).

Premiums with Medical Journals

Up to the present, certain lay journals have been the only ones which have offered premiums for subscriptions. Recently, the first number of a new weekly journal of medicine, called *Paris Médical*, published under the direction of Prof. A. Gilbert, has offered premiums "worth several times the price of the subscription." A monthly medical periodical, announced to appear January 15, also offers premiums to the first 5,000 subscribers in France and all of the foreign subscribers. "Our premiums are not," says the advertisement, "such worthless trifles as paper-knives and blotters; they are worth at least the price of the *Æsculape*, and most of them are worth much more." This new and curious phase of medical journalism cannot be too much deplored.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 16, 1910.

Personals

Prof. Franz König, the distinguished surgeon, died at Berlin, December 12, aged 78. König was one of those whose researches secured the development of modern surgery. Endowed with keen powers of observation and an inventive mind, he early recognized the significance of antiseptics and asepsis and enriched surgical pathology with a series of important observations and in his classical demonstrations became a model for scientific study and teaching. Diseases of the bones and joints were prominent subjects of his study. He also did good work in the course and results of wounds of the lung, stenosis of the rectum, tracheotomy in croup, the operation for congenital dislocation of the hip, etc. His large three-volume text-book of special surgery monopolized the book market for a long time and has only lately been somewhat approached by other text-books. It is remarkable that König without having joined any faculty was chosen on the ground of his literary publications in 1869 as regular professor of surgery at Rostock. A few years after his service in the Franco-Prussian war he was called to Göttingen where he worked for twenty years. When Langenbeck resigned as director of the surgical clinic in Berlin, König received a call as his successor, but declined on account of his health. However after the death of Bardeleben he accepted charge of the surgical clinic at the Charité in Berlin. Here he performed a great service in the rebuilding of the surgical clinic. After he had performed this task he resigned his position in 1904 while still fully capable of service. König possessed the fullest confidence both of the medical profession and of his clientele, owing to his strong personality and his completely reliable character. In criticism he was sharp and merciless, but under his rough exterior was hidden deep feeling.

Professor Riess, former assistant of Frerichs and for many years director of the internal medicine department of the hospital at Friedrichshain, celebrated his seventieth birthday December 15.

Dr. Kurz, privat-docent at Heidelberg, has been appointed director of the institute for legal medicine at that place.

Robert Koch Memorial

On December 10, a mausoleum for Robert Koch was opened in the institute for infectious diseases of which he was director for many years. It was formed from some rooms of the institute. The funds for the rebuilding, amounting to about \$5,000 (20,000 marks), were contributed by his many pupils and friends. The mausoleum consists of two rooms, the first a small antechamber in which some of the scientific instruments used by Koch, his numerous domestic and foreign honorary diplomas, models of the medals awarded to him, and other memorials of his life are placed. Here also is the so-called "golden book" of the Robert Koch Foundation for the War on Tuberculosis that contains in an artistic setting the history of the foundation and the autographs of the larger contributors to the fund including the Kaiser, Andrew Carnegie, Prince von Donnersmarck, the representatives of the cities of Berlin, Charlottenburg, Hamburg, Bremen, etc. In the special memorial hall, in a niche that is closed with a white marble slab, is placed the urn that contains the ashes of Robert Koch. The walls and floors are all of marble. Over the niche for the urn is a marble tablet on which is a portrait of Koch in relief, larger than life size, and on the opposite wall the chief dates of Koch's life are engraved.

December 11 the special memorial service took place in the new hall of the university. The large hall which seats about 1,500 persons was filled with a mourning throng which included many physicians, especially members of the Berlin medical faculty, representatives of the government and the chief German medical faculties and representatives of many medical societies as well as of foreign universities and societies. Of his relatives there were present his son-in-law, Professor Pfuhl, his brothers and sisters, his widow and others. On the other hand, his daughter by his first wife did not appear, probably on account of the family difficulties which arose in connection with the divorce of his first wife and marriage to his second wife, who, as is well known, was before her marriage a member of an operetta troupe. The memorial address was delivered by Professor Gaffky who was for many years a pupil of Koch and is his successor as director of the institute for infectious diseases. The musical part of the memorial service, which was rendered by distinguished talent, was a great factor in the profound impression produced by the entire memorial.

Fourth International Congress for Thalassotherapy

A few days ago there occurred a session of the German imperial commission for the fourth international congress for thalassotherapy which is to assemble in June, 1911, at Kolberg, the Baltic seashore resort. The transactions showed that the preparations for the congress are making the best of progress and promise a very successful meeting especially in scientific lines. The congress is to consider the success and limitations of sea bathing as a therapeutic agent. Especial contributions will be offered by the Prussian institute for oceanology on the physical properties of sea water, e. g., its different and varying content in salts at the individual watering places. On the climatic conditions of the bathing resorts on the North Sea and the Baltic information will be furnished by the meteorologic institute.

Third International Congress for Infant Hygiene

The empress has assumed the protectorate of the congress to be held in Berlin, Sept. 11-13, 1911, and the imperial chancellor has accepted the chairmanship of the honorary committee. Following the congress there will be a visit to the international exposition of hygiene at Dresden which, to judge from the great style in which the preparations are being carried out, will be of unusual importance.

Hospital Provision in Prussia

According to the official review recently published, the number of general hospitals in Prussia in 1908 amounted to 2,203 with 147,737 beds; 1,167,000 patients were given about 35,500,000 days' care. For every 10,000 inhabitants, there were in 1908 38.4 beds and 303.35 patients against 38.33 beds and 293.20 patients for 1907.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 17, 1910.

Protests Against Proposed Legislation

As I wrote in a previous letter, the plan of establishing a special committee for the purpose of controlling the charitable institutes has aroused a vehement burst of indignation on the part of the medical profession. Not only have the medical councils protested against an arrangement to which the profession was not a part, but the directors and professors of the Austrian hospitals and clinics have also called the attention of the public and the government to the fact that such an undertaking would be answered by them with a resignation of all posts. This was brought to the knowledge of the ministry of education by a deputation through which the clinical professors demanded freedom and independence for their scientific research. The plan has now been so changed that only the financial transactions will be handed over to the various diets (of states) while the other grievances shall form the subject of negotiations between the factors concerned. One of the principal demands of the medical circles is that politics and religion shall have no bearing whatever on the appointment of the staff and that recommendations by the hospital staff as regards appointments and scientific equipment shall have the first consideration.

Marriages

FELIX S. JENKINS, M.D., to Miss Regina Randolph, at Baltimore, December 26.

MARION DILLON, M.D., Fairfield, Mo., to Miss Ethyl Kahl of Windsor, Mo., recently.

ALOIS F. JUETTNER, M.D., to Miss Cora K. Amann, both of Cincinnati, December 27.

CARL C. STEVENS, M.D., to Miss Hazel Arnold, both of Sharon, Wis., December 27.

MARK F. HOPKINS, M.D., to Miss Hazel M. Wintringer, both of San José, Cal., December 20.

WILLIAM B. LINTON, M.D., to Miss Florence L. Whitney, both of Minneapolis, December 14.

ROBERT GAYLORD DAVIS, M.D., Des Moines, Ia., to Miss Vera Hartley of Durand, Ill., December 27.

OSCAR M. OWENSBY, M.D., to Miss Bessie Myrtle Frazier, both of Pittsburg, Kan., December 31.

JAMES B. MARTIN, M.D., Traverse City, Mich., to Miss Mabel Bullock of St. Joseph, Mo., December 20.

WALLACE BRUCE SMITH, M.D., U. S. Navy, to Miss Louise Blake, at San Mateo, Cal., December 21.

JAMES L. LYNCH, M.D., Winona, Minn., to Miss Nora J. Guidinger of St. Charles, Minn., December 28.

JAMES ALBERT SULLIVAN, M.D., East St. Louis, Ill., to Miss Ethelynn P. Weisert of Vincennes, Ind., May 25.

FRANK MARION SPRAGUE, M.D., Seattle, Wash., to Miss Ethelinda Ireland of Pocatello, Ida., December 29.

GEORGE EDWARD CHAPPELL, M.D., to Mrs. Isobel Brown, both of Grass Valley, Cal., at San Francisco, December 23.

LEROY SPANGLER HOWARD, M.D., Harrisburg, Pa., to Miss Myrtle Ada Snyder of Loganville, Pa., December 22.

JAMES DAWSON REEDER, M.D., Baltimore, to Miss Anne Carey Gourley, at Holland's Point, Md., December 30.

WILLIAM S. CROUCH, M.D., Stafford, Kan., to Mrs. Ella Pennington of Ashland, Ky., at Herrin, Ill., December 8.

MARSHALL DICKSON CORNELL, M.D., to Miss Susie Cherry, both of Sallisaw, Okla., at Fort Smith, Ark., December 26.

THEODORE H. TRAPPE, M.D., Hecker, Ill., to Miss Lela Manen of Waltonville, Ill., at Mount Vernon, Ill., December 29.

WILLIAM M. DAVIS, M.D., South Omaha, Neb., to Miss Lorene Emery of Lincoln, Neb., at Mynard, Neb., December 26.

MARY COFFIELD SMITH, M.D., Grand Rapids, Mich., and William Waldemere Von Baumgartner of Frankfort-on-the-Main, Germany, December 28.

Deaths

David Sherwood Kellogg, M.D. University of Vermont, Burlington, 1873; a charter member and trustee of the Northern New York Medical Association; a member of the Medical Society of the State of New York; pension examiner at Plattsburg from 1883 to 1900; health officer of the city from 1878 to 1880; on various occasions acting assistant surgeon U. S. Army at Plattsburg Barracks; a veteran of the Civil War; a trustee of the State Normal School and Public Library; died at his home in Plattsburg, December 19, aged 63.

William Smith Janney, M.D. Pennsylvania Medical College, Gettysburg, 1854; Jefferson Medical College, 1880; assistant surgeon of the Twenty-First, and surgeon of the Twenty-Sixth New Jersey Volunteer Infantry during the Civil War; a veteran of the Indian Border War in Kansas in 1856; coroner of Philadelphia in 1880; for sixteen years surgeon of the Philadelphia Hospital, and for twenty years to the Girard College Hospital; died at his home in Philadelphia, December 24, from heart disease, aged 78.

Carl Heinrich Kroeber, M.D. Dartmouth Medical School, Hanover, N. H., 1895; College of Physicians and Surgeons, New York City, 1896; of Yonkers, N. Y.; vice-president of the Jenkins Medical Society; a member of the staff of St. Joseph's Hospital, Yonkers; since 1902 a medical officer of the National Guard of New York, and assigned to the Tenth Infantry; died at the Loomis Sanatorium, Liberty, N. Y., December 12, from tuberculosis, aged 41.

Damon S. Cummings, M.D. Northwestern University Medical School, Chicago, 1876; a member of the American Medical Association; for six years mayor and for twenty-five years president of the School Board of Waseca, Minn.; for two terms superintendent of schools of Waseca County; a member of the board of control of the State School for the Indigent, Owatonna; died in St. Luke's Hospital, St. Paul, December 25, aged 60.

James Swinburne Hopkins, M.D. New York University, New York City, 1882; a member of the Medical Society of the State of New York and New York Academy of Medicine; formerly professor of ophthalmology in the New York College of Veterinary Surgeons, and assistant surgeon to the New York Ophthalmic and Aural Institute; died at his home in New York City, December 19, from chronic meningo-encephalitis, aged 51.

Isaac Prince, M.D. Hahnemann Medical College, Chicago, 1878; for ten years a missionary in Jamaica; a chaplain during the Civil War; for several years assistant superintendent of the Foundlings Home, Chicago; founder of the Home for Destitute Crippled Children, and instrumental in establishing the first three day nurseries in Chicago; died in the Church Home for Aged People, Chicago, January 2, from pneumonia, aged 76.

Willis Horton Pratt, M.D. University of Michigan, Ann Arbor, 1869; of Stillwater, Minn.; a veteran of the Civil War; for several years prison physician, coroner and physician of Washington County, and city physician; for one term a member of the legislature; for ten years president of the local pension board; died at his home, December 15, from uremia, aged 76.

John W. Blanton, M.D. Hospital College of Medicine, Louisville, 1884; a member of the Kentucky State Medical Association, and formerly president of the Jefferson County (Ky.) Medical Society, and Jefferson County Milk Commission; died, and formerly president of the Jefferson County (Ky.) December 26, from cerebral hemorrhage, aged 58.

Eben Hillyer, M.D. Jefferson Medical College, 1854; major and surgeon in the Confederate service during the Civil War; later a practitioner of Rome, Ga., and since 1885, president of the Rome Railroad; died at his home in Rome, December 19, from the effects of shock following a fall, in which he sustained a fracture of a leg and internal injuries, aged 78.

James Atwood Crowell Milliken, M.D. Medical School of Maine, Brunswick, 1910; intern in the Western Washington Insane Hospital, Fort Steilacoom; a member of the Kappa Sigma Fraternity and Phi Chi Medical Fraternity; died at his home in New Bedford, Mass., December 29, from lymphatic leukemia, aged 25.

Edward Storrer, M.D. University of Pennsylvania, 1863; a surgeon of volunteers during the Civil War, and for several years thereafter a contract surgeon in the army; afterward

special sanitary agent of the French government in Cochin, China; died at his home in Berkeley, California, December 3, aged 73.

Roscoe H. Goodrich, M.D. University of Vermont, Burlington, 1876; a member of the American Medical Association, and American Association of Railway Surgeons; local surgeon of the Chicago, Milwaukee and St. Paul Railway; died at his home in Chamberlain, S. D., December 19, aged 56.

Edward Page Granville Holderness, M.D. Missouri Medical College, St. Louis, 1860; Bellevue Hospital Medical College, 1875; consulting surgeon to St. Joseph's Hospital Bloomington, Ill.; of Chenoa, Ill.; died in Chicago Heights, Ill., January 1, from bronchopneumonia, aged 78.

Harrie William Moellering, Jr., M.D. Toledo (O.) Medical College, 1909; of Goshen, Ind.; a member of the Goshen Medical Society; while crossing a railway track near Goshen in his automobile, December 29, was struck by an express train and instantly killed, aged 28.

Andrew Judson Ervey, M.D. Rush Medical College, 1874; a member of the Michigan State Medical Society; a veteran of the Civil War; while crossing the railway track at his home in Wheeler, December 26, was struck by a passenger train and instantly killed, aged 65.

Walter J. Wait, M.D. Washington University, St. Louis, 1880; formerly coroner of St. Louis, but of late a practitioner of Joplin, Mo.; died at the home of his father-in-law in St. Louis, December 6, from amyloid disease of the kidney, aged 51.

Ira E. Cox, M.D. Central College of Physicians and Surgeons, Indianapolis, 1895; a member of the Indiana State Medical Association; formerly a practitioner of Indianapolis; died at his home in Goldsmith, Ind., December 20, from septicemia, aged 42.

John K. Hertz, M.D. Pennsylvania Medical College, Gettysburg, 1860; a member of the Medical Society of the State of Pennsylvania; a school director of Lexington; died at his home in that place, December 28, from valvular heart disease, aged 78.

Elsa M. Meador, M.D. Eclectic Medical Institute, Cincinnati, 1887; a member of the Kentucky State Medical Association; of Drake, Ky.; died in St. Joseph's Hospital, Bowling Green, Ky., December 14, from tuberculosis of the hip, aged 50.

William Powell Gordon, M.D. Washington University, St. Louis, 1867; Missouri Medical College, St. Louis, 1875; a member of the American Medical Association; died at his home in Carlyle, Ill., October 10, from cirrhosis of the liver, aged 66.

Samuel P. Smith, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1901; formerly of Cornelia, Ga.; president of the Ocmulgee Medical Association; died in a sanitarium in Atlanta, December 12, from cerebral hemorrhage, aged 39.

Osman Royal, M.D. Boston University School of Medicine, 1885; of Portland, Ore.; formerly president of the State Medical Board; died suddenly in that city, while watching a football match, December 31, from heart disease, aged 54.

Jonas Hoover (license, Nebraska, 1891); Ensworth Medical College, St. Joseph, Mo., 1892; of Waverly, Neb.; for thirty-seven years a practitioner; died in the Everett Sanitarium, Lincoln, Neb., December 17, from nephritis, aged 71.

John W. Pitts, M.D. University of Pennsylvania, 1867, a member of the Medical and Chirurgical Faculty of Maryland; a Confederate veteran, and first mayor of Berlin; died at his home, December 27, from pneumonia, aged 69.

John Aloysius Hemsteger, M.D. Chicago Homeopathic Medical College, 1890; and formerly professor of materia medica in his alma mater; died suddenly at his home in Chicago, January 5, from cerebral hemorrhage, aged 56.

Daniel Michael Driscoll, M.D. College of Physicians and Surgeons, New York City, 1900; a member of the American Medical Association; of Bridgeport, Conn.; died in St. Vincent's Hospital in that city, December 18, aged 33.

James B. Stephens, M.D. University of Nashville, Tenn., 1857; of Nashville; was thrown from his buggy in a collision with a taxicab, December 10, and died from his injuries five hours later in Dr. Fort's Infirmary, aged 76.

Herman F. Goetsch, M.D. Marquette University, Milwaukee, 1903; died at the home of his brother in Milwaukee, December 20, from the effects of cyanid of potassium, self-administered, it is believed with suicidal intent, aged 37.

William G. Gray, M.D. Washington University, St. Louis, 1862; for many years a practitioner of Greene County, Mo.;

died at the home of his daughter in St. Louis, December 22, from disease of the intestine, aged 73.

Charles Stuart Maynard, M.D. Eclectic Medical Institute, Cincinnati, 1859; for fifty years a practitioner of Van Buren County, Mich.; died at his home in Paw Paw, December 23, from cerebral hemorrhage, aged 80.

John Joshua Martin, M.D. Keokuk (Ia.) Medical College, 1904; of McCausland, Ia.; who moved to Davenport in November last; died in the Davenport Hospital, December 19, from intestinal obstruction, aged 42.

George W. Stapleton, M.D. Missouri Medical College, St. Louis, 1857; for sixty years a practitioner of Albany, Mo.; died at the home of his son in that place, December 21, from cerebral hemorrhage, aged 86.

Alexander Stephens Dyar, M.D. Southern Medical College, Atlanta, Ga., 1883; for four years city physician of Atlanta; died at his home in New Orleans, December 23, from tuberculosis of the larynx, aged 48.

William Harvey Leach, M.D. Cincinnati College of Medicine and Surgery, 1861; a member of the Medical Society of the State of California; died at his home in Napa, November 22, from angina pectoris, aged 75.

Raymond W. Chamberlain, M.D. Washington University, St. Louis, 1909; of Fisher, Ill.; senior medical intern at the City Hospital, St. Louis; died in that institution, December 24, from typhoid fever, aged 27.

Rebecca Lippett Smith, M.D. Hygeio-Therapeutic College of New York, New York City, 1859; New York Free Medical College for Women, 1873; died suddenly at her home in Syracuse, N. Y., December 11.

Hugh Henry Haden, M.D. University of Nashville, Tenn., 1886; a member of the Medical Association of the State of Alabama; died at his home in Holly Pond, December 25, from heart disease, aged 50.

Isaac B. Yeakel, M.D. University of Pennsylvania, 1866; a member of the Medical Society of the State of Pennsylvania; died at his home in Bally, December 30, from tuberculosis, aged 70.

Braxton Wise, M.D. Tulane University, New Orleans, 1883; a member of the Louisiana State Medical Society; died at his home in Benton, December 27, from cerebral hemorrhage, aged 55.

Franklin J. Geiger, M.D. Medical College of the State of South Carolina, Charleston, 1858; a Confederate veteran; died at his home near Saint Matthews, S. C., November 30, aged 75.

Amos S. Smith (license, Pa. 1881); for almost half a century a practitioner of Pennsylvania; died at his home in Bismarck, December 27, from heart disease, aged 78.

Ashbury Westfall, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1869; a resident of California for fifty years; died at his home in Monterey, November 30.

Oscar Augustus Perine, M.D. Eclectic Medical College of the City of New York, 1888; died at his home in Brooklyn, December 23, from uremia, aged 45.

George L. Ezzard, M.D. Southern Medical College, Atlanta, Ga., 1892; of Atlanta; died at a private sanitarium in that city, December 19, aged 44.

Lloyd E. Goodpasture, M.D. Washington University, St. Louis, 1908; died at his home in Thayer, Ill., December 25, from typhoid fever, aged 28.

Horace Parrish Taylor, M.D. Bellevue Hospital Medical College, 1889; died at his home in Norfolk, Va., December 1, from heart disease, aged 44.

Adolph Buettner, M.D. College of Physicians and Surgeons, Chicago, 1886; died at his home in Chicago, December 18, from paresis, aged 55.

Henry R. Richard, M.D. University of Minnesota, Minneapolis, 1900; of Waterville, Wash.; died in Wenatchee, Wash., December 22, aged 36.

William Warder McCarty, M.D. Miami Medical College, Cincinnati, 1878; of Canaan, Ind.; died in Madison, Ind., December 15, aged 82.

John R. Holifield, M.D. University of Louisville, Ky., 1870; died at his home in Mayfield, Ky., December 12, from pneumonia, aged 75.

George Cheeseman, M.D. Jefferson Medical College, 1866; died at his home in Library, Pa., December 24, aged 82.

it unnecessary "to materially change the patient's mode of living," and the further fact that in none of his series of follow-up letters does he recommend the open-air method of treatment, make plain the viciousness of this particular "consumption cure." As every reputable physician knows, the hardest task that confronts him, in his attempt to help the consumptive, is to get the patient to consent to put up with the inconveniences and minor hardships inseparable from the only rational treatment of the disease—the out-door life. The average consumptive believes that the physician should be able to give him "medicine" that will "cure" him—a belief that is as fallacious as it is dangerous and yet one that Hill and most consumption cure fakers play on.

After he has persuaded the victim to part with his \$10 for the "first month's treatment," however, Hill sends a pamphlet entitled "Rules for Living," in which the "mode of living"

patient is expected to fill out and return with the order for the first month's treatment. Much, also, is made of the wonderful virtues of Hill's "truly wonderful appliance for lung development and air sterilization" called the "Ozonol Lung Developer," which is sent "free" to those who order the first month's treatment. The price first asked for one month's treatment is \$10. Should the patient not "bite," the second follow-up letter—number "E 1 a"—comes just one month later. This "letter" dilates again on the "Ozonol Developer," for which Hill claims:

"The air in passing through this Developer is . . . more heavily charged with oxygen than if breathed otherwise . . ."

The second letter still gives the price of the treatment as \$10. Continued silence on the part of the patient brings—thirty days later—follow-up letter number "E 1 b." In this, the third letter of the series, the poor victim is told of those who have "been laid away among the Innumerable Dead" because they did not send for the Hill treatment soon enough.

"You know what is awaiting you, if you delay ordering my treatment."

The third letter brings the price asked down to \$5—the balance to be paid "after you are cured, or whenever you are able, just as you see fit." One month later, if the patient still wisely continues to hold on to his money, comes the fourth follow-up letter, number "E 2 a." This letter is chiefly devoted to Hill's laudation of himself and his work. For instance:

"I am a physician of many years' practice."

"I am widely known for the good I have done in treating patients afflicted with consumption . . ."

"The remarkable success I have had in curing these troubles certainly warrants any man or woman, no matter how seriously affected . . . to feel absolutely certain that if there is any one man living who can save them, I believe I can do it."

"I do not say this to boast, but because it is true."

The price, in the fourth letter, still remains at \$5. Should this fail to bring an order within a month, the fifth and last of this series of follow-up letters comes, number "E 3 a." This represents Hill's final attempt to "land" his victim, and the identical "treatment" for which \$10 was asked in the first two letters is now offered for \$3.20: "You shall never be asked for the balance."

THE "TREATMENT"

If the price of a "treatment" is sent—either \$10, \$5 or \$3.20, according to the ease with which the victim bites—back comes another form letter, "Tr. 1," commencing: "Your remittance for treatment just to hand, for which please accept thanks." The amount of the remittance is not mentioned, so presumably this "letter" may be used in acknowledging the receipt of any of the "fees" which Hill's sliding scale calls for.

The "treatment" itself seems to differ in no respect from the "trial treatment" sent previously, except in size. The "Globules," the "Systemic Wafers," the "Laxative Wafers" and the "Plasma"—all are there, in larger quantities, but with similar directions for their use. In addition to these there is the "New Ozonol Lung Developer," about which so much is said in Hill's follow-up letters and other advertising matter. The "lung developer" consists of a cigar-shaped piece of hard rubber about 3½ inches long. One end of the "developer" is hollow and the cavity is loosely packed with cotton saturated with the "ozonol" fluid, a small vial of which accompanies it. The consumptive is instructed to place the charged end of the instrument in one nostril, close the other and inhale deeply; when the lungs have been filled the patient is to place the opposite end of the "developer" in the mouth and "blow the air out from the lungs."

The Association's chemists examined the various preparations sent by Hill in one of his \$10 "treatments," and their report follows:

LABORATORY REPORT

A box labeled "Dr. J. Lawrence Hill's Rational \$10 Three-Fold Treatment for Consumption, Asthma, Bronchitis, Catarrh and all Diseases of the Throat, Nose and Lungs," and containing several forms of medication was submitted to the

Consumption

Getting Stronger Every Day.

Dear Doctor: I am getting along finely and I am getting stronger every day. I do not raise as much as I did. I can breathe easier and my fever has got down to 99 and 100. I do not know just what I weigh, but I know I have gained. I feel greatly benefitted since using your treatment.

Lockport, Ill., 6-20-'08.

You,
FRANK WACHTER.

City of Lockport

Office of
DR. F. W. SCHOOP, Mayor

Lockport, Ill., Dec. 21, 1910. 19

This certifies that I attended Frank Wachter of Lockport Ill., professionally during the last five months of his life That he died at his home in Lockport, Sept. 6, 1908, and that the cause of his death was tuberculosis of the lungs

F. W. Schoop, M.D.

Health Officer of the City of
Lockport at that time.

Subscribed and Sworn to before me

this 23rd. day of December 1910.

[Signature]
Notary Public.



Fig. 2.—The upper illustration is a reduced photographic reproduction of a Hill testimonial. The writer of it died three months after giving it. Hill continued to use the testimonial, however, for two years longer. The lower illustration is a photographic reproduction of a certified statement regarding the death of the writer of the testimonial.

recommended is certainly as "complicated" as any ever suggested by a reputable physician. It is evident, then, that the claims made—both directly and by inference—in the follow-up letters and advertising by which the prospective patient is led to believe that Hill's "treatment" is all that is necessary to cure consumption, is merely a catch-penny device to ensnare the victim. It is equally evident that if good results ever follow Hill's "treatment," they are due, not to the drugs he sends, but to the mode of living adopted by the patient.

SLIDING SCALE OF FEES

With the first letter and the "Trial Treatment" comes a symptom blank—the "Three Day Test Sheet"—which the

Association laboratory for examination. The "treatment" consisted of (1) a box of sealed elastic gelatin capsules, containing a liquid in which floated a pill, and labeled "Dr. J. Lawrence Hill's Globules"; (2) a small box of pinkish tablets labeled "Dr. Hill's Systemic Wafers"; (3) a small box of chocolate-coated tablets—"Dr. Hill's Laxative Tablets"; (4) a collapsible tube of a white ointment or salve labeled "Dr. J. Lawrence Hill's Plasma"; (5) a small vial (less than 2 drams) containing a brown liquid and bearing on the label—"Dr. J. Lawrence Hill's Antiseptic and Germ Killing Ozonol"; (6) a black hard-rubber inhaler, and (7) a small box containing a tuft of cotton.

The "Globules": These were opened and the liquid and pill examined individually. The pill after being freed from the liquid was treated with hydrochloric acid, resulting in an evolution of hydrogen with a characteristic odor, such as is given off on treating iron with hydrochloric acid. On triturating one of the pills and washing away the lighter insoluble matter, a residue of shining metallic scales remained, which, when dissolved in hydrochloric acid, emitted hydrogen gas as when the entire pill was treated. The resulting solution responded to tests for iron. On extracting the pills, from an alkaline medium, with ether, a bitter white crystalline substance was obtained, which responded to general alkaloidal tests, viz., it yielded a brown precipitate with iodine solution and a white precipitate with mercuric potassium iodide solution. Further examination showed that the substance gave strong reactions for quinine and less distinct ones for strychnine. No arsenic or other metals were found. From the results of the tests made it was assumed that the pills were composed essentially of iron (metallic), quinine and strychnine. The liquid in the globules was oily and possessed an odor of guaiacol. It was partially soluble in alcohol and completely soluble in ether and in chloroform. Alcohol extraction of the oil left a light yellow oil, practically odorless and tasteless; the portion extracted with alcohol responded to tests for guaiacol. The liquid portion of the "globules" then appeared to be a solution of guaiacol, or guaiacol-like body, in some bland oil.

The "Systemic Wafers": These were practically completely soluble in water, yielding a slightly turbid solution. They were sweetish in taste and slowly soluble in the mouth, resembling milk sugar. Tests for milk sugar indicated its presence. Further examination indicated the absence of metallic constituents, such as arsenic, antimony, mercury, iron, manganese, zinc, magnesium or calcium. Tests for alkaloids indicated the absence of alkaloids, such as atropine, strychnine, etc., while tests for such substances as iodides, bromides and salicylates indicated their absence. From the examination it was concluded that the tablets were essentially milk sugar.

The "Laxative Tablets": These were found to contain a substance having a faint, peculiar odor and a very bitter taste. Tests for arsenic and other heavy metals indicated their absence, and the tablets did not respond to tests for alkaloids. The bitter taste and the use for which the tablets were intended, pointed to the possible presence of aloin or aloes, and appropriate tests proved that aloin or aloes and a small quantity of starch were present. From the tests made, it was assumed that the tablets were principally aloes or aloin with some starch.

The "Plasma": This substance was found to be a white ointment or salve with a strong odor of oil of wintergreen. When subjected to steam distillation the distillate was found to contain material having the odor of wintergreen, while the residue in the distillation flask possessed an odor resembling oil of cloves. The "plasma" when extracted with ether yielded a substance which had the properties of stearic acid and the portion soluble in water had the properties of a stearic acid soap. The substance also contained a small quantity of a gummy substance resembling tragacanth. Tests indicated the absence of metals and alkaloids. It was concluded that the "plasma" was essentially a stearic acid ointment containing as its chief ingredient oil of wintergreen and small quantities of other oils.

"Ozonol": This liquid possessed an aromatic odor and was soluble in alcohol, ether and in chloroform, but insoluble in water. When extracted successively with various solvents fractions were obtained which resembled such essential oils as sassafras, peppermint and eucalyptus. No alkaloids or other potent drugs were found. From the above properties "Ozonol" was assumed to be a mixture of aromatic oils resembling sassafras, peppermint and eucalyptus.

The chemists' report thus confirms what has been said over and over again, viz., that quacks and medical fakers use either absolutely worthless preparations or else endow well-known

and commonly used drugs with virtues that they do not possess. To suppose that rubbing an ointment of tallow and wintergreen on the chest would cure consumption is as foolish as to believe that taking sugar tablets internally or that sniffing the vapors of oil of peppermint or sassafras would accomplish the same end.

The fact is the drugs sent out by Hill will not cure consumption, either in the first, second or any other stage of the disease. That they may easily upset the digestive apparatus of the person taking them is evident to any physician, and the danger of such a result becomes apparent when it is remembered that the chief hope of the consumptive is an unimpaired ability to digest food.

TESTIMONIALS—TWO KINDS

With each of Hill's follow-up letters testimonials are sent. These are of two kinds: One kind purports to come from "patients" telling how they were "cured"; the other emanates from "prominent business and professional men," and are printed to show Hill's "standing, both as a man and physician." Of the latter, four of the testimonials are purely personal and not professional. The use Hill has made of them, however, practically means that they are an endorsement of his "treatment." Hill is one of those pious humbugs who work their church affiliations to the limit in the exploitation of fake "cures." It is said that he used to be in the ministry, and that even after opening his fakery at Jackson he was a pretty regular attendant at the weekly meeting of the Jackson Ministerial Association, where he not only participated in the discussions, but occasionally contributed papers. Even as recently as Dec. 18, 1910, a Jackson newspaper contained a "Christmas Sermonette" by John L. Hill entitled "Christ the Wonderful One." These incongruous mixtures of pseudo-piety and quackery—and they are not uncommon—must make the thinking marvel and the religious grieve.

The four pastors, whose endorsements Hill has used, were written to and their attention called to the use Hill was making of their letters. Here are some excerpts from the replies received:

Says Rev. R. E. Macduff: "I knew then [at the time the letter was written] nothing about his quack nostrum, his method, the fraud being practiced on the sick. . . . I desire earnestly that it shall be understood by the American (medical) profession that I absolutely repudiate the letter given which is being used as never intended. . . . I have been deceived and imposed on, like a large number of good men here."

Says Rev. F. W. Fraser: "I advised Dr. Hill and asked him to discontinue the use of the testimonial."

Says Rev. R. W. Van Kirk: "I did not know he was going into the mail-order business when I wrote the commendation, and am quite unwilling that he should make merchandise in any way of my name."

Says Rev. Bastian Smits: "I have requested Dr. J. L. Hill to cut out my recommendation from all of his printed matter. He has honored this request."

SOME MEDICAL ENDORSEMENTS

Of the other miscellaneous testimonials from "prominent . . . professional men" is one from S. M. Angle, M.D., of Jackson, Mich. In appraising the value of this testimony, it should be borne in mind that Dr. Angle is at present "consulting physician" for the other Jackson "consumption cure" fraud, the Lung Germine Company; furthermore, he is a "women's specialist" of the usual advertising type, and within the past few weeks the newspapers that carry his advertisement have chronicled his arrest on the charge of selling cocaine to 17-year-old boys. Apropos of mail-order medical men writing testimonials for each other: A fulsome puff of the Van Vleck "pile cure"—another Jackson industry—is credited by that concern to Dr. J. L. Hill. Another of Dr. Hill's endorsers is Dr. H. F. Wertz of Jackson. Wertz advertises to "cure with my home treatment" the "worst cases" of ulcer of the stomach and many other conditions too numerous to be given. Dr. W. T. Bobo, a "goiter cure" advertiser of Battle Creek, Mich.,

adds his mite of testimony to the sterling value of J. Lawrence Hill, A.M., D.D., M.D. In Figure 3 we reproduce some of the advertisements of this trio.

PATIENTS' TESTIMONIALS

Testimonials from patients, as we have shown repeatedly, mean little. Those that are honestly given come from one of two classes of individuals: (1) People who are really dangerously ill, and who, in the optimism that every new "treatment" inspires, write praising the "cure"; (2) those who, having nothing seriously the matter with them, naturally recover from the passing indisposition and credit their recovery to whatever they may have taken. This may be laid down as an axiom: No sufferer from tuberculosis ever got well from the "treatment" sent out by mail-order consumption cure quacks.

We investigated some of the cases of consumption in patients whom Hill claims, either directly or by implication, to have cured. Space will not permit us to do more than give very briefly the result of the inquiries. Following are the names of individuals whose testimonials are given as samples of the "cures" of consumption which Hill achieves:

Frank Waechter, Lockport, Ill.: Died Sept. 6, 1908 (Fig. 2). The testimonial, however, was still doing duty in the latter part of 1910!

Nancy Townesly, Shawnee, Okla.: No one of that name could be found. The city directories for the past six years failed to show the name.

Otto Bruee, Hartford, Wis.: Died March 5, 1909. Testimonial still used in the fall of 1910.



Fig. 3.—Photographic reproduction (reduced) of the advertisements of some of Hill's professional friends; these gentlemen testified to his sterling worth.

Miss Young, South Haven, Mich.: A South Haven physician writes: "In my opinion, judging from my observations of her for the last ten years, she has never had tuberculosis. At all times she has presented the appearance of a strong healthy girl."

Miss Ida Schultz, Amherst, Wis.: Died Aug. 21, 1909. The testimonial still lives.

Mrs. Mary Hawkins, Cleo, Okla.: A physician in Cleo writes: "The only Mrs. Hawkins in this vicinity is said, by those who have known her many years, to be a strong healthy woman, with no suspicion of tuberculosis."

HILL GROWS WARY

So much for the testimonials. Dr. Hill, within the past few months has grown wary. Like every other consumption "cure" exploiter, he has found that testimonials prove boom-rangs. He now, therefore, omits the names and addresses on the testimonials sent out, but states that they "will be given you on request." One of his latest sheets of testimonials consists of answers to queries mailed to a number of his "patients." The queries are alleged to have been sent by "an anxious seeker after health," and were signed "F. L. C." Is it possible that Mr. F. L. Childs, the vice-president and owner of nearly half of the stock in the Hill concern and alleged proprietor of a Kalamazoo "constipation cure" is the "anxious seeker after health"—and testimonials?

HILL'S EDUCATIONAL QUALIFICATIONS

Just a word in closing about J. Lawrence Hill, A.M., D.D., M.D. He is a graduate of the Chicago Homeopathic Medical College, 1894. In his advertisements he claims to be a graduate of Edinburgh University, Scotland. In 1896 Hill was practicing in Battle Creek, Calhoun County, Mich. In February, 1896, he filed his physician's certificate, as the law requires, with the county clerk of Calhoun County, and, according to the court records, he at that time *stated under oath* that he was "a graduate of Edinburgh Medical College, Scotland." Inquiry made of the authorities of the University of Edinburgh brought the following reply from the registrar of the university:

"The name J. Lawrence Hill does not appear in any of our lists of graduates, but we find the following entries in Matriculation Records (a search having been made for the period 1856 to 1894):

"1877-8 John Lawrence Hill, Pontypool, age 26, Arts 1st."

"1878-9 J. L. Hill, Edinburgh, age 27, Arts 2nd."

"No other entry appears which gives the slightest indication of bearing on the case."

Which is correct? Hill's statement or the registrar's? If the latter, does it place Hill in the serious position of having committed perjury? In any case it seems to be a matter into which the Michigan authorities may well look.

CONCLUSIONS

To sum up: What does this investigation of the Hill "consumption cure" show?

First: The Hill consumption cure is chiefly owned and controlled by men whose only qualification for treating disease is that they are business men financially interested in other medical fakes.

Second: The claims made in the advertisements, either directly or by implication, that the Hill remedies will "cure" consumption are cruel and heartless falsehoods.

Third: The methods employed to capture victims, by means of speciously worded circular letters disguised as personal communications, are an imposition, if not an actual fraud, on the ignorant or credulous.

Fourth: The drugs sent out by Hill as a "trial treatment" are worthless as a cure for consumption.

Fifth: In printing endorsements of himself, which Hill received from ministers of the gospel, he grossly abused the confidence of men who did not know the use to which their letters were to be put.

Sixth: The testimonials from physicians which Hill publishes have been shown to emanate in some cases from men who themselves are employed in exploiting medical fakes.

Seventh: The claim Hill makes of being a graduate of Edinburgh University has been shown to be as false as the claims made for the nostrum he exploits.

Can a much more disgraceful business than the various "consumption cure" humbugs be imagined? Founded on fraud, maintained by deceit, perpetuated by falsehood—the sick are exploited to pay dividends on corporate quackery. How much longer will this outrage on the unfortunate victims of the White Plague be tolerated? If not for humanitarian reasons, then for its own protection, at least, society should demand that such cruel frauds be suppressed. Their existence is a menace to public health and a disgrace to modern civilization.

CALMINE

New Names for Old Drugs

"Calmine, the new Hypnotic," is another example of the ingenuity of the exploiters of proprietary preparations in coining new names for old drugs and the recklessness with which exploiters herald forth renamed remedies to the profession and the public as new and wonderful discoveries.

This is what the promoters, sustained by a calm confidence in the credulity of the profession, have to say:

In the medical circles throughout the country a good deal of interest and even enthusiasm over this new hypnotic is noticeable.

Very few drug products have attracted so much attention as this one.

A really satisfactory hypnotic and sleep-inducer, which Calmine certainly seems to be, has been awaited expectantly for many years. Of course, we have always had agents of this sort—a new one has come out at frequent intervals—but none of them have “filled the bill”; they have been prescribed only because there was nothing better to be had.

Now this new and wonderful discovery is nothing but Veronal-sodium (sodium diethyl-barbiturate) under another name. It is the sodium salt of the more or less favorably known hypnotic, Veronal (diethyl-barbituric acid). It is also sold as Medinal, and differs from Veronal only in that the combination with sodium has made it more readily soluble, and thus, it is claimed, its absorption is more prompt. Veronal is protected abroad by a trade-mark and in this country by a patent, and this, undoubtedly, is responsible for the introduction of this sodium salt under these fanciful names, because Veronal could not be sold without infringing on the patent. This in turn induced the manufacturers of Veronal, in self protection, also to put the sodium salt on the market, and now we have it under the name of Calmine. This probably is only the beginning; soon we may look for it under a host of other names and the usual result will follow: thoughtless physicians who have had poor results with it under one name will try it under others. Or worse still, physicians will thoughtlessly combine Veronal with Calmine or with Medinal in the same prescription, thus giving a dangerous dose.

Correspondence

The Medical Profession Must Change Its Tactics

To the Editor:—He who is not a frequent visitor to radical clubs, does not come in contact with newspaper men, with “new thoughters,” and does not read regularly the numerous naturopathic, health culture and physical culture journals, and other allegedly advanced publications, can have no idea how the medical profession is ridiculed, maligned, lied about, misrepresented and “knocked” on every possible occasion.

Physicians are pictured as ignoramuses, grafters, butchers, anxious to operate whether there is a necessity or not, “drug dopers,” etc. The medical profession is denounced as a trust and monopoly, and any attempt of physicians to organize or to pass laws protecting the public health is characterized as an attempt at class legislation, a desire for special privileges, inspired by our fear of the competition or by fear of the superior skill of their irregular rivals.

And the average physician who has not given the matter any thought has no idea what effect these unceasing slanders and persistent lies have on the public mind, how suspiciously a large part of the public is beginning to look at the medical profession, how physicians are losing the confidence of the people, how the ground is slipping from under their feet.

As an illustration one need only mention the reception that has been accorded to the suggestion of a federal department of health. The motives that actuate physicians and the objects of such a department were at once misrepresented, the people were made to believe that their freedom to choose a medical adviser was threatened, the forces of reaction and obscurantism, masquerading in some instances under the guise of liberalism, were quickly marshalled and in a short time a society was organized, which now claims a membership of 150,000.

Physicians themselves are to blame. When the irregular, fantastic and pernicious cults began to make their appearance, they paid no attention to them. They thought that these cults amounted to nothing, and would soon dry up and shrivel away of themselves. When the malicious attacks began to appear in the various quack publications, physicians remained silent. They considered it *infra dignitatem* to pay attention to them, and thought that the public would have no difficulty in seeing through their falsity and meretriciousness.

This long and patient inactivity has been due to the false idea that the truth will always triumph and error is bound to die. Yes, eventually. But if error is allowed to grow and spread unhampered, while those who see the truth will not

take the trouble to proclaim it and expose the error, then it may take centuries before the correctness of the truth and the falsity of the error will be perceived.

In this as in every line of human activity prevention is immeasurably superior to cure, and the right way to fight is not to permit it to get a firm foothold. Error and superstition are hard things to uproot after they have attained the dignity of a universal belief.

It is time that the medical profession change its tactics and assume a wide-awake, militant attitude. It is time that physicians actively attack error wherever it shows its head. By reading papers before lay audiences, by participating in discussions, by writing to the newspapers, by refuting the false arguments of false prophets wherever they appear, they can do much toward destroying the influence of the quacks and the irregular cults. In short, medical men must throw off their exclusiveness, and must go out to the public and take it into their confidence.

The truth is with physicians—that they know; only they must not hide their knowledge under a bushel, and expect that without any effort on their part its light will penetrate into the darkest recesses of ignorance and quackery.

W. J. ROBINSON, M.D., New York City.

Reporting the Case of Another

To the Editor:—I wish to call attention to the reporting of cases that do not belong to the one reporting them, and to protest against the practice. THE JOURNAL (Dec. 31, 1910, p. 2296), contains an article entitled “A Case of Diaphragmatic Hernia.” The patient referred to entered my service at Cook County Hospital, Chicago, and was operated on by me for obstruction of the bowels. The case report has been published without my knowledge or consent.

LAWRENCE RYAN, Chicago.

[A proof of the above letter was sent to Dr. Bamberger, who replies:]

To the Editor:—In reply to Dr. Ryan’s letter the full facts of the matter are all that I want to state. On July 24, 1910, the patient in question entered the surgical service of the Cook County Hospital, of which I was senior resident surgeon, and Dr. Ryan, staff surgeon. I made the diagnosis of intestinal obstruction, and urged immediate operation. With Dr. Ryan, I participated in the operation, and I had full charge of the entire tedious postoperative treatment. Six months elapsed and no report of the case had been made, and I did not think that any objection would be made to my reporting it, since I was so closely connected with it. If I have unintentionally slighted Dr. Ryan, I take this means of asking pardon, and I am most willing to have Dr. Ryan, if he so desires, be given his share of credit in the report of the case. You will favor me by publishing this letter in the JOURNAL.

ARRIE BAMBERGER, Chicago.

Anesthesia in Traumatic Surgery

To the Editor:—The discussion under the above heading (THE JOURNAL, December 24, p. 2226), is a matter of very great importance to the surgeon, and has a bearing on the little-understood condition designated as shock. This condition, I believe, is sometimes misnamed, and does not receive the attention it should at the hands of the investigator.

In my earlier years I used chloroform almost exclusively, and my experience agrees with that of Dr. Lathrop, in that many patients showed improvement, as to shock, shortly after the anesthetic had been started. This occurred oftener with chloroform than with ether. I nearly always operated at once, without waiting for shock to pass off. This was done on the theory that the general anesthetic should relieve the shock, by narcotizing the receptive apparatus. Crile’s nerve blocking has the same end in view, differing only by narcotizing the nerve, to prevent transmission of the painful impressions; and as is well known only large nerves may be thus blocked, while many smaller nerve fibers, not being blocked,

may to some extent at least defeat this object. Given a traumatic injury, with coincident loss of blood and the patient apparently in shock, how much of his condition is due to loss of blood, and how much to true shock?

A case in point: I have now a convalescent patient who was brought into the Allegheny Heights Hospital in an unconscious condition; leg was badly crushed, pulse small, rapid and thready. I amputated the leg without an anesthetic, which procedure did not add at all to the shock, because loss of blood was a greater factor in this case than pure shock. This is a point in which I hope this communication may arouse some interest.

On a purely theoretical basis one has difficulty in understanding just how chloroform or ether could add to shock. They are both supposed to owe their anesthetic action to their ability to dissolve out lecithin from the brain cells, the details not being well understood. Practically, the fact remains, that too much anesthetic is a bad thing. When the times comes, that the same care is exercised in the selection of skilled anesthetists, and the same position given them, as to responsibility, etc., that is attached to the surgeon, then we may expect better results, not only in traumatic surgery, but in all surgery.

IRVIN HARDY, M.D., Davis, W. Va.

The Culture of Cancer Cells in Vitro

To the Editor:—In THE JOURNAL (Oct. 15, 1910, p. 1379; Oct. 29, 1910, p. 1554, and later), Carrel and Burrows have published reports of very interesting experiments on the growth of normal and pathologic tissues outside of the body and on the culture of cells.

I desire to inform the American medical public that on Dec. 10, 1909, I communicated to the Royal Medical Academy of Turin (*Gior. d. r. Accad. di med. di Torino*, 1909, No. 12) that I obtained in a semihardened horse-serum medium a development *in vitro* of mouse adenocarcinoma fragments. A second report on the same subject was made on March 11, 1910, and the results of several experiments were published in the Italian medical periodical *Pathologica* (Oct. 15, 1910). In the first communication I reported that small fragments of cancer placed in the serum had enlarged and changed their form after from ten to eighteen days and that at the microscopical observation a number of well-preserved elements and of karyokinetic features were seen. In the second report I was able to confirm this fact and to report karyokinetic features demonstrated after the tissues had been seventy days *in vitro* (37 C.). In the note published in the *Pathologica* I wrote that fragments kept under those conditions were really alive, because they could be grafted into fresh animals.

I am very glad that Drs. Carrel and Burrows have independently obtained the same results that I obtained and have been able to extend their experiments so as to get cultures in series. I am going on with my researches, from which I hope I shall obtain new results that may extend those I have already obtained and confirm the American observations on the possibility of the transplantation in series.

DR. GUIDO VOLPINO, Professor of Bacteriology.

Turin University, Turin, Italy.

Work in Treatment of Neurasthenia.—In treatment of chronic neurasthenics who are strong enough to undertake some employment, work of some sort should be employed regularly and systematically. It is desirable to get out of the channel in which the patient has lived and to start him in some new occupation. Individuals differ greatly in the amount of work they are able to perform, and it is quite as important to grade the amount of manual labor as the dosage of any remedy that is administered. Whether we employ indoor or outdoor work, and whether it be for diversion or as a training toward a means to gain a livelihood, the main object is "to train the patient's mind to run naturally in a different channel. It is not so much the work as the way one inspires the person to take it up. That form of work, however, is best which interests the patient and leads him on to more and more thought of things outside himself."—W. N. Thompson, in *Yale Medical Journal*.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDICAL JOURNALS OF LATIN AMERICA

To the Editor:—Kindly submit to me the names of South American medical journals, preferably of Brazil or Argentina.

G. H. REINHARDT, St. Louis.

ANSWER.—The following are some representative South American, Mexican and Cuban journals:

Revista de la Sociedad médica argentina. Buenos Aires, Argentina. Published three times a year. Address E. Spinelli, 737 Callao, Buenos Aires, Argentina.

Semana médica. Subscription \$5.00. Weekly. Address Emilio Spinelli, 737 Callao, Buenos Aires, Argentina.

Brazil-Médico. Subscription 20 milreis (about \$11), including postage. Weekly. Address Dr. Bulhoes Carvalho, 140 Rua do Rosario, Rio de Janeiro, Brazil.

Gazeta médica da Bahia. Subscription 12 milreis (about \$6.60). Address Dr. Oscar Freire, Rua do Garcia n. 190, Bahia, Brazil.

Repertorio de medicina y cirugía. Subscription \$3. Address Dr. J. M. Montoya, Apartado 102, Bogota, Colombia.

Crónica médica. Price 6 soles (about \$3.00), including postage. Semi-monthly. Address Dr. E. Bello, Apartado 50, Lima, Peru.

Revista médica del Uruguay. Subscription \$5.00. Monthly. Address L. Danieli, Calle Arapey 106, Montevideo, Uruguay.

Memorias do Instituto Oswaldo Cruz. Published at irregular intervals. Address Directeur de l'Institut Oswaldo Cruz, Caisse postale 926, Manguinhos, Rio de Janeiro, Brazil.

Revista de medicina y cirugía. Semi-monthly. Subscription \$4.50. Address Dr. J. F. Arteaga, Apartado 155, Havana, Cuba.

Prensa médica. Monthly. Address Dr. Enrique Nunez, Teniente Rey 41, Havana, Cuba.

Crónica médica mexicana. Subscription \$2. Monthly. Address Dr. Enrique L. Abogado, Plaza de San Juan, num. 38, City of Mexico.

PERIODICALS ON OBSTETRICS

To the Editor:—Please give me the names of some good American and British journals on obstetrics and inform me where subscription should be sent, etc.

WALTER HIGGS, M.D., Eveleth, Minn.

ANSWER.—*American Journal of Obstetrics and Diseases of Women and Children*. Monthly; subscription \$5. Published by Wm. Wood & Co., 216 York Street, York, Pa.

Surgery, Gynecology and Obstetrics. Monthly; subscription \$5. Published at 103 State Street, Chicago.

Journal of Obstetrics and Gynecology of the British Empire. Monthly; subscription in United States, 26 shillings, including postage. Published by Sherratt & Hughes, 33 Soho Square, West, London.

PROPORTION OF SODIUM GLYCOCHOLATE AND TAUROCHOLATE IN BILE

To the Editor:—In what proportion do the bile salts sodium glycocholate and taurocholate exist in bile?

F. S. SCHMIDT, Roxbury, Mass.

ANSWER.—The proportion of taurocholate to glycocholate is variable. According to the analyses of Hammersten, it varied between 1 of taurocholate to 2.07 of glycocholate and 1 of taurocholate to 14.36 of glycocholate. The total amount of bile salts varied in three analyses between 9.04 and 18.240 per thousand. In the bile of animals the proportion is also generally variable. In the carnivora usually sodium taurocholate is the predominant bile salt. In many of the herbivora the glycocholate predominates, and in swine it is found almost to the exclusion of the taurocholate.

POTASSIUM CYANATE AND THE BLOOD

A correspondent wishes the reference to an article, which he thinks was published in THE JOURNAL some time ago, reporting experiments on dogs to ascertain the action of potassium cyanate on the blood. We fail to find such an article in the index. The drug was perhaps mentioned incidentally in the text, but was not considered of sufficient importance to be named in the title. Perhaps some of our readers can render assistance.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Jan. 7, 1911.

Woodall, Wm. P., captain, left Ft. D. A. Russell, Wyo., on 30 days leave of absence.

Banister, John M., col., is retired from active duty.

Barney, Chas. N., major, is retired from active service.

Davidson, Wilson T., captain, granted leave of absence for three months.

Krebs, Lloyd Le R., captain, ordered to report to Lt. Col. James D. Glennan, Med. Corps, Pres. Examining Board, San Francisco, for further examination to determine his fitness for promotion.

Nolven, F. Homer, D. S., left temporary duty at Ft. Ward, Washington, en route to Ft. George Wright, Wash., for temporary duty.

Allen, John H., major, leave of absence for 10 days, extended 10 days.

Harris, Herbert L., M.R.C., order relieving him from duty at Ft. Snelling, Minn., and directing him to proceed to the Philippines Division, for duty, is revoked.

Scott, H. O., D.S., Jan. 4, relieved from duty at Ft. Hamilton, N. Y., and ordered to San Francisco. Dent. Surg. Scott on expiration of leave of absence to report to S. G. for annulment of contract. Granted one month and 10 days leave of absence.

Mason, George L., D.S., reports for temporary duty at Ft. Missoula, Montana.

Wing, F. F., D.S., left Ft. D. A. Russell, Wyo., en route to Ft. Crook, Nebraska, for temporary duty.

Ebert, Rudolph G., lt.-col., relieved from duty as chief surgeon, Dept. of the Columbia, and ordered to San Francisco, for duty as chief surgeon, Dept. of California, relieving Lt.-Col. Chas. M. Gandy, Med. Corps, and in addition to that duty Lt.-Col. Ebert will assume the duties of medical superintendent, Army Transport Service, San Francisco. Lt.-Col. Gandy after being relieved will proceed on transport to sail from San Francisco, about March 5, 1911, to Manila, P. I., for assignment to duty in Philippines Division.

McAlister, John A., Jr., D.S., on arrival at San Francisco, will proceed to Ft. Leavenworth, Kansas, for duty at that post.

Leslie, Samuel H., D.S., relieved from duty at Ft. Leavenworth, Kansas, and ordered to sail on transport leaving San Francisco, about March 5, 1911, to Manila, P. I., for assignment to duty in the Philippines Division.

Smith, Herbert M., captain, honorably discharged from the service of the United States.

Medical Corps, U. S. Navy

Changes during the week ended Jan. 7, 1911.

Smith, H. L., passed asst-surgeon, ordered to the *Hancock*.

Higgins, M. E., passed asst-surgeon, detached from the naval proving ground, Indian Head, Md., and ordered to temporary duty at the Naval Medical School, Washington, D. C.

Phelps, J. R., asst-surgeon, detached from the *Solace* and ordered to the *Vermont*.

Brown, E. W., asst-surgeon, detached from the *Vermont* and ordered to the naval proving ground, Indian Head, Md.

Foster, T. G., passed asst-surgeon, detached from the naval hospital, Canacao, P. I., and ordered to the *New Orleans*.

Hathaway, G. S., passed asst-surgeon, detached from the *New Orleans* and ordered to the naval station, Olongapo, P. I.

U. S. Public Health and Marine-Hospital Service

Changes for the fourteen days ended Jan. 4, 1911.

Anderson, J. E., P. A. surgeon, directed to proceed to Philadelphia on special temporary duty.

Irwin, M. H., A. A. surgeon, granted seven days' leave of absence from Dec. 24, 1910, under paragraph 210, Service Regulations.

McMullen, John, P. A. Surgeon, granted fourteen days' leave of absence from Dec. 30, 1910.

Board of medical officers convened to meet at the Marine Hospital, Stapleton, N. Y., as soon as practicable, to make medical survey of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Anstin, chairman; Passed Assistant Surgeon W. A. Korn, recorder.

Society Proceedings

COMING MEETINGS

Am. Med. Assn. Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.

Assn. of American Medical Colleges, Chicago, February 27-28.

Natl. Confed. of State Med. Exam. and Licg. Bds, Chicago, Feb. 28.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-Third Annual Session, held at Nashville, Tenn., Dec. 13-14, 1910

(Concluded from page 63)

Stone in the Ureter

DR. R. C. BRYAN, Richmond, Va.: The size, number, and location of the stone having been accurately determined, the treatment resolves itself into one of two methods: (1) ureteral catheterization and lavage; (2) operation. It would seem advisable in small stones, and those located in the lower segment of the ureter, to attempt by ureteral catheterization and injection to dislodge them. This will likely occur in a fair percentage of instances. It occurred in four of my eight cases. If this method fails, operation is indicated. I have done only

the extraperitoneal operation. It does not appear that the intraperitoneal or combined method offers any advantage which would justify the possibility of peritoneal infection by urine leaking from a suppurating tract. An incision starting midway between the highest point of the crest of the ilium and the eleventh rib, and running to the anterior superior spine of the ilium, thence parallel with and internal to Poupart's ligament for its outer three-fourths, has in my series given sufficient opening to explore the ureter from the kidney above to the bladder below. In those instances in which the stone is incarcerated in the intravesical segment, the incision may be carried down to the spine of the pubes, thus giving all the room desired. The ureter is cut through its long axis and the stone removed. Catgut sutures approximate the wound, and a tube is inserted to the site. In my series there was leakage in but one case for five days, the remainder giving none at the end of two days.

The Early Diagnosis and Treatment of Renal Tuberculosis

DR. J. M. MASON, Birmingham, Ala.: Renal tuberculosis is, in the beginning, a unilateral infection and may remain so for a long time. For successful treatment the patient should reach the surgeon while the disease is still confined to one kidney. The early symptoms are rarely referred to the kidney, but in a large percentage of cases are vesical and may remain so for many months. Repeated examinations should be made for the detection of tubercle bacilli in the urine, and often the inoculation of guinea-pigs should be resorted to. The cystoscope and ureteral catheters must be made use of to ascertain the condition of the bladder and to determine which kidney is the seat of disease, also for the purpose of ascertaining the organic and functional condition of the second kidney. The treatment consists of prompt nephrectomy followed by the best hygienic, climatic and dietetic management.

Time and Technic for Cesarean Section

DR. LEWIS S. MCMURTRY, Louisville, Ky., read a paper on this subject which will appear in THE JOURNAL.

Intussusception in the Adult

DR. STEPHEN H. WATTS, Charlottesville, Va.: I have had two cases of intussusception in the adult, one of which was due to multiple adenomata of the intestine, and the other to a sarcoma of the cecum. In the first case it was found necessary at several operations to perform two resections of the intestine with lateral anastomosis, two other lateral anastomoses, and seven enterotomies for removal of the growths. The patient was perfectly well when seen about a year after the last operation. In the second case, after reducing the intussusception, the sarcoma was removed with an elliptical portion of the wall of the cecum, and the patient made a good recovery.

Complications Due to Operative Procedures

DR. L. E. BURCH, Nashville, Tenn.: Many of the accidents following operations are preventable. No operation should be advised, however trivial in character, unless there is positive pathology to indicate its performance. No operation should be carried out, either under local or general anesthesia until a careful history of the case is obtained, including a thorough physical examination, with urinary and blood findings. Better results would be obtained and fewer accidents would happen if patients are given preliminary treatment before operation. Surgeons should never state to patients that any operation is free from danger.

Formation of a New Vagina

DR. ALEXANDER HUGH FERGUSON, Chicago: I do not claim to produce a normal vagina, still in two of my three cases a vagina has been formed. The technic of the operation varied slightly in each case, but the underlying principles were the same, namely, first, to utilize the available mucous membrane; second, to form three flaps; third, to tunnel through behind

the bladder and in front of the rectum, dissecting the peritoneum from both structures without opening the peritoneal cavity; fourth, to invert the flaps into the tunnel thus formed and suture them in place with catgut. The lateral flaps include the mucosa of the labia minora on either side, exercising care not to interfere with the mucous membrane in connection with the clitoris and meatus urinarius. The flaps are cut as thick as possible in order not to interfere with nutrition. The fact that the flaps are not sutured together renders the cavity dilatable. Horsehair is used to close over the denuded areas. A roll of gauze about seven inches long is anointed with sterile petrolatum and zinc oxid and inserted into the plastic vaginal canal. The external end spreads like a flange and is held in place by a firm pad. It must not fit too tightly. The initial dressing must not be withdrawn for six or eight days. The parts must be kept as aseptic as possible. The internal stitches are catgut and may be left to become absorbed. The horsehair should be left in place for two weeks. Absolute cleanliness without antiseptics is of primary importance. The patient must remain under observation for at least three months.

The Treatment of Antelexion

DR. HENRY T. BYFORD, Chicago, read this paper, which will appear in THE JOURNAL.

Complete Transverse Destruction of the Spinal Cord

DR. RANDOLPH WINSLOW, Baltimore: In this case there was complete transverse destruction of the spinal cord from pistol wound, without penetration of the spinal canal. In two cases of pistol wound of the dorsal vertebrae the cord was not injured by direct impact of the bullet, but in both paralysis and the usual signs of a transverse destruction of the cord immediately supervened, proving fatal in one case, which came to autopsy and the bullet was found lodged in the second dorsal vertebra, but not penetrating into the spinal canal or impinging on the cord. The other case presented similar symptoms and was submitted to laminectomy, but the cord was not divided nor could the missile be found. The patient is still living, but is in a very precarious condition, with absolute paralysis below the eighth dorsal vertebra. These cases were probably due to concussion of the cord. Serious and even fatal lesions of the spinal cord may be produced by concussion, without direct impact. In gunshot injuries with a probability of a complete severance of the cord, laminectomy should be performed, foreign bodies and clots removed, bleeding arrested, and if the cord has been divided, the separated ends should be approximated with sutures. Care should be exercised not to destroy any nerve fibers or tracts which may still be intact.

Unusually Large Ovarian Cyst

DR. J. SHELTON HORSLEY, Richmond, Va.: The cyst in this case weighed 116½ pounds. It was successfully removed. The greatest abdominal circumference was sixty-three inches. Operation in these cases of large ovarian cysts usually has a high mortality rate on account of the pressure which causes organic changes and makes the patients poor surgical risks.

DISCUSSION

DR. THOMAS S. CULLEN, Baltimore: Four and a half years ago I saw a patient who weighed 174 pounds. She was supposed to have an ovarian cyst, but it turned out to be a fibroid tumor. We operated, removed an 89-pound fibroid, and the patient immediately after operation weighed 85 pounds. After a week in the hospital, when edema began, she weighed 80½ pounds, and although she developed bed sores she promptly recovered.

DR. ALEXANDER HUGH FERGUSON, Chicago: I was once called to see a woman with a large ovarian cyst. She had carcinoma of the left breast and gall-stones. She was in a bad condition. I introduced a small trocar and cannula which went into a cyst that was quite watery. The trocar was left in place for twenty-four hours. The next day she could eat,

a thing she had not been able to do for two weeks, and she could swallow. Her heart, which was bad, improved. I passed a larger trocar in another direction through the same opening, and allowed it to remain for another twenty-four hours, and then she was brought to Chicago. Three days later I operated and at one sitting removed the cyst, the left breast, and 1,250 gall-stones from the gall-bladder. She recovered.

A Malignant Intestinal Growth Requiring the Removal of an Unusual Number of Abdominal Structures

DR. THOMAS S. CULLEN, Baltimore: The patient was 56 years of age, very pale and emaciated. Pelvic examination revealed a growth on the posterior surface of the uterus. This almost filled the pelvis and felt very much like a myoma. The patient, however, gave a history of flattened stools occasionally associated with diarrhea and a malignant intestinal growth was suspected. On opening the abdomen I found a growth involving the lower portion of the descending colon, also a loop of small bowel, and extending out and forming a tumor mass in the mesentery of the small bowel. Intimately blended with this tumor mass was the uterus. The appendix was also involved. As no secondary nodules could be found either in the mesentery, in the lymph glands, or in the liver, removal was undertaken. The uterus was amputated through the cervix and with the tubes and ovaries turned up on the surface of the tumor. The appendix was next amputated, carefully covered over with gauze and also turned up on the tumor. About three feet of small bowel and almost a foot of large bowel were then clamped off and the mesentery of the small bowel containing the tumor was gradually tied off. All the structures mentioned were removed in one piece, as it would have been absolutely impossible to separate the uterus without entering the cancerous mass and opening up the bowel. It was possible to remove the entire mass without soiling the peritoneum. The four ends of the bowel were closed. A lateral anastomosis was then made between the small bowel and the cecum, and as the descending colon had been redundant it was possible to do a lateral anastomosis between the descending colon and the sigmoid. A drain was laid in the pelvis. The patient made a very satisfactory recovery and is at present in good health. The ultimate outlook is not a favorable one.

Goiter Operations

DR. JOHN R. WATHEN, Louisville, Ky., described an improved technique in goiter operations, an abstract of which appeared in THE JOURNAL, Jan. 29, 1910, p. 409.

Collapse of the Trachea While Performing Thyroidectomy

DR. T. C. WITHERSPOON, Butte, Mont.: Twice during the last fourteen months has the trachea collapsed while I was performing a thyroidectomy for exophthalmic goiter. Predisposing causes of collapse of the trachea are the anatomic defect in the rings posteriorly, and the proximity of the recurrent laryngeal nerve to the thyroid gland. The one prophylactic measure which I suggest as a means of avoiding pressing on the trachea is a para-sternoceleido-mastoid incision. This enables the operator to raise the gland out of its bed without medianward pressure of appreciable degree. While working out the problem of removal of the thyroid under local anesthesia, I found it very much easier to do so by the paramuscular than by the collar incision. Manipulation was easier and discomfort minimized.

Catheterization of the Common Duct for Enteroclysis in Toxic Biliary Cases

DR. RUDOLPH MATAS, New Orleans: I am convinced that this constitutes one of the most valuable therapeutic assets in dealing with the dangerous postoperative complications of biliary cases. I have had occasion to try it in a case of choledochus drainage after cholecystectomy for gangrenous and perforated gall-bladder. Notwithstanding the excellent effect of the duodenal infusion on the circulation, the patient succumbed on the fifth day from the effects of general peritoneal

sepsis and exhaustion due to secondary pulmonary infarcts. I have also applied it in three other cases of persistent biliary fistula after cholecystotomy for multiple calculi and cholecystitis. In these cases there resulted a rapid cure of the fistulae after repeated catheterization of the biliary tract, including the duodenal orifice of the common duct. I have injected the fluid directly into the duodenum by introducing a catheter through the gall-bladder opening into the common duct and then into the duodenum. For this purpose, I have found nothing so effective as a ureteral catheter, beginning with a fine bougie and gradually dilating with the catheters until the number three of the French scale has been reached.

Treatment of Acute Intestinal Obstruction

DR. JOHN YOUNG BROWN, St. Louis: An analysis of the records of fifty-nine cases of acute intestinal (mechanical) obstruction, coming under my care, with the view of ascertaining the treatment received in each case prior to operation and the bearing this treatment had on the mortality has convinced me that the general profession has yet to appreciate that acute intestinal block is one of the gravest and most disastrous surgical emergencies, and that the outcome of a given case depends largely on the time elapsing between the development of the condition and its relief by surgical interference. Of the fifty-nine cases, twenty-seven required primary resections for gangrene of the bowel. All of these cases, except one, resulted from strangulation due to hernia, the exception being due to a gangrenous intussusception. Of these twenty-seven patients, five died, a mortality of about 20 per cent. In twelve cases the formation of an artificial anus was necessary. Three of these were for strangulated umbilical hernia, four for strangulated inguinal hernia, and five for acute obstructions due to malignancy. Of these twelve patients, six died, a mortality of 50 per cent. Twenty cases of strangulated inguinal hernia in which the contents of the sac were such that they could be returned to the abdomen resulted in the loss of one case, a mortality of 5 per cent. The total mortality in the fifty-nine cases was a little over 20 per cent. The history of each case showed that temporizing methods were resorted to prior to operation, the cases being referred for operation as a last resort. In the treatment of gangrenous bowel found in the sac of a femoral hernia, I strongly advocate the use of a supplementary abdominal incision as possessing many advantages when it becomes necessary to resect the intestine. In the postoperative treatment, I advocate frequent washing of the stomach, the withholding of food by the mouth, and the use of salt solution both under the skin and in the rectum, and I condemn the use of morphia and strychnin. In cases in which an artificial anus has been made, I urge the importance of attention to the passive bowel. Failure to attend to this point in the after-treatment can result in a contracture of the small bowel to such an extent that it will complicate the work of restoring the intestinal continuity.

The Causal Relationship Between Injury and Cancer

DR. WILLIAM B. COLEY, New York: In 236 (26 per cent.) of 910 cases of sarcoma seen by me there was a definite history of antecedent trauma. The interval elapsing between the injury and the development of the cancer was less than two weeks in sixty-three cases (27 per cent.); less than a month in ninety-seven cases (42 per cent.); tumor occurred within the first six months in 137 cases (60 per cent.). The disease originated in the bone in 111 cases (47 per cent.) and in the soft parts in 125 (53 per cent.). In 125 cases of carcinoma of the breast there was a definite history of previous injury in fifty-two cases (41 per cent.). In five of these the tumor was noted within a week after the injury; in twelve within the first few weeks; in nineteen within the first month, and in thirty-six within the first six months. Three cases fulfill the strict, scientific test which Segone requires, namely, that a medical examination has been made of the parts by a competent surgeon prior to the accident. I believe more strongly with increasing experience that all types of malignant tumors are of extrinsic origin or parasitic.

Volvulus of the Cecum

DR. HORACE J. WHITACRE, Cincinnati: I have seen four cases of volvulus of the cecum. In one case a very movable cecum and ascending colon had passed over in front, completely around and behind the mesentery of the small intestine, and reappeared in the right side. This patient had suffered three previous similar attacks of obstruction of the bowel which had been relieved by enemata and position. This patient recovered after operation. Cases two and three represented volvulus of the cecum and ascending colon alone, gangrene having occurred in both. One of these patients recovered. A fourth patient suffered from volvulus of the cecum and ascending colon, was operated on in a very few hours, and made a prompt recovery. Volvulus of the cecum is among the least frequent causes of intestinal obstruction. It has occurred at all ages from 16 days to 80 years. The symptoms, as a rule, do not differ widely from those of intestinal obstruction from other internal cause. The mortality is very high even in the cases operated on (52.2 per cent.). The mortality in my group of cases was 25 per cent.

Pylorospasm

DR. STUART MCGUIRE, Richmond, Va.: Spasm of the pylorus is not a disease but a symptom. It may be caused by rapid eating, by indigestible food, by an ulcer or other lesion of the stomach, but is most frequently the expression of some remote abdominal disease. How appendicitis or cholecystitis causes gastric symptoms has never been satisfactorily explained. It is believed that irritation transmitted to the stomach through the sympathetic nervous system causes an excess secretion of hydrochloric acid. The resulting hyperchlorhydria causes spasm of the pylorus; the pylorospasm causes retention of food beyond the physiologic limit, and finally there comes motor insufficiency, food stagnation and dilatation of the stomach. The most prominent symptom of pylorospasm is a cramping pain in the epigastrium, which may last only a few minutes or may continue for several hours. In some cases the spasm may relax suddenly; in others it may terminate slowly and gradually. Some patients have attacks several times a day; others at intervals of weeks; and others still only once or twice a year. In the interval between attacks the digestion may be normal. During attacks peristalsis of the stomach is increased, but food cannot pass through the pylorus, and often relief comes only after vomiting. The patient usually diets strictly, and loses flesh and strength steadily from starvation and auto-intoxication. In no other case of patients, with possibly the exception of epileptics, is it necessary to be so thorough in preliminary examination and so patient in postoperative treatment. The real cause of the condition must be found, and after it has been removed the patient must be systematically treated until the hypersensitiveness of the pyloric muscle is relieved, and its spasm habit overcome.

Tumors of the Jaw

DR. WILLIS F. WESTMORELAND, Atlanta, Ga.: So far as my clinical experience goes this type of tumor has practically disappeared. I have not seen one in years. It seems to have occurred almost exclusively in the negro. In thirty-eight cases operated on by my father, only one was white. In the five cases coming under my observation, all were in the negro. Among us these cases were known as fibro-cystic tumor; this title very closely describes the gross clinical appearance of the tumor. It seems to conform more closely to the species of follicular odontoma of the genus odontomata in Bland Sutton's classification. I would class it as an anomalous form of this species. I should judge they belong to the follicular rather than the epithelial odontoma, although they have never shown malignancy, while the epithelial type occasionally does. Clinically the tumors present a uniformly well-rounded mass, the surface of which feels hard and dense to the touch. Firm pressure on the tumor with the fingers will always at some point elicit a distinct crackle; this is characteristic and is in a way diagnostic, though not differentially so as it occurs in other species of odontomata.

Transfusion in Pellagra

DR. H. P. COLE, Mobile, Ala., presented a review of twenty cases of this disease. His article will appear in THE JOURNAL.

Other Papers Read

The following papers were also read: "Hydatid Cyst of the Liver, Successfully Treated by Operation," Dr. John C. Oliver, Cincinnati; "Diagnosis of Extrauterine Pregnancy," Dr. E. Gustav Zinke, Cincinnati; "Position for Saving Time in Combined Abdominal and Pelvic Outlet Operations," A. C. Scott, Temple, Tex.; "Omentopexy," Dr. Maurice H. Richardson, Boston; "Tumors of the Breast," Dr. Wm. C. McCarty, Rochester, Minn.; "Aneurysm," Dr. J. G. Sherrill, Louisville; "Hypernephroma Arising in the Right Testicle," Dr. James E. Thompson, Galveston, Tex.; "Degeneracy, the Underlying Cause of Disease; How the Unfit Perish," Dr. Chas. P. Noble, Philadelphia; "Cysts of the Pancreas," Dr. R. B. Hall, Cincinnati.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Nov. 23, 1910

The President, DR. HENRY LEFFMAN, in the Chair

The Pathologic Chemistry of Diabetes Mellitus

DR. A. G. ELLIS: The hyperglycemia and glycosuria of diabetes mellitus are due either to overproduction of glucose by the liver or to an underconsumption of that substance by the tissues, the former possibly the chief of the two. This perversion of metabolism appears due either to the failure of substance produced normally by the pancreas, muscles, and possibly other tissues, or to an affection of the central nervous system. The acidosis of diabetes is due to the abnormal metabolism of fats and possibly proteins as carried on in the absence of sufficient carbohydrates. Determination of acetoneuria appears to be the most satisfactory clinical method of estimating the degree of acidosis.

The Functions of the Stomach in Diabetes Mellitus

This article by Dr. John J. Gilbride will appear in THE JOURNAL.

The Cold Cautery; Carbon-Dioxid Snow

DR. L. D. FRESCOLN: In making profound impressions of cold, we have a rapid method in the use of carbon-dioxid snow, what I call the "cold cautery." With varying degrees of exposure and under regulated amounts of pressure it causes hardening, bleaching, vesication (like extreme frost-bite) and finally crusting and at times a pliable scar. It is used successfully in treating moles, nevi, warts, senile keratosis, lupus erythematosus, lupus vulgaris, trachoma and some forms of epithelioma of the skin. It is to be applied from 10 to 40 seconds, often with considerable pressure. It is well for the operator to protect his own fingers during the application. We should not treat a large area at one sitting, particularly on the cellular tissue about the eye. The temperature of the solid stick is 79 C. and this may be reduced by dipping in ether. Cases of keratosis senilis, thought by the patients to be malignant and lasting many years, have disappeared completely in from one to three treatments, and this sometimes, when the Roentgen rays have made little improvement. The proper cases should be chosen for this particular treatment. It should be tried in the future on keloids. Its advantages are: It is cheap; easy to control; prompt in action. Portable tubes are used for office practice. A summary of its action may be quoted as (1) stimulating; (2) destructive; (3) immediate destruction. Further study is needed on this form of treatment to reach its possibilities.

DISCUSSION

DR. HENRY KENNEDY GASKILL: We have had experience with the "cold cautery" in fifty or sixty patients in the past three years at the Jefferson Hospital with most gratifying results. Included in this series were cases of lupus erythema-

tosis, pigmented moles, capillary nevi, small epitheliomas and tattoo marks. In many cases of nevi, the electric needle was supplemented, for small areas left between applications are difficult to treat otherwise. When the trouble is deep-seated the exposures must be from one minute to one minute and twenty seconds, and we have found that if given in applications of twenty seconds and in two days afterward another application of thirty seconds the resulting scar will be less, though the pain is more. In small pigmented moles the electric needle is still preferable, as often the pigments will be disseminated in a ring around the area. Dr. Stelwagon has adopted a little apparatus consisting of a small metal tube filled with carbon dioxid and a rubber tube with stop cock, originally intended to be sold for the inflation of automobile tires. This tube is about 12 inches long, having a copper cap, which has to be punctured to allow the escape of gas which is collected in a piece of kid firmly bound down with adhesive strips. The snow can readily be molded by hand and with a knife cut in any desired size or can be pressed into an ear speculum. It is wise to measure the area to be treated in order that the surrounding skin may not be involved while the snow is melting under pressure. The larger tubes that are used in drug stores are unsightly as well as awkward to handle and there is some risk of their exploding. This little tube is neat, readily handled and can be carried to the patient's house if desired.

DR. M. B. HARTZELL: I have used the cold cautery and have found it most convenient in appropriate cases, but it is far from being a cure-all. It is a caustic and can accomplish only that which any other caustic can effect. It acts rather superficially, which limits its usefulness and accounts for the slight scarring which follows its use. Its greatest use is in vascular nevi. I do not believe it to be effective in lupus vulgaris; it does not go deep enough. The small tubes have a certain degree of convenience but they are certainly not cheap. A most convenient way of preparing the gas for use is by making a cylinder of thick blotting paper around a stick, and around this wrapping a towel. After molding the carbon-dioxid in the cylinder it can be withdrawn, when you will have a stick of the cold cautery ready for use. I have not used the cautery in lupus erythematosus sufficiently long to be sure of permanent results. I must take exception to the statement that the temperature of the carbon dioxid is materially reduced by dipping in ether.

DR. FRANK C. KNOWLES: I have employed the carbon-dioxid snow in quite a number of cases and have had the best results in angiomas. The port-wine stains apparently do not respond as well as other discolorations, as do not the very deep-seated angiomas. In cases of lupus erythematosus improvement but not cure has been obtained by this treatment. In the molding of the snow I employ wooden pill-boxes, using the size approximating the area to be treated. When the lesions are small I shape the snow in various-sized ear specula. These simple devices answer admirably, instead of the very expensive and unnecessary appliances so widely advertised.

Treatment of Suppurative Otitis Media (Scarlatinal) by Bacterins

DR. JOHN A. KOLMER and DR. P. G. WESTON read a paper on this subject which will appear in THE JOURNAL.

DISCUSSION

DR. B. ALEXANDER RANDALL: The results reported in this paper represent about half of all the work done on this subject, the aggregate of cases treated elsewhere having been hardly more than the hundred cases reported to-night. I am a believer in the matter, but everything of the sort must be dealt with cautiously. The natural history of the disease must be distinctly taken in mind to estimate rightly the value of any treatment. The success of the treatment, together with the fact that other treatment was withdrawn, gives a strong support to the claims made for it. On the other hand, I cannot refrain from feeling that more can be done in the simple measure of irrigation than has been intimated. If the amount of personal attention requisite in the culturing, etc., were given to the older-fashioned style of treatment we

would have a considerable amount of good results. If a child with scarlet fever or other exanthemata is well protected as to the ears with a nightcap much can be done to forestall trouble. If the case is treated early I think we can bring it to a successful issue in children in fair condition of health, in something like three weeks; I have done it in eighteen days.

DR. B. A. THOMAS: Incidentally I would like to criticize the employment of the term "vaccine." I think it is proper that we should use as nearly as possible scientific terms. The therapeutic agent referred to is merely a suspension of dead bacteria in physiologic salt solution, to which has been added a minute quantity of phenol for preservative purposes; hence "bacterin" is the term which scientifically and properly expresses the nature of the preparation. "Vaccine," the term unfortunately employed by Wright, has by common usage become almost universally popularized, but strictly is a misnomer and should be restricted to the virus used in vaccinia, derived from the cow in accordance with the original suggestions of Jenner. Otitis media can be divided into the acute suppurative, and chronic suppurative varieties for bacterin treatment. The treatment has a definite accessory effect in conjunction with other forms of treatment. Local measures should never be omitted. I feel that bacterin therapy in otitis media has a more restricted field as a therapeutic measure than in the vast majority of affections in which it is commonly used. This is largely due to the fact that the middle ear is encased in a bony cage.

DR. JOHN A. KOLMER: Local treatment in conjunction with the bacterin treatment is advisable if it can be carried out by the physician himself. The average nurse is not able to syringe the ear satisfactorily. We are always careful to see that drainage is free and feel that anything more is unnecessary. The ear is cleansed several times a day and care observed that there is no thickening of the pus leading to retention.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

NEWSPAPER COMMENTS ON A NATIONAL DEPARTMENT OF HEALTH

The proposal to establish a national department of health continues to gain favor among newspaper editors, in spite of the desperate efforts and unlimited expenditures of those having selfish reasons for endeavoring to prevent it. Evidence is not lacking that the prodigal expenditure of money and the unlimited amount of printed matter used in attempting to arouse prejudice against a proposed agency for promoting better health conditions have already caused a reaction, and that the press, as well as the people, is asking what the motives are of those who are ready to devote large amounts of time and money to prevent such legislation. American newspaper men are thoroughly familiar with all the devices of the publicity promoter. They know that only those buy newspaper space and printer's ink who expect to get a return for their money. They naturally assume that the funds for the support of such an expensive campaign come from those who fear they would lose their ill-gotten gains if a department of health, backed by the federal government, should do for the whole people what the Department of Agriculture has done for the farmer. The *Natchez Daily News* in a recent editorial comment says, in part:

NO DEPARTMENT OF HEALTH

"... Thoughtful citizens throughout the country will regret the inaction in a matter of transcendent importance to the people. The opposition to the measure comes from many quarters and for many reasons. Certain alleged schools of medicine are opposed to it for specious reasons, though the real reason is that if we had a department of health, what is known as the 'regular' school of medicine might be represented more

strongly than all others. Since one school represents over 90 per cent of all physicians, there would not be anything unreasonable to have them more numerous represented in the contemplated department of health.

"In other quarters the opposition is based on the ground that a national department of health would in some mysterious manner interfere with the rights of the states in home affairs. This ground is poor at best, and insincere in most cases; . . . The opposition of many well-intentioned men to the establishment of the Department of Agriculture a quarter of a century ago was based on the alleged violation of states' rights; however, states' rights or no rights, the Department of Agriculture is doing a very useful work, and its agency for good is no longer a matter of dispute. The most fanatical states' rights men do not hesitate to work tooth and nail for the improvement of rivers in their districts, and for the increase of the powers of the Interstate Commerce Commission, the states regulation not being sufficient.

"The real opposition is chiefly due to the wilful ignoring of the fact that human health and life should be the first care of the state and of the legislator. The most freely moving object between states is man, and yet less is done to control human disease and to gather statistics concerning his birth, life and death than is done for cattle. We resort to the federal government to eradicate the tick in cattle or cholera in hogs, yet, according to some Democrats, states' rights are in the way when it comes to the establishment of a Department of Health. No doubt, such a department will be established some day, . . . when the general interest in the welfare of our children will at least equal that in the thriving of our pigs. Some day when the real concerns of the people will receive as much attention as politics, we may have a department of health."

The argument of the *News* effectually disposes of the states'-rights objector. Coming from a southern newspaper of influence, this statement is significant, yet it is no more than is to be expected. The southern states have learned the value of federal aid in the suppression of epidemics and the preservation of life. The advocates of states' rights in public health matters will not come from the south.

Equally significant is a recent editorial comment of the *Boston Advertiser*, which considers the question from an economic and social standpoint; and particularly worthy of note is the emphasis laid on the necessity of public opinion in the protection of public health. The *Advertiser* says, in part:

"The agitation for a national department of public health, at Washington, is based on some sound and able arguments, including that of economy in public service. There has been plenty of misdirected effort in the confusion which arises from the existence of so many branches of sanitary service, under the direction of different departments or bureaus of the government service. It would be possible to secure greater efficiency with striking economy, as compared with existing conditions, if the work were all placed under the control of a single department or bureau. . . .

"But the fact remains that the real, vital force that must protect the public health, if it is ever to be protected, will be found in the force of public opinion. If the people will but insist on legislation which will safeguard their interests and their lives, it will be possible for the national and the state departments of health to do what should be done; but that time has not yet come. Perhaps it will never come within the lifetime of this generation. Something may be done, here or there, for the suppression of epidemics, for the elimination of the most evident and most striking dangers to public health; but until the people make it their business to vote at the polls for their own protection against the greed or the indifference which annually sacrifices the lives of tens of thousands, there will be no hope for any adequate protection of the people against the results of insanitary methods in workshops, farms, cities, and country, generally."

The *Chicago Tribune* recently discussed the question editorially from the humanitarian standpoint, laying special emphasis on the unnecessary and avoidable loss of life under existing conditions. Under the heading "American Waste of Life," the *Tribune* says:

"When the federal government appropriated large sums to relieve such distress as was occasioned by the San Francisco or the Messina disaster, every one approved the action with a warm glow at the heart. Such aid is in every way com-

mendable, but it is aid after the fact. . . . Every day of the year there die by preventable diseases or accident a number equal to the full crews of two battleships. For the loss of one such crew we went to war with Spain. Every three months as many lives are sacrificed to those causes as there are men in the United States army. All the dead in every war we have had since 1776 only equal the yearly toll made by disease and accident in this country.

"Last year the entire population of Indianapolis died of degenerative diseases. Tuberculosis swept away every man, woman and child in Paterson, N. J. Pneumonia carried off all of the inhabitants of Wilmington, Del., and every one in Yonkers was killed by an accident. If these things really happened the whole world would be shocked and our government would stop all other legislation to enact laws looking to the prevention of such catastrophes in the future. But because these diseases carry off their victims not all in one place but in many places over the country we do nothing about it.

"President Taft has had this matter much at heart. He favors the proposed department of health and he is quoted as saying: 'There is nothing in the constitution especially about hogs, or cattle, or horses, and if out of the public treasury at Washington we can establish a department for that purpose it does not seem a long step or a stretch of logic to say that we have the power to spend the money in a bureau of research to tell how we can develop good men and good women.' Fear has been expressed that the establishment of a national health department will curtail individual liberty, but the Department of Agriculture has helped, not hurt, the farmer, and that of Commerce and Labor has immeasurably benefited the workingman and the merchant. . . .

"We are prodigal of life in a measure which amounts to impiety. The waste must be stopped, not by leaving it to the doctors but by the establishment of research bureaus, the popular education of the people in sanitary matters, and by the enforcement, when necessary, of laws designed for protection of the public against disease and accidents."

Of the three methods by which the *Tribune* proposes to stop the waste of life, probably all will admit that the second—"the popular education of the people in sanitary matters"—is the most important. So long as the people know no better, they will continue to be duped and misled by the quacks, fakers and swindlers who have preyed on them for years. It is the duty of those who know the facts to place them before the people. As soon as this is done, it will require more than one "national league" to prevent the government from protecting the lives and health of our citizens.

Especially interesting are the editorial comments of the *Chicago Tribune* in a later issue regarding the recommendations on the creation of a bureau of health contained in the President's message to Congress. The *Tribune* says:

"Another well-considered recommendation is that on behalf of the unjustly attacked bureau of health, already recommended in a previous message. The objections raised were partly disingenuous and partly mistaken, and should not be permitted further to postpone the creation of this useful bureau. One of the great public services which it is to be expected will be performed by such an institution is to give effective aid to the proper authorities for the suppression of the criminal traffic in nostrums and dangerous drugs."

In the last sentence of the extract quoted above is to be found the explanation for the opposition to the organization of an efficient federal health department. Those who have fattened for years on public ignorance and carelessness would have the people believe that the medical profession of the United States is composed of political plotters and schemers, endeavoring to advance their own interests at the expense of the public. To avoid the charge of wholesale slander on a profession, they assert that the majority of physicians are unselfish but that they are dominated by a few "political doctors." Truly, the American Medical Association is blessed in the enemies which it has made. No better evidence of the unselfishness of its aims could be asked than the methods and the arguments by which its work is being opposed. Those who favor and are working for a national department of public health should feel under deep obligations to the "National League of Medical Freedom," since this organization is truly educating the public with an effectiveness that leaves little to be desired.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Second Weekly Meeting

PREPARATION OF PATIENT FOR ANESTHETIC

Time of anesthetic. Diet. Clothing. Foreign bodies in mouth. Gavage. Operating room. Position of patient for anesthetic.

CHOICE OF AN ANESTHETIC

IN HEALTHY SUBJECTS: For brief operations, for prolonged anesthesia. Age, sex, pregnancy.

IN DISEASE: Alcoholism, diseases of the respiratory tract, diseases of heart and blood-vessels, renal disease, shock from trauma, collapse from hemorrhage, ruptured viscera, etc.

IN OPERATIVE SURGERY: Operations about head, neck, face, nose, eyes, trachea, thyroid, thorax. In abdominal surgery. In labor.

INDICATIONS AND CONTRAINDICATIONS FOR ETHER AND CHLOROFORM.

ANESTHESIA BY SEQUENCE: Advantages and disadvantages.

SCOPOLAMIN-MORPHIN ANESTHESIA: Status, dangers.

ACCIDENTS DURING ANESTHESIA

SUFFOCATION: Causes and treatment.

RESPIRATORY PARALYSIS: Incidence, causes.

CARDIAC PARALYSIS: Causes, incidence.

TREATMENT: Of cardiac and respiratory failure; artificial respiration, cardiac massage, rhythmic traction of tongue, epinephrin, faradism, amyl nitrite.

SEQUELÆ OF ANESTHESIA: Vomiting. Shock. Post-anesthetic and central anesthetic palsies. Lung complications. Renal complications. Delayed chloroform poisoning.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: State House, Des Moines, February 14-16. Sec., Dr. Guilford H. Sumner.

KANSAS: Topeka, February 14. Sec., Dr. H. A. Dykes, Lebanon.

NEBRASKA: State House, Lincoln, February 8-9. Sec., Dr. E. Arthur Carr.

NEW YORK: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr. Charles F. Wheelock, Albany.

Annual Meeting of National Confederation of State Boards

The National Confederation of State Medical Examining and Licensing Boards has announced that its twenty-first annual meeting will be held at the Congress Hotel, Chicago, Tuesday, Feb. 28, 1911, on the day preceding the conference of the Council on Medical Education. The program will include a symposium on "State Control of Medical Colleges," which subject will be considered from the view points of the state, the law, the college, the licensing board and the medical profession.

Joint Conference on Medical Education and Medical Legislation

The American Medical Association's second joint conference on medical education and medical legislation will be held at the Congress Hotel (formerly Auditorium Annex), Chicago, Wednesday, Thursday and Friday, March 1, 2 and 3, 1911, the first session to begin at 9 o'clock Wednesday morning.

Wednesday, March 1, will be taken up by the seventh annual conference of the Council on Medical Education of the American Medical Association, the program for which will include addresses and reports on preliminary education, the five-year medical course, laboratory facilities and instruction, hospital facilities and instruction, the hospital year, the license examination and reciprocity. For Wednesday evening, an address from some well-known speaker has been planned.

Thursday, March 2, will be devoted to a joint conference on medical practice legislation of the Council on Medical Education and the Council on Health and Public Instruction. The program will include discussions of medical practice laws from the standpoint of the legislator, lawyer, judge and sociologist; also, a discussion of the enforcement of medical practice acts.

Friday, March 3, will be devoted to a conference on legislative matters, including vital statistics, pure foods and drugs, expert testimony, etc.

Reservation of rooms can be made in advance at any of the hotels in the city. The Congress, Auditorium, Stratford and Blackstone hotels are conveniently located on Michigan Avenue within easy reach of the meeting-place.

Tennessee May Report

Dr. C. A. Abernathy, secretary of the State Board of Medical Examiners of Tennessee, reports the written examinations held at Nashville, Knoxville and Memphis, May 3-4, 1910. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 367, of whom 315 passed, including 142 non-graduates, and 52 failed, including 25 non-graduates. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College.....	(1908)		90.6
Indiana Medical College	(1906)		78.7
University of Louisville (1909)	76.2, 84.2; (1910)	79.4, 80,	83.1,
	83.9, 84.7, 87.2, 91.2, 91.6.		
Tulane University of Louisiana....	(1903)	88.9; (1909)	90
Univ. of Michigan, College of Med..	(1907)	90.5; (1908)	94.9
Baltimore Medical College.....	(1907)		90.2
University of Maryland	(1909)		80.9
Tufts College Medical School.....	(1897)		92.7
Mississippi Medical College.....	(1908)	85.6; (1910)	76.4, 84.1
Missouri Medical College.....	(1885)		84.2
Leonard Medical School.....	(1909)		82.5
College of Physicians and Surgeons, Memphis	(1907)	75.2; (1910)	78, 80.2, 88.7, 88.9, 90.
Memphis Hospital Medical College	(1899)	83.2; (1901)	80.5; (1908) 82.4; (1909) 78.1; (1910) 75, 76.6, 77.5, 77.7, 79.6, 80.2, 80.7, 80.7, 82.4, 82.6, 82.6, 82.9, 82.9, 83.2, 83.4, 83.4, 84.1, 84.1, 84.7, 84.7, 85.7, 86.2, 86.9, 87.5, 88.2, 88.7, 89, 91.5, 92.2, 92.5, 94.9.
University of Nashville (1902)	80.7; (1907)	93; (1908)	91.4; (1909) 90.4; (1910) 82.5, 83.7, 84, 84, 84.1, 84.2, 85.9, 86.2, 86.2, 86.9, 87.5, 89.2, 89.5, 89.7, 89.7, 90, 90.9, 91.4, 91.7, 92.9, 94.1, 94.1.
University of Tennessee (1907)	83.5; (1908)	77.7; (1909)	79.2; (1910) 85.9.
Meharry Medical College (1905)	87.2; (1906)	77.6; (1909)	79.7, 79.7, 83.4; (1910) 75.5, 78.1, 78.4, 78.5, 80.4, 82.9, 84.2, 84.9, 86.2, 87.4, 87.9, 88.1, 88.7.
Vanderbilt University (1901)	91; (1909)	89, 93; (1910)	83, 87.9, 88.4, 90.1, 90.2, 93.6, 95.1, 95.4.
University of the South (1905)	82.2, 92; (1909)	79.5, 81.1, 81.7,	84.7.
Tennessee Medical College (1904)	79.1, 80.7; (1908)	77.1; (1910)	79, 83, 85.1, 85.5, 85.6, 86.7, 87, 87.7, 88, 88.2, 88.2, 89.1, 90.1, 90.7, 90.7, 91.5, 93.1, 93.5.
Chattanooga Medical College (1908)	82.4, 92.7; (1909)	84.6, 91; (1910)	77.1, 81, 81.7, 83.5, 83.6, 85.2, 85.6, 85.4, 87.1, 87.2, 89.9.
University of West Tennessee.....	(1909)	76.2; (1910)	76.5
Knoxville Medical College.....	(1910)		89.6
University of Pennsylvania.....	(1907)		90.7
University of Virginia.....	(1892)	85; (1905)	90.2; (1908) 93.4
FAILED			
University of Louisville.....	(1910)		69.9
Mississippi Medical College.....	(1908)		68.1
Meharry Medical College (1909)	74.5; (1910)	60.6, 62.6, 67.2, 67.4,	70, 71.6
Chattanooga Medical College (1905)	70.2; (1910)	72.6, 74.4; (1907)	61.7; (1908) 71.5.
University of Nashville.....	(1908)	70.9; (1910)	59.4, 68.2, 73.6
Tennessee Medical College.....	(1906)		68.9
College of Physicians and Surgeons, Memphis....	(1910)	65.7, 69.2	
University of the South.....	(1909)		73.6
Memphis Hospital Medical College.....	(1910)	25, 72.2	
University of West Tennessee.....	(1910)		67.6
University of Tennessee.....	(1893)		64.5
Gate City Medical College.....	(1905)		71

ANATOMY

1. What organs are found in abdominal cavity? 2. Describe the abdominal cavity. Muscles and bones that form the same. 3. Name the muscles of the gluteal region, origin and insertion of same. 4. Describe the femur and the bones with which it articulates. 5. What organs are found in the thoracic cavity? 6. Name the facial muscles. 7. Trace the femoral artery. Name the important branches given off by same. 8. Name ten cranial nerves.

PHYSIOLOGY

1. Name the principal chemical elements found in the human body. 2. Mention the enzymes found in the gastro-intestinal canal and the action of each. 3. What is the function of the iron of the red blood cells? 4. Name the three cardiac ganglia. 5. What

causes the blood flow in the veins? 6. What are the functions of the suprarenal glands? 7. Mention the principal automatic and reflex centers found in the medulla. 8. What would be the effect of a lesion of the lower half of the pons Varolii? 9. If the left occipital lobe of the brain were destroyed, what would be the effect on the sense of sight?

PATHOLOGY

1. Describe the pathology of the liver, lungs and blood in pernicious intermittent fever. 2. Give the pathology of the gastric intestinal tract in acute alcoholism. 3. Describe the pathologic changes in the blood in pyemia. 4. Describe the pathology of the blood in septicemia. 5. Describe the pathology of scurvy. 6. Describe the pathology of gonorrheal arthritis. 7. Describe the pathology of the joints when the seat of chronic inflammatory rheumatism. 8. Describe the morbid changes in the valves in mitral stenosis.

CHEMISTRY

1. Give the chemical formula for carbolic acid. How is it obtained and what are its properties and uses? 2. Give chemical formula for ethyl chlorid. How prepared and its uses? 3. Explain how water and its contained impurities may become purified by running in a shallow stream over a precipice. 4. Give chemical test for free hydrochloric acid in stomach contents. 5. What is the range of the specific gravity of normal urine? State what diseased conditions produce (a) an abnormally high specific gravity of the urine, (b) a low specific gravity of the urine? 6. When testing for glycosuria with Fehling's solution, how do you determine whether the reaction is that of sugar or some other reducing agent? 7. How do you detect the presence of bile in a specimen of urine? Name the principal bile pigments. 8. What is the urinometer? State its importance as an aid to diagnosis.

PRACTICE

1. Name the diseases which you expect to encounter in your practice in Tennessee. Name your methods of making diagnosis of diseases. 2. Name the specific causes of lobar pneumonia. What would auscultation and percussion reveal in the first stage of congestion of the lung? Give a treatment for lobar pneumonia. 3. What is endocarditis? Name the causes which produce it. Give treatment for it. 4. Name the specific cause of typhoid fever. How does it gain entrance to the body? Differentiate typhoid fever from remittent fever. Give a general treatment for typhoid fever. 5. What is cerebrospinal meningitis? Name its specific cause. Differentiate between epidemic cerebrospinal meningitis and tuberculous meningitis. Give the clinical features of each. 6. Describe the eruption of small-pox. Of chicken-pox and of measles. What is the period of incubation of each? 7. Give the differential diagnosis between tonsillar diphtheria and follicular tonsillitis. Name the treatment for diphtheria. 8. Name the chronic diseases of the liver. What are the symptoms of obstruction of the common bile duct? What are the symptoms and clinical manifestations of biliary calculi? Name a treatment for biliary calculi.

SURGERY

1. State the constitutional effects and give the treatment of burns. 2. What general principles govern the diagnosis of a tumor? 3. Describe a method of differentiating between (a) the urethra, (b) the bladder and (c) the kidneys as the source of pus in the urine. 4. State the most common seat of fracture of the clavicle and describe a method of treatment. 5. Describe the steps in the treatment of a scalp wound. 6. Make a differential diagnosis of coma from (a) injury, (b) apoplexy, (c) uremia, (d) opium poisoning and (e) alcoholic intoxication. 7. What are the symptoms and treatment of a sprained ankle? 8. What arteries need ligating in amputation at the middle third of the leg? Describe your method of ligating.

OBSTETRICS

1. State in detail your management of a normal labor from its inception to its close. 2. Give the differential diagnosis between a primiparous and multiparous woman. How would you calculate the date of confinement? 3. Mention the signs of pregnancy at three months and at six months, naming them in order of their importance. 4. What is your opinion of the Cesarean section? At what time and under what conditions would you advise it? 5. After the period of viability, how would you diagnose a dead fetus, and, if dead, what would you do, and how would you do it? 6. Given a case of placenta prævia approximating full term, what would you do? Give advantages and disadvantages of various procedures as regards safety of both mother and child. 7. Mention the uterine displacements that are liable to influence (b) conception, (c) pregnancy and (d) labor, and state the reasons for such influence. 8. Give a differential diagnosis between ovaritis and ovaralgia.

MATERIA MEDICA

1. What is magnesium sulphate? Give its use in the practice of medicine. 2. From what source is heroin, and what is the dose? 3. Give the source of atropin, and dose. 4. What is hydrastis? Give the dose, and describe the pathologic lesion for which you would use it. 5. What is the source of sulphocarbolate of zinc? 6. What preparation of iron is used in erysipelas? The dose? How often repeated, and mode of administration? 7. For what pathologic lesion would you use iodin? 8. What is the dose of calcium sulphid? Potassium chlorate? Potassium bromid?

Texas June Report

Dr. R. H. McLeod, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 28-30, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 139, of whom 135 passed, including 6 osteopaths,

and 4 failed. The college and year of graduation for one candidate who failed was not obtained. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama.....	(1875) 75; (1910)		83.7
Georgetown University.....	(1909)		86.4
Atlanta College of Phys. and Surg....	(1902) 77.2; (1910)		75
Medical College of Indiana.....	(1900)		81.9
Louisville Medical College.....	(1906)		81.9
Louisville and Hospital Medical College.....	(1908)		83.9
University of Louisville.....	(1894) 75; (1909)		82.3
Kentucky School of Medicine.....	(1876)		75.7
Tulane University of Louisiana (1904) 78.4; (1909) 78.5; (1910) 78.7, 82.5, 82.5.			
University of Maryland.....	(1904)		75
College of Physicians and Surgeons, Baltimore.....	(1910)		84.8
Harvard Medical School.....	(1888)		75
Kansas City Hahnemann Medical College.....	(1910)		89.9
American Medical College, St. Louis.....	(1910)		82.9
Barnes Medical College.....	(1910)		78.3
St. Louis College of Physicians and Surgeons.....	(1909)		77.8
Kansas City Medical College.....	(1882)		75
Missouri Medical College.....	(1873) 75.2; (1876)		75.8
Bellevue Hospital Medical College.....	(1885)		76.5
North Carolina Medical College.....	(1909)		84.1
Jefferson Medical College, Philadelphia.....	(1895)		81.7
Woman's Med. Coll. of Pennsylvania (1896) 79.9; (1905)			92.4
University of Pennsylvania.....	(1860) 75; (1907)		90.8
University of Tennessee.....	(1907) 86; (1910)		83.3
University of the South.....	(1908)		81.2
Vanderbilt University (1890) 75; (1909) 85; (1910) 82.7, 84.8, 89.7.			
Memphis Hospital Medical College (1902) 85.7; (1903) 79.9; (1907) 84.7; (1909) 75.5, 86.7; (1910) 75.7, 78.8, 79.2, 79.8, 90.5.			
College of Physicians and Surgeons, Memphis....	(1907)		79.3
Meharry Medical College (1909) 80.8; (1910) 75, 75, 91.6.			
University of Nashville (1904) 77.3; (1909) 78; (1910) 75.			
Baylor University 75.5 (1910) 79.9, 80.4, 80.7, 83.6, 86.7, 89.5, 90.3.			
Fort Worth University (1910) 75, 75.6, 79.7, 80.4, 80.7, 81.2, 82.1, 82.7, 82.9, 84.3, 84.4, 84.5, 84.7, 88.2, 88.3, 93.3, 93.3, 90.8, 90.9.			
Southwestern University Medical College, Dallas (1910) 76.6, 77, 79.5, 80.9, 81, 82.4, 82.5, 84.3, 85.3, 86.2.			
University of Texas (1906) 86.4; (1907) 75.6; (1910) 77.7, 79.5, 79.8, 80.8, 81.1, 83, 83.2, 83.7, 83.8, 84.7, 84.9, 84.9, 85.6, 85.7, 86.2, 86.6, 87.3, 87.4, 87.5, 87.7, 87.8, 87.8, 88.1, 90, 90.1, 90.5, 90.8, 91.5, 91.7, 92.4, 95.5.			
FAILED			
Louisville Medical College.....	(1890)		51.8
Maryland Medical College.....	(1905)		65.6
St. Louis College of Physicians and Surgeons.....	(1909)		69.3

The following questions were asked:

ANATOMY

1. Give the origin, relation, course and distribution of the posterior tibial artery. 2. Give the muscles of the orbital region, describing one, giving its attachments and insertion with its action and nerve supply. 3. Describe the posterior triangular space of neck, naming the structures found therein, together with their relation to each other. 4. Describe the ulna, giving its muscular attachments. 5. Describe knee joint, giving the osseous and ligamentous structures that enter into its formation. 6. Describe the collateral circulation around the elbow. 7. Describe the perineum, giving the nerve and blood-supply to the parts, together with their source and relations. 8. Name the extensor group of muscles of the forearm; describe one fully, giving its attachment and insertion, together with its action and nerve supply. 9. Describe the brachial plexus of nerves. 10. Outline and give a gross description of the liver, together with its relation to the internal organs.

BACTERIOLOGY

1. Describe the Gram method of staining. 2. Name three pathogenic bacteria that are stained by the Gram method. 3. Name or give examples of three different bacteria which do not stain readily. 4. Describe the process of staining blood. 5. In normal blood, stained, describe the various cells. 6. Name three different pus-producing bacteria. 7. What are the chief effects of bacterial growth? 8. Before being accepted as the cause of a given disease a germ must conform to what is known as "Koch's Four Laws"; name them. 9. In diagnosis, name the means for identifying bacteria. 10. What are ptomaines and toxins?

PATHOLOGY

1. Panaritium tendinum: Give its pathology and give reason why a felon of the thumb and little finger is more liable to spread into the palm of the hand than felon of the three middle fingers. 2. Wounds: In a wound of any kind, septic or aseptic, certain principles of treatment if faithfully carried out, will greatly contribute toward a union by first intention. Name these principles. 3. Poisons: Caustics and irritants—describe their effects on the body tissues and how these effects are brought about. 4. Give causes of catarrhal jaundice and its effect on the system. 5. Give pathology of pleurisy and name the two diseases it most commonly occurs in as a complication. 6. Give pathology of phlegmonous tonsillitis. 7. Give pathology of yellow atrophy of the liver. 8. Name three varieties of sarcoma and describe the cells of each variety named. 9. Typhoid fever: Give its cause and pathology. 10. Dermoid cysts: To what class of tumors do they belong, and on what parts of the body do they most frequently occur?

HISTOLOGY

1. Describe the histologic structure of the skin. 2. Describe the histologic structure of the pancreas. 3. Describe the histologic structure of the tonsils. 4. Where is unstriated muscular tissue found? 5. Describe the Pacinian corpuscle. 6. Give the histologic difference between the wall of an artery and the wall of a vein.

7. Name the genital organs of the male system and describe the vas deferens. 8. Name the genital organs of the female system, and, if any, what is the difference between the mucosa of the body of the uterus and that of the cervix? 9. Enumerate the different epithelia, giving a locality or organ in which each predominates. 10. Describe the microscopic appearance of a cross-section of a nerve-fiber.

CHEMISTRY

1. Give toxic symptoms of bismuth; (b) say how they may occur; (c) and describe a test for same. 2. Give symptoms of fatal dose, and (b) treatment of ammonium hydroxid poisoning. 3. Give Graham's law covering diffusion of gases. 4. The presence of ammonia in excess of 0.05 mg. per liter in water indicates what? 5. What is acetone? (b) clinical significance. (d) Describe a practical test for same. 6. Define hemoglobinuria and give test for hemoglobin. 7. Give a simple, practical test for pus in the urine. 8. What is muscarin; (b) where found; (c) symptoms of poisoning; (d) antidote? 9. How is the specific gravity of a gas determined? 10. Differentiate dialysis and osmosis.

PHYSIOLOGY

1. Name the nerves supplying the tongue; (b) give the function of each. 2. Give the velocity of the blood flow in the large arteries; (b) capillaries; (c) give time necessary for a complete circulation of the blood; (d) give velocity of nerve impulse. 3. To classify all the senses as external and internal; name five belonging to each class. 4. Give action and tell where found of the following enzymes: (b) amylase; (c) invertase; (d) lipase; (e) pepsin; (f) erepsin. 5. What tissues of the body possess marked power of contractility? 6. Name the nerves supplying the heart; (b) give function of each. 7. What artificial stimuli may produce muscular contraction? 8. What is the normal blood-pressure in an adult, expressed in mm's? 9. Define the following terms: (b) tidal; (c) complementary; (d) supplemental; and (e) residual air; and (f) vital capacity. 10. Define (a) miosis; (b) mydriasis; (c) eupnea; (d) necremia; (e) hydremia; (f) choluria; (g) biotomy; (h) albuminuria; (i) alopecia; (j) chemosis.

MEDICAL JURISPRUDENCE

1. Give the eight varieties and classification of insanity. 2. What is meant by justifiable abortion? (b) Differentiate justifiable abortion from criminal abortion. 3. Give the chemical tests of blood. 4. What is meant by rape? (b) Give the three important constant symptoms or signs as medical testimony in alleged rape. 5. What do you understand by age of consent in reference to rape? 6. Give common cause of death from wounds. 7. Describe death from and give the post-mortem signs of strangulation. 8. Describe, define and differentiate illusion, delusion and hallucination and the lucid interval. 9. What are the effects of exposure to extreme heat? 10. By what means may the dead be identified?

PHYSICAL DIAGNOSIS

1. Give the physical signs of Raynaud's disease and describe the different grades. 2. What is meant by dyspnea? In what disease is it a prominent symptom? 3. Name six causes for the displacement of the cardiac apex. 4. Name the points to be noted when taking the pulse. 5. Give the most important signs of thoracic aneurysm. 6. Name the different groups of emphysema and describe each briefly. 7. What organs can be felt through the abdominal walls by palpation? 8. Name the most common diseases affecting the peritoneum and the commonest cause of local peritonitis. 9. What is meant by jaundice and give some of the causes? 10. Name some of the symptoms of intestinal diseases.

SURGERY

1. How do you prepare patients for the administration of anesthetics? 2. How do you treat acute synovitis? 3. How is the callus disposed about a fracture? 4. What are the causes of gangrene? 5. What complications accompany fractured ribs? 6. What symptoms denote malignant disease of the prostate? 7. What changes take place in strangulated hernia? 8. What precautions are observed in excising a joint? 9. Under what circumstances should the head of the femur be excised? 10. Give differential diagnosis between intracapsular fracture and extracapsular.

OBSTETRICS

1. Describe the human embryo during the fourth, sixth and eighth months, giving the appearance and weight. 2. What effect would double ovariectomy have on the fetus of five months' gestation? 3. Describe changes occurring in the blood during gestation. 4. What are the effects of an acute zymotic disease during pregnancy on (a) mother, (b) child? 5. What are the dangers to (a) mother; (b) the child, from gonorrhea during pregnancy and labor? 6. What is the significance of glycosuria during pregnancy and the frequency of its occurrence during pregnancy? 7. Causes, pathology and treatment of puerperal eclampsia and the danger signs of impending eclampsia. 8. Give the varieties of puerperal eclampsia and their differential diagnosis. 9. What is Tarnier's signs of inevitable abortion? Give its importance in the diagnosis of inevitable abortion. 10. Give formation of caput succedaneum and where does the caput succedaneum appear in the third position?

GYNECOLOGY

1. Give clinical symptoms of stenosis of the cervix and give remedy. 2. Give differential clinical diagnosis of cervical stenosis and atresia of the vagina. 3. Give the classifications and causes of dysmenorrhea. 4. Give the causes of and remedy for procidentia. 5. Give differential diagnosis of ovaritis and appendicitis in a young woman. Would you or would you not advise operative procedure in either condition? 6. For what pathologic condition would you advise amputation of the cervix? 7. What are the relations between menstruation and ovulation? 8. Give the hygiene of the menstrual period. 9. What is artificial menopause, its etiology and the pathologic conditions that justify it? 10. When and for what purpose would you use the following suture material: silk, silkworm gut, plain catgut, chromic catgut and silver wire, in gynecologic work?

HYGIENE

1. Why and how is carbon dioxid deleterious to health? 2. Name the chemical germicides most commonly used and the proportions employed. 3. What is the difference between fermentation, oxidation and putrefaction? 4. Mention the preventable epidemic diseases and state how you would stop the spread of each. 5. Name and describe the principal chemical elements of food, giving the use of each. 6. What is the effect of alcohol on the nerve centers, circulation? 7. How are impurities in water classified? How can they be detected, and why is the presence of organic material in drinking water deleterious? 8. Give the principal factors on which natural and acquired immunity depends. 9. Give period of detention of persons exposed to the following infectious diseases: small-pox, measles, scarlet fever, diphtheria, cholera, typhoid fever and yellow fever. 10. Give the formation of the four standard disinfecting solutions.

Book Notices

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By Anthony Bassler, M.D., Visiting Gastro-Enterologist to the People's Hospital. Cloth. Price, \$6. Pp. 836, with 108 illustrations. Philadelphia: F. A. Davis Co., 1910.

The contributions of American authors to the literature of gastric disorders have been notable from Beaumont's time to the present; several excellent works on diseases of the stomach by Americans are fit to rank with those of the best foreign authors. This series of notable works is worthily continued by the book under consideration. The results of modern investigation are fully presented, including a considerable amount which is original with the author. The anatomy and physiology of the digestive organs are considered in a brief but practical manner. The section on physiology includes a statement of the principles of nutrition and heat production. The methods of examination are exhaustively described. Bassler gives much credit to the method of auscultatory percussion which has been slightly handled by some authors. This section of the book is illustrated by fifteen plates, showing *x*-ray pictures of the stomach in various conditions. Considerable light is thrown on the difficulties experienced in removing stomach contents through the tube by the author's skiagraphs of a stomach-tube filled with bismuth paste and introduced into stomachs of various sizes and conditions. In the chapter on diet are some valuable tables on the composition of foods. Therapeutics are carefully considered, and the opinions expressed are sound and embody some of importance that have waited for this volume to find expression. The fact that alcohol increases the acid but not the pepsin of the gastric juice and that its action is therefore pathologic is carefully explained; the remedy is not recommended unless in exceptional cases. Digestive ferments find almost no place in the author's therapy. He also calls attention to the fact that stomach mucus is primarily protective and does not usually need to be removed. The clinical section dealing with the various diseases of the stomach gives a large mass of data well worked out and contains a practical guide for the treatment of these diseases by the general practitioner as well as by the specialist.

Some minor errors may be noted which undoubtedly will be corrected in the next edition. It would seem that so well-informed an author ought to recognize the rights of modern chemical nomenclature and no longer refer to the fats as hydrocarbons. A more serious error occurs on page 185 where the use of potassium chlorid instead of the chlorate is directed in performing the iron test for blood. The author states that Boas-Oppler bacilli do not stain with iodine, while such staining is mentioned by other authors as one of their chief characteristics. An error has been made in describing the method of nitrogen estimation on page 267. The amount of urea would be found by multiplying the nitrogen found by 2 instead of 20. Legal's test for acetone (p. 190) is simplified by the omission of sodium nitroprussid; this occurs possibly by mistake, but it is doubtful if the directions will prove a very useful guide in their present form. The description of Strauss' method of examination for lactic acid (p. 178) is incorrect and impracticable. Other mistakes have been allowed to slip through; thus the calorific power of butter is put at 475 calories per pound, evidently 10 times too low. The Latin of the prescriptions is decidedly faulty, the genitive endings having been frequently omitted. A gradual transition from Latin to English prescriptions is indicated by the mixed

variety, in which both languages are employed indiscriminately, thus:

B.	Bismuthi subnitrat	6.0
	Cerri oxalatis	2.0
	Peppermint sugar	3.0
	Fiat Chart. No. x.	

Obsolete or unusual words are used. In the haste of composition the grammatical construction has frequently been allowed to shift for itself. Although it is distasteful to criticize the literary style of so good an author, we feel that the attention of the publishers should be called to the matter.

DYSPEPSIA: ITS VARIETIES AND TREATMENT. By W. Soltan Fenwick, M.D., Doctor of Medicine of the University of Strasburg. Cloth. Price, \$3 net. Pp. 485, with illustrations. Philadelphia: W. B. Saunders Co., 1910.

Under the term "dyspepsia"—a very indefinite one for the title of a medical book in an age of scientific precision—Fenwick includes nearly all affections of the stomach and intestines. The author comments on the failure of treatment which adheres too closely to the indications derived solely from laboratory examinations; he calls attention to the fact that drugs which are supposed to control gastric motility or secretion seldom do what is expected of them. The influence of the mind and nervous system on the stomach is recognized. The etiology of dyspepsia involves the consideration of the influences flowing from other organs and from various general pathologic states. These receive special attention in the work. The irritating effect of various foreign bodies, such as hair balls, insects and other living creatures, seldom more than noticed by other authors, receive due attention.

Notwithstanding the critical attitude toward laboratory work, a sufficient account of the results of these investigations has been incorporated in the account of the symptomatology. The value of the book lies in its comprehensive treatment of the subject from the clinical standpoint. The introduction of laboratory technic, which the limits of the work preclude from being completely described, might better have been omitted. Thus in the account of intestinal indigestion two chemical methods quite beyond the skill of the average practitioner are introduced, but the more feasible methods of microscopic examination are merely mentioned. The significance of the findings is very inadequately discussed. With these exceptions the book presents little to criticize and its utility to the average practitioner is enhanced by the fact that it treats the subject from a somewhat unusual point of view.

ANATOMY, DESCRIPTIVE AND APPLIED. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons. Eighteenth Edition. Revised and re-edited by Edward A. Spitzka, M.D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Cloth. Price, \$6 net. Pp. 1,496, with 1,208 illustrations. Philadelphia: Lea & Febiger, 1910.

It seems scarcely possible that new editions of text-books on anatomy can present much that is new, yet the eighteenth edition of this well and widely known work contains many new ideas intended to increase its value as a text-book. Much of the text has been rewritten and rearranged, the new arrangement being according to sequence of subjects, so that the student receives his knowledge of parts in the order of their anatomic dependence. The spleen and suprarenals have been placed among the ductless glands. The urinary and generative organs are placed together in a chapter on "The Urinogenital Organs." The chapters on the surgical anatomy of hernia and on the dissection of the peritoneum have been omitted, the descriptions being given only in their proper place. Ample directions are given for dissecting. Embryology and histology come in for their usual share of consideration. The name of each structure is printed in black-face type followed by the Basel nomenclature in italics; thus it is easy to find a given reference on a certain page.

Although the text has been enlarged considerably, smaller type has been used freely, so that the size of the book is not increased, and by condensation and omission of duplications, such as those mentioned, the work is made more compact. On the whole, the book has not lost any of its good features; many new ones have been added, and the objectionable features found in the previous edition have been removed. The editor is to be congratulated on the successful completion of a very difficult task in this revision.

HYDROTHERAPY. A Work on Hydrotherapy in General, Its Application to Special Affections, the Technic or Processes Employed and the Use of Waters Internally. By Gny Hinsdale, M. D., Secretary of the American Climatological Association. Cloth. Price, \$3.50. Pp. 466, with 145 illustrations. Philadelphia: W. B. Saunders Co., 1910.

The neglect of physiologic remedies, of which many physicians in the past have been guilty, is rapidly being replaced by an active interest in these useful therapeutic agents. As one of the most valuable, hydrotherapy has received a good share of attention during the past few years, a fact which is evidenced by the number of books that have appeared on the subject.

In spite of this, Dr. Hinsdale's book needs no apology, since it presents the subject in a clear and untechnical form and its author does not attempt to convey the idea—as do so many who write on special forms of therapy—that this particular method of treatment is the last word in therapeutics. As the author says, while he "is a firm believer in using physiologic therapeutics wherever possible, he by no means wishes to exclude the use of drugs," because he believes that "rational therapeutics calls for their use." The book deals not only with hydrotherapy as the term is usually understood—including balneotherapy—but also with crunotherapy or the internal use of mineral waters. The larger part of the volume, naturally, is devoted to the subject of hydrotherapy, which for convenience has been divided into three parts: general hydrotherapy, special hydrotherapy and the technic of hydrotherapy.

The value, and also the limitations, of the use of water in various diseased conditions are conservatively and plainly stated and the methods of getting the best results from the use of this agent are described.

THE SURGERY OF CHILDHOOD. Including Orthopedic Surgery. By De Forest Willard, M.D., Professor of Orthopedic Surgery, University of Pennsylvania. Cloth. Price, \$7. Pp. 800, with 729 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

This complete treatise on the surgery of childhood covers an enormous amount of ground, especial emphasis being laid on orthopedic conditions. In view of the great amount of material to be covered, numerous non-surgical conditions that are described might well have been omitted; for example, thrush, aphthous ulcers, masturbation, spermatorrhea, scurvy, earache, etc.

Under the treatment of scurvy rickets, only oil of erigeron and epinephrin are mentioned to stop the bleeding from the gums; no mention is made of fruit-juices, nor is the possibility of mistaking a subperiosteal hematoma for an acute osteomyelitis mentioned. In the surgery of pyloric stenosis, division is advocated. This is not in agreement with the literature on this subject. As long as mastitis of the new-born is mentioned, there seems to be no good reason for omitting the fact that abscesses do occur and need surgical attention.

In spite of a few minor points, largely non-surgical, on which the book needs revision, it covers the subject very completely, especially in the chapters dealing with the tuberculous lesions of bones and joints, which are very profusely illustrated with photographs and x-ray pictures.

OSTEOLOGY AND SYNDESMOLOGY. By Howard A. Sutton, M.D., Assistant in the Department of Anatomy of the University of Pennsylvania, and Cecil K. Drinker, B.S. Cloth. Price, \$1.50 net. Pp. 225. Philadelphia: P. Blakiston's Son & Co., 1910.

This is a quiz-compend of about 200 pages, and probably answers the purpose of such questionable productions. There are no illustrations. Referring to the necessarily laborious task of learning the bones and joints from the regular descriptive works, the authors say, "it is the hope of the authors that in presenting this small volume they remove the need for such tedious labor."

It may well be asked, "When will students ever have more time for studying the bones and doing this 'tedious labor' than when they are students?" Again quoting, "In the preparation of the text the author has consulted Morris, Piersol's Gray's, Cunningham's and Swan's anatomies. . . ." Why deprive the student of the advantage of getting this information at first hand, embellished with the good descriptions and illustrations in the complete works, having the stamp of authority—so far as that goes? Why give him in their stead the bare details devoid of illustrations and the vitality

of good descriptions so necessary to the proper comprehension of his subject?

A TEXT-BOOK OF MENTAL DISEASES. By Eugenio Tanzi, Professor of Psychiatry in the Royal Institute of Higher Studies of Florence. Authorized Translation from the Italian by W. Ford Robertson, M.D., C.M., Pathologist to the Scottish Asylums, Edinburgh, and T. C. MacKenzie, M.D., F.R.C.P., Edin., Medical Superintendent, Inverness District Asylum. Cloth. Price, \$7. Pp. 803, with 132 illustrations. New York: Reiman Company 1910.

Tanzi's classification is rather more simple than Kraepelin's. He separates melancholia from mania and circular psychoses, however. He places idiocy among the cerebropathies, thus separating it from imbecility, which he puts among the degenerative mental anomalies. The book includes chapters on the seat of the psychic processes, the causes of mental diseases, anatomic substratum of mental diseases, sensibility, ideation, memory, the sentiments, movements and other external reaction, classification of mental diseases, pellagra, alcoholism, amentia, the thyroid psychoses, progressive paralysis, infantile cerebropathies, adult cerebropathies, the affective psychoses, neurasthenia, hysteria, epilepsy, dementia præcox, sexual perversions, constitutional immoralities, paranoia, imbecility and asylums. The translation is remarkably good.

A STUDY OF MELTING-POINT DETERMINATIONS. With Special Reference to the Melting-Point Requirements of the U. S. Pharmacopœia. By George A. Menge, Hygienic Laboratory. Bull. No. 70. P. H. and M.-H. S. of the United States. Paper. Pp. 101, with 20 illustrations. Washington: Government Printing Office, 1910.

In view of the importance of the melting point of a chemical substance, both as a means of identification and control of purity, and because of the widely varying methods of carrying out this determination, the whole subject has been carefully and thoroughly reviewed and discussed in this bulletin. From a survey of the existing methods and the results obtained by these methods, the author has devised an apparatus and technic which is simple and inexpensive, yet accurate. The method was thoroughly tested and found to be satisfactory, as shown by the many results tabulated in the bulletin. Menge recommends the apparatus and method for adoption as the official method for the United States Pharmacopœia.

INSANITY IN EVERY-DAY PRACTICE. By E. G. Younger, M.D. Brax, Senior Physician, Finsbury Dispensary. Second Edition. Cloth. Price, \$1.25. Pp. 124. Chicago: Chicago Medical Book Co., 1910.

This little volume is prepared especially for the general practitioner; and, unlike many books with this ostensible aim, it is actually helpful, as it endeavors to present in a simple and easily assimilated form essential and important facts regarding various types of insanity and their legal aspects. Noticeable and commendable are the absence of complicated nomenclature, the concise discussion of the various forms of insanity, and the rational arrangement of the contents. The appendix contains copies of various legal forms. The book can safely be recommended to the general practitioner.

TOBACCO AND ITS DELETERIOUS EFFECTS. A Book for Everybody. Both Users and Non-Users. By Charles E. Slocum, M.D., Member of Local, Ohio State and the American Medical Associations. Cloth. Price, \$1. Pp. 70. Toledo: The Slocum Publishing Co., 1909.

This author does not leave any room for doubt as to his opinion of the use of tobacco. While his strong feeling on the subject may be justified, his indiscriminating and unanalytic amassing of testimony and his lack of judicial serenity tend to make the reader discount the statements of supposed facts. Since there is a real need for a scientifically authoritative statement of the injury and waste caused by tobacco, it is to be regretted that this book is not more scientific in its citations and more restrained in its style.

DIE PRAXIS DER LOKALEN ANÄSTHESIE. Von Dr. Artur Schlesinger, Berlin. Cloth. Price, 5 marks. Pp. 160, with 22 illustrations. Vienna: Urban & Schwarzenberg, 1910.

The increasing frequency of the use of local, instead of general, anesthesia and the widely scattered state of the literature on this subject make Dr. Schlesinger's little book a welcome addition to our working library. About one-half of the work is devoted to the history, means and methods of use, the remainder to the technic, of local anesthesia as applied to special regions. It is written in such fashion that one having no personal experience may safely follow its guidance, while the specialist will find it replete with information on the methods of to-day.

HISTORY OF MEDICINE. By Max Neuburger, Professor of Medical History in the Imperial University of Vienna. Translated by Ernest Playfair, M.B. In Two Volumes. Vol. I. Cloth. Price, \$9. Pp. 404. New York: Oxford University Press, 1910.

This volume, which contains a preface by Dr. William Osler, gives the history of medicine from primitive times down through the middle ages. The subject-matter is presented as a more or less continuous narrative, in a style which at once attracts and holds the interest of the reader. As an added advantage, the text of the book has been printed in large type, while in smaller type appear numerous references and details. This will be a valuable addition to the library of any one interested in the history and progress of medicine.

ATLAS DER RECTALEN ENDOSKOPIE. Nebst einer Einführung in die Technik der rectalen Endoskopie. Von Dr. Arthur Foges, Wien. Second Edition. Price, 14 marks. Paper. Pp. 102, with illustrations. Wien: Urban & Schwarzenberg, 1910.

The second and concluding part of this work fully maintains the high standard of excellence reached in the plates and text of the first part, noticed in *THE JOURNAL*, Feb. 12, 1910, p. 563. The complete work with its practical text and artistic plates is one of great value to the student or specialist in proctology.

Medicolegal

Validity of City Ordinance Regulating Location of Private Hospitals, Especially for the Insane

The Supreme Court of Washington, in *Shepard and others vs. City of Seattle* (109 Pac. R. 1067), affirms a judgment dismissing an action to restrain the city from enforcing an ordinance regulating the location and maintenance of private hospitals and sanatoriums, brought by the owners and lessees of certain property used for a sanatorium for the treatment of persons suffering from nervous and mental diseases, including insane persons. The ordinance provided that no private hospital or sanatorium should be established or maintained within the city in any building in which any of the sinks or water closets or other drainage were not connected with the public sewers of the city, nor should any private hospital or sanatorium for the treatment of inebriates or persons suffering from insanity or other mental diseases be established or maintained in any buildings situated within 200 feet of any private property the owner of which had not consented in writing to the location and maintenance of such hospital or sanatorium, nor in any building without the written permit from the commissioners of health of the city.

It was contended that a private sanatorium for the care of persons suffering from insanity or other mental diseases is not a public nuisance in and of itself, and cannot be made a public nuisance, if not such in fact, by a mere declaration of a municipal legislature; that this ordinance deprived the plaintiffs of their property without due process of law, and denied to them the equal protection of the law, in violation of the state and federal constitutions. But no question was involved here as to the power of the city, as contradistinguished from the power of the state itself, the court says, for in all matters appertaining to the public health and public safety substantially the entire police power of the state is vested in municipal corporations of the first class, in the state of Washington.

Furthermore, the ordinance applied to different kinds of hospitals and sanatoriums, and prescribed different requirements with which those desiring to establish and maintain such institutions must comply. The provisions of the ordinance were severable, both as to the character of the institution and the requirements to be met or complied with. Some of those requirements might be valid and others invalid, or they might be valid as to one kind of an institution and invalid as to another.

The case of *Bessomies vs. City of Indianapolis*, 71 Ind. 189, would sustain the provision of the ordinance requiring hospitals to connect with the public sewers of the city—at least such hospitals as harbor persons suffering from infectious or contagious diseases. Whether reasonable as to a hospital of the character here in question, the court need not inquire,

for it was convinced that the second requirement of the ordinance was both reasonable and valid.

The ordinance in effect declared that any private hospital or sanatorium for the treatment of inebriates, or persons suffering from insanity or other mental diseases, was a public nuisance, and should be abated as such, unless its location and maintenance were consented to in writing by the owners of private property situated within 200 feet of the hospital buildings. This, in the court's opinion, was a valid and reasonable police regulation. The presence of a private insane asylum, with its barred windows and irresponsible inmates, would annoy, injure and endanger the comfort, safety, and repose of any person of average sensibilities if located within 200 feet of his place of abode. In other words, it is a matter of common knowledge that the presence of such an institution in a residential portion of a city would practically destroy the value of all property within its immediate vicinity for residence purposes. If so, it was proper and competent for the municipal authorities to require the assent of the injured parties to its location and maintenance. Hospitals for the treatment of patients suffering from infectious and contagious diseases have often been adjudged nuisances, when located in the residential parts of cities and towns, and danger from the immediate presence of a hospital of this kind differs in kind rather than in degree.

The third requirement of the ordinance was a written permit from the commissioners of health, but that requirement was apparently for the purpose of showing that the other provisions of the ordinance had been complied with. In any event the requirement was unobjectionable in itself.

The contention that the ordinance was void because it was admitted that it was enacted at the solicitation of persons residing in the vicinity of said premises and solely in their behalf as a local and special regulation, is answered by the court's saying that it was not permitted to inquire into the motives of the city council. If the ordinance was valid on its face, the reasons or arguments that might have moved the city council to act were not pertinent here.

There are many unpleasant and annoying things that must be borne by those living in a state of organized society, in order that others may enjoy their equal rights under the law, but the preservation of the public health and safety is one of the chief objects of local government, and every citizen holds his property subject to a reasonable exercise of the police power of the state. In the court's opinion this ordinance was a reasonable and proper application of the maxim, "So use your own as not to injure another's," and was sustained by the maxim, "The welfare of the people is the supreme law," in which the police power of the state finds its chief support.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

December 31

- 1 Surgical Methods of Treating Hyperthyroidism. C. H. Mayo, Rochester, Minn.
- 2 Experiences with Salvarsan. W. S. Gottheil, New York.
- 3 Mental Disturbances Following Traumatism; Medicolegal Considerations. A. Gordon, Philadelphia.
- 4 *Long-Continued High Blood-Pressure; Its Results and Prevention. W. H. Sheldon, New York.
- 5 *Approximate Estimation of Protein Contained in the Cerebrospinal Fluid. D. M. Kaplan, New York.
- 6 *Mercury Succinamid in Treatment of Tuberculosis. L. S. Peters, Silver City, N. M.

4. **Long-Continued High Blood-Pressure.**—Attention is called by Sheldon to the fact that high blood-pressure is a condition and not a disease. He says that long-continued high blood-pressure produces a condition whereby there is leakage of cardiac energy. The arterial tree in health maintains diastolic pressure in normal relation to systolic. In cases of long-continued high blood-pressure there is failure of diastolic pressure to maintain its normal relation, therefore, there must be lessened elasticity of the arteries. The increased strain on the heart is in accordance with the amount of the

diastolic failure. In a series of thirty patients examined by Sheldon, the average pulse-pressure was 78.5 mm., while a normal arterial tree will give a pulse-pressure of from 20 to 40 mm. Therefore, there was a loss of from 38 to 58 mm. of high pressure. It would seem, he says, that in these cases the high systolic pressure was in the nature of a compensatory act, as in order to maintain a diastolic pressure of 108.7 it was necessary to have a systolic pressure of 187.2. There are signs of poor circulation with high systolic pressure if the diastolic pressure is relatively low. Sheldon is convinced that if attention were paid to the first indication of increased pressure and the cause removed, the inevitable bad results noted could be prevented. When the pathologic condition of failure of diastolic pressure has been established, efforts should be directed toward maintaining the compensation of the heart.

5. Estimation of Protein in the Cerebrospinal Fluid.—The technic of the test used by Kaplan is: 1. Centrifugalize the fluid and use the supernatant liquid. 2. Into each of five small test tubes introduce from 0.1 c.c. to 0.5 c.c. of clear fluid. The obtained fluid must be blood-free. 3. Heat the first tube (0.1 c.c.) gently and add 2 drops of a 5 per cent. butyric acid solution and heat until it bubbles—but does not spurt. 4. Holding the tube almost horizontally permit 0.5 c.c. of a supersaturated ammonium sulphate solution to float on top of the cerebrospinal fluid. The same is performed with the other tubes. 5. Stand aside, noting the time when the last portion of ammonium sulphate was added to the 0.5 c.c. tube. In case of a protein excess, a distinct ring appears in the middle of the fluid. The ring appears in from 5 to 25 minutes after being set aside, is of a coarse granular appearance (cheesy) of a cream color. The greater the protein content the more apparent the appearance of the ring in the tubes with the smaller amounts of cerebrospinal fluid. The rings that appear later than 25 minutes are not characteristic. Negative fluids at times show a ring, but it takes from thirty minutes to over one hour before its appearance and the rings in this case are not composed of the coarsely granular material which is seen in the case of fluids with a protein excess. Compared with other methods, Kaplan's reaction is said to conform to clinical diagnosis and other laboratory results oftener than the protein reaction of Nonne and Noguchi.

6. Mercury Succinamid in Tuberculosis.—Peters' work covers a series of twenty-three patients treated in a closed institution under perfect dietetic and hygienic conditions. An analysis of his work shows the following results: Stationary, six; died, two; failed, nine; improved, four; cured, two. It is interesting to note that of the six patients classed as improved or cured four were syphilitic and two, cases of simple tuberculosis. One syphilitic made rapid gain under mercury but developed in the course of treatment a neuritis which was extremely painful and because of which the injections were abandoned. He went down rapidly from then on and is now a hopeless case. The other syphilitic who failed gained for a time, but from a pulmonary standpoint was hopeless in the beginning. Of the two non-syphilitic individuals one improved and one recovered. Peters, however, is firmly convinced that either would have done the same under any treatment, for both were excellent patients with little pulmonary involvement. Of the nine who failed and the six remaining stationary, only two were syphilitic. Two who died were also free from any syphilitic taint, one dying of bronchopneumonia following hemorrhage and the other was sent home as hopeless and died a few months later.

New York Medical Journal

December 31

- 7 *Eggs. R. C. Rosenberger, Philadelphia.
- 8 The Wassermann Reaction and Salvarsan. T. MacRae, New York.
- 9 Regulation of Prostitution. M. Glasgow, New York.
- 10 Rest, Exercise and Food in the Management of Tuberculosis. A. P. Francine, Philadelphia.
- 11 Climate as a Curative Agent. F. G. Byles, Denver.
- 12 *A New and Successful Use for Old Staphylococcus Bacterin. B. R. LeRoy, Athens, Ohio.
- 13 Impetigo Contagiosa Transmitted by Machine Oil. O. V. Huffman, Cincinnati.
- 14 Magic and Medicine: A Study in the Borderland of Scientific Light and Darkness. J. Knott, Dublin.

7. Eggs.—Rosenberger says that if the so-called heated or "spot" eggs contain putrefactive bacteria and if kept in a mixture for some time before disposing of them, poisonous products are generated which may cause symptoms of gastroenteritis and simulate very closely cases of meat poisoning. It is sometimes said by patients who are on a diet of raw eggs that they cannot eat them, that they make them sick or cause diarrhea or other symptoms of gastroenteritis. It can easily be explained if the patients have eaten these spot eggs. Take a patient with tuberculosis who is recommended to eat so many raw eggs a day. If he is too sick to wait on himself, someone might make up a milk punch containing spot eggs, and mild or severe gastroenteritis develops. Or in the making of a salad dressing where great heat is not required, the making of corn starch, of various puddings, or even in baking cakes, these spot eggs may have been used and, perhaps, bring about gastroenteritis in those who eat thereof. If 0.5 c.c. (8 minims) of an egg mixture offered for sale as fit for food purposes will kill a guinea-pig in eight hours, one wholly unacquainted with bacteria or their products will readily see that a potent poison is contained in the eggs and that they are absolutely unfit for food.

It is Rosenberger's opinion that the most rapid and efficient method of determining strictly fresh eggs is by the candling process, but by an expert. Some eggs that are put on sale as fresh eggs open up apparently fresh, yet when the dish is slightly jarred, the admixture of white and yolk is easily accomplished, which, with a perfectly fresh egg, is only accomplished after severe beating. The spot eggs do not uniformly give off an odor, but a mouldy egg does, as well as a black rot or an ordinary rotten egg. Take a fresh egg and shake vigorously for an indefinite time; no admixture of white and yolk is possible in the shell, and everyone knows how impossible it is to mix these two portions in a dish without vigorous beating. To prevent the selling of spot and rot eggs, as well as mixtures of these forms of eggs, either frozen or not, the law should compel the dealers to dispose of them immediately to the manufacturing concerns individually and not leave them for some unscrupulous trafficker or peddler who collects these eggs for personal gain, obtaining them from dealers for almost nothing and disposing of them to small bakeries at from 18 to 20 cents a pound when fresh eggs are bringing from 36 to 48 cents a dozen. When two grades of eggs are offered for sale at a "dairy" or store, it is almost a foregone conclusion that the cheaper ones contain "spots" or are "heated" eggs.

12. Staphylococcus Bacterin.—While engaged in making a comparative bacteriologic study of certain parasitic microorganisms found on the bodies of persons suffering from certain forms of insanity, LeRoy had occasion to make and use considerable quantities of the staphylococcus bacterin. A mixed form of the bacterin was made from fresh cultures of the *Staphylococcus pyogenes albus* and the *Staphylococcus pyogenes aureus* in about equal amount. The bacterin was made very strong, and this particular bottleful was made the density of thin cream. The bottle, of 8-ounce capacity, was sealed with paraffin, wrapped in amber-colored paper, and placed in a cool, dark place and forgotten for a space of over two years when it was brought to light and examined. It was found to be separated into two portions, the upper and greater portion was a yellowish serum-colored fluid, the lower portion was of a gelatinous nature and of a deep red color. On agitating the substance it broke up into flakes which became suspended in a homogeneous manner, making a fluid the density of thin cream. Wishing to learn whether it had lost its immunizing power or not, and not caring to inject it into the circulation, LeRoy applied it topically in a case of exaggerated pustular acne, the face, neck, back, breast and arms being covered with the pustules. The diseased surface was painted with a camel-hair brush, frequently shaking the bacterin. At once the skin became intensely red, with considerable sharp stinging pain which lasted for a few minutes; then all was pleasant. The redness subsided within a few hours, and nothing further was noticed. The treatment was given every day, the few unpleasant symptoms becoming less and less until there was practically no reaction whatever following the application of the fluid. The clinical results

were most rapid in action and very pleasing to all concerned. The face cleared up without further pustulation. The comedones dried up and were removed by rubbing the skin briskly with a coarse towel, the comedones rolling out like shot.

In all, twenty-eight patients have been treated in this manner without a failure. This seems remarkable when it is recalled that the bacterin is now over three years old, is sterile, is without odor or signs of change other than what has been mentioned. This substance is being used on a case of rhinophyma with the most gratifying results, the surface of the nose being painted with the solution mentioned in the foregoing article. The solution has been used in cases in which suppuration has been part of the trouble, regardless of the other conditions present, with the same result as mentioned in the cases of acne.

Lancet-Clinic, Cincinnati

December 17

- 15 *Action of Heart Stimulants. F. C. Askenstedt, Louisville, Ky.
- 16 The Wassermann Reaction. O. Berghausen, Cincinnati.
- 17 Salvarsan in Syphilis. M. L. Heidingsfeld, Cincinnati.

December 24

- 18 The Former Medical Giants of France. F. Dowling, Cincinnati.
- 19 Salvarsan in Syphilis. M. L. Heidingsfeld, Cincinnati.

15. **Action of Heart Stimulants.**—In the nine cases reported by Askenstedt, strychnin was used seven times, nitroglycerin five times and ammonium carbonate once. Strychnin was administered five times to patients of low blood-pressure, once when arterial tension was normal and once when it was high. Except in a doubtful case of anesthesia, strychnin did not in a single instance show any stimulating effect on the circulation. As the tablets used were obtained from various sources, and some had come as samples direct from the manufacturers, the lack of perceptible action of the strychnin cannot be ascribed to bad pharmacy. In all of the five nitroglycerin cases—each of which presented a hypertension—a reduction of the systolic tension from 10 to 25 mm. invariably took place, lasting not less than one or one and one-half hours after the administration of the drug. Any effect of the nitroglycerin as a heart stimulant, however, is devoid of proof in these cases. The reputed power of digitalis to increase arterial tension was not borne out by the two experiments, either where the tension was low or where it was high. Ammonium carbonate proved inert in the case of complete heart-block. While these heart stimulants were given principally for experimentation, most of them were legitimately used on physiologic indications; in other words, they were such remedies as the average physician would have employed for the conditions presented. Only a few patients knew that an experiment was being carried out, so Askenstedt infers that the therapeutic administration of these stimulants in closely similar cases would produce practically the same results.

New Mexico Medical Journal, Las Cruces

November

- 20 The New Mexico Medical Society. J. W. Elder, Albuquerque.
- 21 The Needs of the Profession in New Mexico. R. E. McBride, Las Cruces.
- 22 A Case of Mitral Regurgitation. J. R. Gilbert, Alamogordo.

Southern Medical Journal, Nashville

December

- 23 *Safeguarding Society from the Unfit. A. B. Cooke, Nashville.
- 24 *Exophthalmic Goiter. W. D. Haggard, Nashville.
- 25 Therapeutic Indications for Thyroid Administration. J. M. Tompkins, Richmond, Va.
- 26 *Pharmacologic and Clinical Aspects of Hexamethylenamin. L. B. Wiggs, Richmond, Va.
- 27 A Summary of Cases of Malaria. J. M. Swan, Watkins, N. Y.
- 28 Pain in Abdominal Disease. W. M. Harsha, Chicago.

23 and 24. Abstracted in THE JOURNAL, Nov. 26, 1910, p. 1919.

26. **Clinical Aspects of Hexamethylenamin.**—It is believed by Wiggs that his experiments show the positive irritant properties of hexamethylenamin. Medium doses of hexamethylenamin continued over comparatively short periods (ten days) will produce renal irritation. Even small doses, if long continued, may produce irritation. In moderate amounts there is an initial increase in the total quantity of urine passed, due to the primary irritation of the kidney structure,

but, if the drug is continued for any considerable length of time, there is a diminution in the amount excreted. Toxic symptoms are only noted when there is severe renal irritation. (Animal No. 2 showed a marked tendency to lie about and sleep and altogether looked sluggish and ill, refusing all food while the hematuria was present.) Hexamethylenamin is more effective as an antiseptic if the urine is acid in reaction. It may itself produce in the urine an acid reaction on account of the ammonia radical present, ammonia, as is well known, rendering the urine acid in reaction. The drug—as such—has only mild antiseptic properties and is probably, in part at least, absorbed unchanged.

Wiggs urges that great care must be exercised in administering even small doses of hexamethylenamin, certainly when it is proposed to be used over extended periods. Microscopic examinations of the urine in all patients receiving the drug should be made if possible, or, if this be impracticable, daily examination of the albumin content should be made. After the drug has been administered for as long as seven days, bladder and renal irritation may be expected and must be rigidly sought for. When given with care and intelligence this is the most potent genitourinary antiseptic. It is suggested that in patients with alkaline urine some drug be given that will render the urine acid in reaction previous to administration of the hexamethylenamin, which seems to act better in the acid medium.

Western Medical Review, Omaha, Neb.

December

- 29 Prevention of Venereal Diseases. P. Findley, Omaha.
- 30 The Work of the Nebraska Orthopedic Hospital. J. P. Lord, Omaha.
- 31 Induced Pregnancy. G. W. Shidler, York, Neb.

Medical Fortnightly, St. Louis

December 10

- 32 Material and Methods, the Secret of Success in Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
- 33 Acute Mania with Unusual Duration of Mental Obliviousness—Recovery. M. R. Hughes, St. Louis.
- 34 Functional Neuroses, Clinically Reviewed. W. F. Waugh, Chicago.

Illinois Medical Journal, Springfield

December

- 35 *Acute Epiphysitis of the Hip. J. L. Porter, Chicago.
- 36 Commitment and Care of the Insane of Cook County. J. P. Houston, Chicago.
- 37 Our Research Workers. E. B. Coolley, Danville.
- 38 Therapeutic Nihilism. J. Miles, Merom, Ind.
- 39 Analytic and Microscopic Study of Pus. L. J. Willien, Terre Haute, Ind.
- 40 Recognition of Extra-Uterine Pregnancy. A. M. Miller, Danville.
- 41 Fracture of the Skull. I. L. Firebaugh, Robinson.
- 42 Surgical Aspects of Hernia. H. N. Rafferty, Robinson.
- 43 *Aneurysm of the Aorta. C. N. Combs, Terre Haute, Ind.
- 44 Advantages of Clinical History Writing. B. V. Caffee, Terre Haute, Ind.
- 45 *Sympathetic Ophthalmia. E. V. L. Brown, Chicago.
- 46 Diabetes Mellitus. C. F. Newcomb, Champaign.
- 47 Prevention of Blindness. C. B. Voight, Mattoon.

35. **Acute Epiphysitis of Hip.**—The lesion described by Porter seems to be always confined to the epiphysal line which looks wider than normal, irregular in outline and somewhat hazy, while the examination of a long series of Roentgen plates of early tuberculosis of the hip shows a wide variation in the location and extent of the tuberculous foci. He says that it seems, therefore, that a better differentiation of these cases from the other recognized forms of acute and chronic infections of the hip must come through a closer study of the clinical findings; they all recover without abscesses or other complications which require invasion of the joint and the opportunities for direct pathologic investigation are lacking. The last five patients who have been under observation, and all of whom have apparently recovered, illustrate the clinical history of this affection. In no case was there a history of trauma. In all cases but one, the onset was so acute that within twenty-four hours the patient could not walk on account of pain. In the oldest patients the onset was less acute and the patient continued to walk but limp and complaint of pain in hip developed very suddenly. In all cases the pain was referred to the groin directly over the joint, and in no case was there pain referred to the knee. In two

cases a slight fulness at the site of the pain in the groin could be seen, suggesting some synovitis but no marked tension. In the other three cases no sign of synovitis could be discovered. In none of the cases during all the course of treatment was there any marked thickening or induration of the peri-articular tissues. All the cases showed marked limitation of motion at the hip, muscular spasm and pain on motion during the earlier stage of the attack. In all the cases the acute symptoms subsided rapidly under rest in bed, though the limitation of motion and some spasmodic contraction persisted for a longer time.

In three patients temperatures were taken at intervals from the start but was found elevated in but two, rising from 1 degree to 1.5 degrees during the first ten days. In the other two patients no temperature was taken until after the acute stage had subsided, when it was found absent. One very noticeable point in all the cases was the very slight degree of atrophy which developed during the entire course of the disease and which might easily be due to the immobilization. In one case von Pirquet's tuberculin test was used and a positive reaction resulted, but strange to say, that patient recovered more quickly than any of the others under continued immobilization and crutches. In one case, after apparent recovery, a marked talipes cavus with slight equinus developed in the foot of the affected leg and has progressed in spite of treatment, though no definite paralysis can be made out and the hip remains perfectly well. In none of these cases was there any history of preceding infection such as typhoid, measles, scarlatina, or diphtheria, which might account for the acute arthritis. The time required for recovery has varied from ten weeks to ten months.

43. Aneurysm of the Aorta.—This case of aortic aneurysm is reported by Combs because aneurysm of the inferior portion of the arch and the descending thoracic aorta is a rare variety. Death by rupture into the esophagus adds to its unusual features. The tumor pressure on the left recurrent laryngeal nerve caused voice alteration and a brassy cough. In the early stages, on change of position, the pressure was relieved, the patient's voice returned and thus it was that she was thought hysterical. Pressure on the esophagus caused dysphagia. Pressure on the bronchus caused dyspnea. A weak left radial pulse was due to the oblique course of the left subclavian through the thickened aortic wall and the expansion following the ventricular systole partially closed its lumen. Pain was due to erosion of the vertebrae and also to tumor-pressure in general. Had death been delayed the erosion would soon have reached the spinal cord and produced the final symptom of paraplegia. In this case, the diagnosis was especially difficult because on inspection no tumor was in evidence. That rupture of the sac into the esophagus caused the immediate death cannot be denied in view of the large irregular opening.

45. Abstracted in *THE JOURNAL*, June 4, 1910, p. 1893.

Journal of the Oklahoma State Medical Association, Muskogee

December

- 48 The General Practitioner. C. W. Fisk, Kingfisher.
- 49 Cerebral Meningitis. F. B. Erwin, Norman.
- 50 Appendicitis. W. T. Tilly, Muskogee.
- 51 Intestinal Obstruction. J. C. Watkins, Hallett.
- 52 Management of Fractures of the Extremities. J. A. Foltz, Fort Smith, Ark.
- 53 The County Medical Society. D. Armstrong, Mead.

American Journal of Orthopedic Surgery, Philadelphia

November

- 54 *Treatment of Structural Scoliosis. W. Truslow, Brooklyn, N. Y.
- 55 *Apparatus for Treatment of Scoliosis at Night. F. Lange, Munich, Germany.
- 56 *Scoliosis Relieved by Operation on the Transverse Process of One of the Vertebrae. Z. B. Adams, Boston.
- 57 *Pott's Paraplegia. C. F. Painter and G. C. Moore, Boston.
- 58 *Advantages of Braces over Plaster Jackets in Pott's Disease. H. O. Feiss, Cleveland.
- 59 *Support for the Spondylitic Spine by Buried Steel Bars, Attached to the Vertebrae. F. Lange, Munich, Germany.
- 60 Relation Between Clinical Evidence and Pathologic Conditions in Spinal Caries. E. G. Brackett, Boston.
- 61 Physiotherapy in Sacro-Iliac Conditions. F. E. Peckham, Providence, R. I.
- 62 Fracture Dislocation of the Shoulder. A. R. Shands, Washington, D. C.

- 63 *Congenital Absence of the Tibia. T. H. Meyers, New York.
- 64 *Bone Clamps of Aluminum Wire. L. A. O. Goddu, Boston.
- 65 A Portable Apparatus for Applying Jackets in Hyperextension. L. T. Brown, Boston.
- 66 A Splint for Postoperative Hallux Valgus. C. F. Painter, Boston.

54 and 55. Abstracted in *THE JOURNAL*, July 2, 1910, p. 47.

56. Scoliosis Relieved by Operation.—In this case the operation consisted of excision of the lateral process of the fifth lumbar vertebra for abnormal development with scoliosis. The patient suffered considerable discomfort following the operation and complained of the right leg being "dead and immovable." Examination showed knee-jerks active and equal on both sides. There was no apparent sensory disturbance; nor was there swelling or discoloration of that extremity. The general condition was good. The patient suffered slight pain in the wound, but had an uneventful recovery. A few days after operation a plaster jacket was applied. When first allowed to walk the patient shuffled the right foot and complained of hyperesthesia of the dorsum of the foot. Her recovery was eventually a very satisfactory one.

57, 58 and 59. Abstracted in *THE JOURNAL*, June 11, 1910, p. 1995.

63. Congenital Absence of the Tibia.—Myers operated on this patient in 1905 for congenital absence of the tibia. He transplanted the head of the fibula, and did an arthrodesis at the ankle joint. The result is excellent. The shortening, measured from the anterior superior spine to the ball of the foot where the weight is borne, is now 2 inches, of which three-fourths is in the femur. The shortening was originally $1\frac{3}{4}$ inches. The right (affected) calf is $\frac{3}{4}$ inch smaller than the left. The foot is fixed at 135 degrees. There is no hyperextension and no rotation possible at the knee. The boy can extend his leg to 165 degrees strongly and flex it to 90 degrees. The ankylosis at the ankle is firm.

64. Bone Clamps of Aluminum Wire.—This clamp is made of aluminum wire, gauge 16 or more, according to the strength required, of any desired length, and with one or more loops at each end, through which screws of deep thread are inserted and thus the clamp is fastened to the bone. The advantages of the use of this clamp over that of the ordinary bone plate or the silver wire, according to Goddu, are as follows: It has been shown that of all materials aluminum produces the least irritation to the tissues; the wire being round, the line of contact with the periosteum is necessarily very slight; even at the time of operation this clamp may readily be bent and made to conform with any deviations of the bones and still maintain its tensile strength; lastly, it can be so applied as to have no contact with the seat of disease. If it becomes necessary to remove the clamp, a small incision may be made in the skin over the site of one end of the clamp, the screws removed and the loops cut off and taken out; a similar incision may be made at the other end and after removing the screw the remaining portion of the clamp can be withdrawn. It has been shown in three incisions of the knee that the patients have experienced decidedly less pain with fixation by bone clamps or plates. The most striking feature in the use of these aluminum clamps is the almost entire absence of pain after operation.

Southern California Practitioner, Los Angeles

December

- 67 Strabismus in Infancy. F. Baker, San Diego, Cal.
- 68 Stone in the Bladder and Urethra in Children. L. B. Morton, Pasadena.
- 69 Cholelithiasis Simulating Appendicitis—Dislocation of Liver. R. Brown, Santa Barbara.
- 70 Liver Abscess. W. J. Barlow, Los Angeles.
- 71 Mental Defects Following the Use of Alcohol. J. T. Fisher, Los Angeles.
- 72 Present Status of Abdominal Drainage. C. P. Thomas, Los Angeles.
- 73 Mummified Fetus. R. L. Alexander, Tempe, Ariz.
- 74 Influence of Mixed Blood on the Susceptibility to Infection in the American Indian. R. E. Thomas, Phoenix, Ariz.

Military Surgeon, Washington, D. C.

December

- 75 The Status of the Medical Corps of the National Guard, in Relation to the Army, the Navy and the Public Health and Marine-Hospital Service. J. K. Weaver, Norristown, Pa.
- 76 *Tincture of Iodin in the Surgery of War. N. Antelo, Buenos Aires, Argentine Republic.

- 77 *Treatment of Lobar Pneumonia. E. Jurado y Gama, San Luis Potosi, Mexico.
78 Treatment of Hemiplegia Resulting from Apoplexy. K. S. Yau, China.
79 New Instrument Case of the French Army. Ruotte.
80 *Prophylaxis of Venereal Diseases in the United States Army. L. M. Maus, U. S. Army.
81 *What Can the Navy Do with Its Tuberculosis? C. T. Hibbett, U. S. Navy.

76, 77, 80 and 81. Abstracted in THE JOURNAL, Dec. 24, 1910, pp. 2257 and 2258.

Ophthalmic Record, Chicago

December

- 82 Ophthalmic Hospitals in Egypt. A. F. MacCallan, Egypt.
83 Two Cases of Interstitial Keratitis and One of Optic Neuritis Treated by Salvarsan. R. Denig, New York.
84 Attachment of the Teudon After Advancement. D. W. Wells, Boston.
85 Parinaud's Conjunctivitis. G. H. Mathewson, Montreal.
86 *Extraction of Cataract in Its Capsule. V. H. Hulen, Houston, Texas.

86. **Extraction of Cataract in Its Capsule.**—Fixing the lens by a small vacuum cup, and gently lifting out of the eye the cataract while yet contained in its capsule, are the essential features of Hulen's operation, one which he has employed successfully in six cases. The operation is done as follows: The preliminary preparations are the same as for an ordinary cataract extraction except the use of atropin in the eye an hour previously. The speculum is introduced and the section made in the limbus includes one-half of its circumference; raising a conjunctival flap above, a small iridectomy is done and the edges of the coloboma replaced. The speculum is now removed and a drop of cocain instilled. Should blood in the anterior chamber exclude the pupil it is removed by a gentle stream of warm saline solution. Next the assistant holds the upper lid with a retractor, controlling the lower lid with the other hand; under no circumstances must he now allow pressure on the globe until the eye is finally closed. The extractor is introduced through the section from the convenient side and gently let down on the lens, making sure the cup is everywhere free of the pupillary margin so that the iris may not be pinched subsequently. The extractor being held in the operator's right hand, the left is free for use as required. The patient should look straight ahead, never down. With the cup resting over the center of the anterior capsule the nurse turns the cock at the gage, the vacuum thus connected will cause the cup to grasp the cataract more rigidly. The extractor is then somewhat elevated and rotated to sever the suspensory ligament; now with the upper edge of the cup slightly raised the cataract in its capsule is slowly and gently lifted out, passing easily through the pupil and section. The edges of the coloboma are replaced and the subsequent management of the case is not different from the usual method.

Virginia Medical Semi-Monthly, Richmond

December 23

- 87 Ophthalmia Neonatorum. A Plea for Legislative Enactments for Its Prevention. J. A. White, Richmond.
88 Vagaries of Disease in Infancy and Childhood. E. P. Copeland, Washington, D. C.
89 Value of Sanatorium Treatment in Pulmonary Tuberculosis. W. D. Tewksbury, Catawba, Va.
90 Differential Diagnosis of Alcoholic Coma from Other Forms of Coma. L. D. Mason, Brooklyn, N. Y.
91 Syphilis Treated by Salvarsan. M. C. Syce, Richmond.

Vermont Medical Monthly, Burlington

December

- 92 Medicine of To-Day and of Thirty Years Ago. J. C. Rutherford, Providence, R. I.
93 Extra-Uterine Pregnancy. E. H. Ross, St. Johnsbury.
94 Auto-Intoxication. E. W. Crane, Hardwick.
95 Diseases of the Upper Abdomen and Their Differential Diagnosis. C. J. Rumrill, Randolph.

Archives of Internal Medicine, Chicago

December

- 96 *Estimation of Chlorids in the Stomach Contents from Normal and from Atrophic Infants. A. H. Wentworth, Boston.
97 Effect of Treatment on the Wassermann Reaction. H. F. Swift, New York.
98 *Normal Percentages of the Different Varieties of Leukocytes in Infants and Children. O. M. Schloss, New York.
99 *Studies of Malaria in Panama: 1.—Clinical Studies of Malaria in the White Race. W. V. Brem, Cristobal, Canal Zone.

- 100 Pernicious Anemia Mistaken for Amebic Ulcerative Colitis. W. W. Herriek, New York.
101 The Duodenal Contents in Man. M. Einhorn and J. Rosenbloom, New York.
102 *Human and Animal Typhoid Agglutinins. R. S. Austin and C. Frothingham, Jr., Boston.
103 Cutaneous and Conjunctival Tuberculin Tests in the Diagnosis of Pulmonary Tuberculosis. L. Hamman and S. Wolman, Baltimore.
104 Histologic Study of the Sweat Glands in Cases of Chronic Nephritis. H. U. Williams, Buffalo, N. Y.
105 *The Lenticular Zone and Anarthria. A. Gordon, Philadelphia.
106 *A Quick Macroscopic Typhoid Agglutination Test. C. C. Bass and J. A. Watkins, New Orleans.

96. **Chlorids in Stomach Contents of Infants.**—The observations recorded in Wentworth's paper are a continuation of work briefly alluded to in a previous article. The purpose of this work is to discover whether or not the hydrochloric acid of the gastric juice is diminished in cases of infantile atrophy. In the first series of observations, the stomach contents were obtained one hour after eating from a limited number of atrophic infants fed on mixtures of cow's milk. The determinations were made by Sjöquist's method. The results showed a diminished amount of hydrochloric acid in the stomach contents in every case. The same series of observations included determinations of hydrochloric acid in the stomach contents from a limited number of well-nourished and apparently healthy infants fed on mixtures of cow's milk. The results in these cases were variable. In four cases the amount of hydrochloric acid was much greater than in the cases of atrophy. In three cases the amount of hydrochloric acid approximated that of the atrophic infants.

As these results were not conclusive, a second series of observations were made with a view to controlling the first series. The same method of analysis was employed. Unfiltered stomach contents were used in every case. The diagnosis of infantile atrophy was made from clinical evidence alone. Most of the cases were under observation for several weeks. The Sjöquist method rarely showed more than a trace of hydrochloric acid in the stomach contents from atrophic infants fed on cow's milk mixtures. Out of twenty one determinations made of hydrochloric acid in the stomach contents obtained from eight infants, ten showed a percentage of hydrochloric acid between 0.01 and 0.05, and eleven showed a percentage of hydrochloric acid between 0.002 and 0.009. The stomach contents from nine well-nourished infants showed a diminished amount of hydrochloric acid. The diminution of hydrochloric acid corresponded closely to that found in about one-half of the determinations made on the above-mentioned atrophic infants. Out of twelve determinations of hydrochloric acid in the stomach contents obtained from nine infants, one showed 0.12 per cent., one showed 0.09 per cent., nine showed percentages between 0.01 and 0.05, and one showed 0.005 per cent. hydrochloric acid. Thus the diminution of hydrochloric acid, although it was marked, was never so extreme as in one-half of the determinations obtained from atrophic infants. Examinations of the stomach contents obtained from the same atrophic infants at different periods of time after eating, and without any change in the diet, rarely showed any marked variations in the quantity of hydrochloric acid present.

Wentworth does not believe that the results of these observations prove that a marked diminution of hydrochloric acid in the gastric juice is an essential factor in the production of infantile atrophy, although they do show that this diminution is constant. On the other hand, considerable evidence is afforded by several of the observations that it is possible for atrophic infants to gain rapidly in weight and yet produce little hydrochloric acid in the gastric juice. This appears to show that the quantity of hydrochloric acid in the gastric juice is not an important factor in recovery from infantile atrophy.

98. **Normal Percentages of Leukocytes in Children.**—A series of differential blood-counts were made by Schloss on eighty apparently normal infants and in children between 3 and 12 years of age. The investigation was undertaken primarily to determine, if possible, the normal percentages of the cells with eosinophilic granules. Most of the children were from the poorer classes, but all cases of manifest illness were excluded. Cases were also excluded in which there was a

history of any disease recognized as a cause of eosinophilia. The following precautions were taken in the attempt to eliminate helminthiasis: The counts on children between 1 and 12 years of age were made only in instances in which the history and a previous examination of the feces was negative. In infants under 1 year of age, the feces were examined in cases showing more than 5 per cent. of eosinophil cells. The eosinophil cells were over 6 per cent. in seven of fifteen infants under 2 months of age; the highest percentage was 9.7. In two additional cases the percentage was greater than 5; in one, 5.2 per cent; in another, 5.3 per cent. The highest percentages were found in infants between 2 days and 2 weeks of age. In none of the fifty-five infants and children between 2 months and 12 years of age was the percentage of the eosinophil cells above 6. In two cases the eosinophil cells were 6 per cent. In all other cases the percentage was less than 5. In apparently normal infants from 3 days to 2 months of age, the eosinophil cells were frequently above the percentages normal for adults. In normal individuals between 2 months and 12 years of age, when the known causes of eosinophilia were excluded, the eosinophil cells were rarely above 5 per cent. and never greater than 6 per cent., and were present in approximately the same relative proportion as in adults. It therefore only seems fair to conclude, says Schloss, that there is no physiologic eosinophilia in childhood; that 5 per cent. of eosinophil cells may be considered as the upper limit of normal, and certainly, more than 6 per cent. as pathologic.

99. Malaria in Panama.—In the "white fever wards" of Ancon Hospital, during 1905 and 1906, 1,107 of 1,300 patients were malarial, a morbidity of 85 per cent. The malarial mortality was 0.54 per cent.; the mortality from other diseases, 4.6 per cent., or about nine times that of malaria. Malarial parasites were found in the peripheral blood of 705 patients, or 63.7 per cent. of the malarial cases. The estivo-autumnal parasite alone was diagnosed 447 times, or in 63.4 per cent. of the positive cases; the tertian alone, 232 times, or in 32.9 per cent.; mixed infections with estivo-autumnal and tertian organisms were found in 26 cases, 3.7 per cent. No quartan organisms were found in this series. The estivo-autumnal percentage is probably slightly too small, and the tertian too large. Three systems of quinin administration were tested: (1) 30 grains daily, 3 doses of 10 grains each, at 6, 8 and 10 a. m.; (2) from 30 to 40 grains daily, given in 5-grain doses every 4 hours, with 2 extra doses of 5 grains each given in obstinate cases before the approximate time for the onset of paroxysms, at 10 a. m. and 2 p. m.; (3) 20 grains daily, 2 doses of 10 grains each, at 6 and 8 p. m. The febrile period was approximately equal under Systems 1 and 2; it was much longer under System 3. All things considered, System 1 seemed to be preferable for the treatment of ordinary infections in male adults.

Several points are emphasized by Brem. The great majority of malarial paroxysms, both estivo-autumnal and tertian, occurred between the hours of 8 a. m. and 8 p. m. Acquired partial immunity or tolerance for the malarial poison is marked after the first infection. The febrile period and the severity of the symptoms decrease markedly after the first attack, remain approximately stationary in the second, third and fourth attacks and then undergo another marked decrease. For the quinin diagnosis test, the drug should be given in the doses of Systems 1 and 2 to male adults. In other cases the quantities may be regulated by the weight of the patient. In first attacks of malaria, the fever of two out of three estivo-autumnal infections will reach and remain normal within three days. If a marked remission and a much-decreased fastigium do not occur on the fourth day, the fever is not malarial and quinin may be discontinued. If a remittent or intermittent fever continues unabated for more than four days, it is not of malarial origin. First attacks may show mild or rudimentary paroxysms of fever for six, seven or eight days. In secondary attacks of malaria, fever usually ceases within three days, and a remittent or intermittent fever that persists unabated for three days is not malarial. Four days is the maximum time to persist in the test. All tertian infections are controlled within three days. Great care must be used to insure the absorption of quinin,

and the patient must be kept at rest in bed. Chronic malaria and malarial cachexia are much-abused terms; they describe a condition and not a disease, and should be used only in elaboration of a diagnosis of malarial fever, for which proper cause should be shown. If parasites are not demonstrable and if careful examinations appear to exclude other diseases, the quinin test may be used in malarious regions. If an anemic (cachectic) condition is due to malaria, a partial immunity or tolerance has been acquired, and quinin causes a rapid cessation of fever and other symptoms. If these do not disappear within three days, or if the anemic condition does not improve rapidly, malaria is not the origin of the trouble, and another diagnosis must be sought. In using the test, the patient must be kept at rest in bed, and the absorption of quinin must be assured.

102. Human and Animal Agglutinins.—The points brought out by Austin and Frothingham are: The agglutinating power of the serum in typhoid usually reaches its height in about the third or fourth week. Occasionally at this time a positive reaction will be obtained at a dilution of 1 to 600 or 1 to 800; as a rule, only at a dilution of about 1 to 250. In rabbits, agglutinins can be developed by injecting typhoid bacilli intraperitoneally. These experimentally produced agglutinins apparently can be increased in strength as long as the bacilli are injected. The serum from these rabbits when injected into other rabbits causes a transitory agglutinating power to appear in them. This power appears the first hour after injection, gradually increases in strength until the third hour, then subsides and has disappeared about the seventh hour. These time-relations are practically the same, whether the serum is given subcutaneously or intravenously. The height of the agglutinating power is greater after intravenous than after subcutaneous injection. The agglutinating power in the injected animals is apparently simply a dilution of the agglutinating power injected. Even repeated injections of serum fail to stimulate a rabbit to form agglutinins. If comparison may be drawn from animal experimentation it should be possible in typhoid to administer serum in doses of practical size so as to produce more agglutinating power than ordinarily occurs in the course of the disease. In order to keep up this agglutinating power the serum should be given every few hours. The serum should preferably be given intravenously.

105. Lenticular Zone and Anarthria.—A case is reported by Gordon which he believes demonstrates clearly that, while certain features of Marie's revised view on aphasia are not at all in conformity with pathologic findings, there are nevertheless some phases which can be explained, if not totally, at least to a large degree, on the basis of his so-called lenticular zone. The anatomic and clinical conditions of the case are particularly conspicuous with regard to the most important point of Marie's contention, namely, the question of anarthria. The patient presented at the time of his admission to the hospital and for two subsequent months, complete right hemiplegia, alexia and verbal amnesia. The latter two phenomena were not complete. Particularly important was the total absence of motor aphasia and dysarthria. For two months the patient's condition remained unaltered. One morning he was found unconscious and agitated with convulsive movements in his right arm and leg and frothing at the mouth. The attack lasted a minute, but for two subsequent hours the arm and leg remained in a state of extreme rigidity. Moreover, the least touch of the leg or arm would produce a convulsive movement. From the moment he lost consciousness, and during the following twenty-four hours of his life, he presented a conjugate deviation of the head and eyes to the right. An attempt to turn his head to the left would not correct the direction of the eyes. During the first few hours he could not voluntarily turn the head to the left, but in the last few hours he was able to make attempts to do it, but only attempts, as he was unable to hold it in the right direction longer than for a fraction of a minute. The same can be said about the eyes. In addition to this phenomenon, the patient was unable to protrude his tongue, move his lips or utter a word. Soon he presented difficulty of swallowing and on the twenty-fifth hour he expired.

The brain and cord were removed. Destruction of the lenticular and caudate nuclei was complete, and yet the patient did not present the least indication of dysarthria. His speech, so far as the articulation was concerned, was clear and distinct. He did, however, present a partial word-blindness and partial verbal amnesia, all symptoms of sensory aphasia. The few symptoms of sensory aphasia observed in this case correspond in reality to Marie's contention, but are at variance with the old conception concerning Wernicke's zone. The angular gyrus, the supramarginal gyrus, the posterior portions of the first two temporal convolutions, the insula and the frontal convolution, were found intact, macroscopically and microscopically. In support of Marie's conception of sensory aphasia Gordon mentions also the condition of the inferior longitudinal bundle, which was partly destroyed. The conclusion to which this observation leads Gordon is that the so-called lenticular zone of Marie may play a certain but not considerable rôle in sensory aphasia. As to its being a center of anarthria, the present case proves that its destruction does not interfere with phonation and articulation of spoken words. Consequently, if Marie's conception of aphasia may be applicable to a certain series of cases, as he has shown, it does not hold its ground in every case in which the sensory or motor speech may become involved.

106. Quick Macroscopic Typhoid Agglutination Test.—The method proposed by Bass and Watkins for making the typhoid agglutination test requires an ordinary microscope slide, or other piece of glass, a surgical needle or other puncture needle, and an ordinary medicine dropper. The material required is 1 drop of a suspension typhoid bacilli. The time required to make the test is less than two minutes. No special bacteriologic or laboratory experience is necessary; and the test, when properly performed by one with even limited experience, is as reliable and accurate as can be made by an expert bacteriologist within an hour with a microscope and the facilities of a laboratory. The test may be made at the bedside in two minutes. The material consists of a suspension of 10,000 million dead typhoid bacilli per cubic centimeter in 1.7 per cent. sodium chlorid solution to which 1 per cent. of liquor formaldehydi is added. The blood is diluted by dissolving it in approximately four times its volume of water. One or 2 drops of this diluted blood are mixed on a microscope slide or other piece of glass, with an equal quantity of test fluid. The slide is tilted from side to side or end to end in order to keep the mixture flowing back and forth. If the reaction is positive, a grayish, mealy sediment appears within one minute; usually in less than that time. This consists of agglutinated bacilli and is easily seen with the unaided eye. It appears in the fluid around the edges first and tends to collect there. If the agitation is continued the clumps increase in size for two or three minutes. With blood that gives a weak reaction the appearance of the sediment is not so rapid as with stronger reacting blood. It is useless, however, to continue the test longer than two minutes, for if the reaction has not occurred in two minutes it will not occur at all. When the reaction is negative, no agglutination occurs, and the mixture remains as clear and unchanged as when placed on the slide.

Therapeutic Gazette, Detroit

December

- 107 Prospect of Salvarsan Coming into General Use. S. L. Olsho, Philadelphia.
- 108 Ocular Affections in Cardiovascular Disease. S. D. Risley, Philadelphia.
- 109 Partial Detachment of a Normally Situated Placenta—Concealed Intra-Uterine Accidental Hemorrhage. W. H. Wells, Philadelphia.
- 110 Infectious Arthritis. J. W. Torbett, Marlin, Texas.

Chicago Medical Recorder

December

- 111 Echinococcus Cyst of the Liver. L. A. Greensfelder, Chicago.
- 112 Use of the Medical Library. B. Holmes, Chicago.
- 113 Salvarsan. E. H. Mensing, Chicago.
- 114 Foreign Bodies in the Ear. J. C. Warbrick, Chicago.

Detroit Medical Journal

December

- 115 Dysmenorrhea. E. T. Abrams, Dollar Bay, Mich.
- 116 Salvarsan in Syphilis. H. R. Varney and R. C. Jamieson, Detroit.

Journal of Abdominal Psychology, Boston

December-January

- 117 Action of Suggestion in Psychotherapy. E. Jones, Toronto.
- 118 *Mental Mechanisms in Dementia Præcox. A. Hoch, New York.
- 119 *Nature and Conception of Dementia Præcox. A. Meyer, Baltimore.

118 and 119. Abstracted in THE JOURNAL, July 16, 1910, p. 248.

Albany Medical Annals

December

- 120 The Portals of Entry in Tuberculosis. H. Chiari, Strassburg.
- 121 Problem of the Acute Mental Case. J. M. Mosher, Albany.
- 122 Anesthesia in Normal Labor. P. T. Harper, New York.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December

- 123 *Catalytic Activity of the Blood in the Toxemias of Pregnancy. M. C. Winternitz and F. C. Ainley, Baltimore.
- 124 Acute Pancreatitis. J. W. Poucher, Poughkeepsie, N. Y.
- 125 *Cesarean Section by the Small Median Incision Above the Umbilicus. A. B. Davis, New York.
- 126 Adenocarcinoma of the Kidney. J. G. Sherrill, Louisville, Ky.
- 127 *Breast of the Expectant Mother: Its Care Before and During the Period of Lactation. F. Reeder, St. Louis.
- 128 Progress of the Year in Gynecology. S. M. Brickner, New York.
- 129 Progress of the Year in Obstetrics. G. L. Brodhead, New York.
- 130 *Acute Hemorrhagic Pancreatitis. J. W. Keefe, Providence, R. I.
- 131 *Conservatism in Operations on the Uterine Appendages. L. C. Morris, Birmingham, Ala.
- 132 Pathology of Gynecology and Obstetrics. R. T. Frank, New York.
- 133 Clinical Aspect of Recent Researches in the Chemical Physiology of Infants. J. Zahorsky, St. Louis.
- 134 Results of Infant Feeding with Milk from City-Kept Cows. E. V. Davis, Chicago.
- 135 Method of Feeding of More Importance than Choice of Food in Substitute Feeding of Infants. C. Douglas, Detroit.
- 136 Nasal Diphtheria in Infants. G. D. Scott, New York.

123. Catalytic Activity of the Blood.—In the hope of being able to demonstrate the presence or absence of renal insufficiency in the various types of toxemia of pregnancy, Winternitz and Ainley have determined the catalytic activity of the blood in a number of such cases. They employed a modification of the method described in detail by Kastle and Loevenhardt. Ten clinically normal patients were studied, in each of whom several readings were made at varying intervals before, during and after labor, but in no instance did the readings show any appreciable variation from those noted in normal non-pregnant individuals. Such findings suffice to show that neither pregnancy, labor nor the puerperium produce any appreciable change in the power of the blood to split hydrogen peroxid, which always falls within the limits of physiologic variation. The test was then applied in ten cases of toxemia of pregnancy. In seven the catalytic activity of the blood showed no changes, while in three it was found to be definitely decreased. The results obtained from a study of the catalytic activity of the blood during life and of the tissue extracts, as well as the autopsy findings, are all in agreement. That is to say, there being no renal insufficiency, there was no decrease in the catalytic activity of either the blood or the tissue extracts, which is in marked contrast to the results obtained in the cases of chronic nephritis and uremia, uncomplicated by pregnancy, which have been previously reported. In them, accompanying the renal insufficiency, the authors were able to demonstrate a corresponding decline both in the activity of the blood and of the tissue extracts. In two fatal cases it was positively demonstrated that the patients died of eclampsia; the eclampsia was independent of renal insufficiency; the absence of renal insufficiency, shown before death, by the normal catalytic activity of the blood, was substantiated by autopsy findings. The authors conclude, therefore, that the determination of the catalytic activity of the blood appears to offer a means of differentiating the toxemias of pregnancy into two groups. In certain instances the catalytic activity shows no departure from normal these include cases of eclampsia and other toxemias without marked renal involvement. In certain other cases the catalytic activity of the blood is decreased; these include patients suffering from chronic nephritis in whom the increased work thrown on the kidneys by the pregnancy brings about renal insufficiency, as well as cases of true eclampsia and other toxemias with marked renal involvement.

125, 130 and 131.—Abstracted in THE JOURNAL, Oct. 15, 1910, pp. 1402 and 1403.

127. Abstracted in THE JOURNAL, Oct. 8, 1910, p. 1313.

Denver Medical Times and Utah Medical Journal, Denver

December

- 137 Some Problems Before the Medical Profession. W. N. Beggs, Denver.
- 138 Edema of the Glottis. F. E. Waxham, Denver.
- 139 Mucous Colitis: Etiology and Treatment. H. Heath, Denver.
- 140 Whooping-Cough. R. J. Smith, Logan, Utah.
- 141 Medical Education and Legislation. D. C. Budge, Logan, Utah.
- 142 The Physicians in Ancient Rome. L. Hoefell.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

December 10

- 1 Surgical Versus the Expectant Treatment of Intracranial Tumor. Sir V. Horsley.
- 2 *Cancer. A. P. Gould.
- 3 *Results of Bronchial Obstruction. G. N. Pitt.

December 17

- 4 Plea for Graduation in Laryngo-Otology on a Broad Basis. P. W. Williams.
- 5 Treatment of Gastric and Duodenal Ulcer. E. C. Hort.
- 6 Unusual Case of Toxic Dermatitis. C. Pernet.
- 7 *Variation Among Bacteria. W. J. Wilson.
- 8 Therapeutic Advantages of Using Mercury in the Colloid Form. G. A. Stephens.
- 9 Etiology of Iritis. W. M. Beaumont.
- 10 *Normal Orthograde Posture. R. H. Seanes-Spicer.

2. Also published in the *Lancet*, Dec. 10, 1910. See abstract No. 11.

3. Also published in the *Lancet*, Dec. 10, 1910.

7. **Variation Among Bacteria.**—Wilson isolated a bacillus from the urine of a patient, which is interesting from the fact that it possesses characters intermediate between those possessed by the *B. typhosus* and the *B. coli communis*. The patient was probably an "effective" typhoid bacillus-carrier. Four years ago an epidemic of typhoid occurred in a fashionable district of Belfast, and the cases were centered around a certain milk supply. On investigation, it was found that one of the milkers had recently suffered from "influenza," complicated with jaundice, and her blood gave a well-marked positive Widal reaction in a 1 to 50 dilution. When the supply of milk from this dairy was stopped, the epidemic came to an end. There were thirty cases reported, several of which terminated fatally. This woman developed Bright's disease from which she died. Wilson obtained a specimen of the urine a week before she died, and it was from it that he isolated a bacillus which formed acid but no gas in glucose media, and which fermented lactose at 22 C. but not at 37 C. In not developing gas in glucose media but forming some from mannite it resembled certain colon bacilli of the "anaerogenes" class previously described by Wilson, and which form connecting links between the *B. coli* and the *B. typhosus* group of microorganisms.

10. **The Normal Orthograde Posture.**—The normal orthograde posture is defined by Seanes-Spicer as that in which the position of gravity of the head is vertically over the center of the base of support. The vertical plumb-line joining these points bisects the median transverse occipito condyloid axis, and also the intercotyloid axis, passing through also the center of gravity of the mass made up of the trunk and upper limbs. The center of gravity of the head, that of the trunk, and the center of the base of support, are actively distanced as much as possible from each other by fullest possible extension of the vertical axis in which the above points lie with each in-breath until the extension becomes automatic and unconscious. This posture, Seanes-Spicer says, should be the basis of all physical education for the young. It is the ideal we should seek for every child, the one we should endeavor to get stereotyped by growth in form and structure, the one to which such child should automatically return after action or relaxation. The subject trained thus has an easy and graceful carriage, a straight back, well-poised head, a

raised, expanded and mobile thorax well distanced from the pelvis, a flat abdomen, and all the internal organs in constant correct position for best work. The postures permitted and taught by some physical culturists with retracted head, stiff neck, protruded abdomen, hollowed back, and bent knees, do not comply with this definition, and are absolute caricatures of the normal erect posture, and directly produce deformity and disease. Moreover, the normal erect posture is the fundamental essential for all efficient respiration, correct voice production and speaking. Lastly, the influence of the normal erect posture in the prevention and treatment of disease is of a potency as yet but barely suspected.

Lancet, London

December 10

- 11 *Cancer. A. P. Gould.
- 12 Results of Bronchial Obstruction. G. N. Pitt.
- 13 Theory and Practice of the Treatment of Syphilis with Salvarsan ("606"). J. McIntosh and P. Fildes.
- 14 *A Pedigree Showing Biparental Inheritance of Webbed Toes. H. P. Newsholme.
- 15 *An Obscure Case of Peritonitis. R. H. Norman.
- 16 Uterine Cervical Polypus Undergoing Malignant Degeneration. H. Maenaughton-Jones.

December 17

- 17 The Aftermath of Eyestrain. S. Stephenson.
- 18 *Specific Diagnosis of Pulmonary Tuberculosis. A. C. Inman.
- 19 Tuberculous Meningitis. W. B. Warrington.
- 20 Etiology of Beriberi. H. Fraser and A. T. Stanton.
- 21 Primary Carcinoma of the Appendix. A. M. Kennedy.

11. **Cancer.**—Gould makes a brief review of the present status of research into the cause and treatment of cancer, discusses earnestly the so-called cancer immunity, which is evidenced in one or more of the following ways: (1) the power of living cells to conform to the law of normal development and to avoid that increased multiplication, defective differentiation, and tendency to intrude themselves into, and grow in, neighboring cell territories, which together connote cancer; (2) opposition to the intrusion of cancer cells into, and their development in, heterologous tissue; (3) inhibition of the growth of cancer or destruction of living cancer cells. Thus the public has been depressed by the oft-repeated statement that one out of every eight women who reach the age of 35 dies from cancer; and of the men who attain 35 years, one of thirteen dies from cancer. This no doubt is true, but why, asks Gould, not express the same facts in terms of immunity, and say that seven out of the eight women and twelve out of thirteen men of 35 years of age will not die from cancer.

Of the second kind of immunity—the opposition to the intrusion of the cancer cells into the heterologous tissue—there is plenty of evidence. There is, first of all, the difficulty in cancer grafting, and then the fate of many of the cancer cells and minute cancer emboli that get into lymphatics and blood capillaries; the majority of them are overwhelmed by the opposing influence of the endothelial cells, and only one here and there is ever able to survive. There is a force of immunity which can protect, against the chief mischievous power of malignancy.

The third form of immunity is what is popularly known as the "cure of cancer"—the disappearance of cancerous growth. Those who are studying the disease in mice report that in these animals it is quite a frequent occurrence for a grafted cancerous growth, after attaining some size, to slowly shrink and disappear, and in some series of experiments a large proportion of the grafts that have "taken" have, after a period of growth, spontaneously vanished. In human pathology, it is a still less frequent fact, but it undoubtedly is observed. It is most frequently seen in the absorption and disappearance of small secondary nodules in the skin and subcutaneous tissue. It is occasionally witnessed on a grander scale. Gould cites nine such cases which occurred in his own practice.

14. **Biparental Inheritance of Webbed Toes.**—It was discovered accidentally by Newsholme, during a routine examination, that the second and third toes of each foot of patient were webbed as far as their terminal phalanges. Further inquiry showed that this deformity occurred through three generations and involved twenty-two members of a family of twenty-nine.

15. **Peritonitis.**—Norman's patient, a man, aged 33, complained of severe continuous pain in the epigastrium, both hypochondria, and the right iliac region. There was no point of special tenderness. He had vomited several times that day, the vomit being gastric only. The abdomen was distended and moved with respiration. Nothing abnormal could be felt. The temperature was 102 F. The bowels were constipated. On the next day he was in much the same condition, the pain being a little less after some small doses of opium. The temperature at 9 p. m. was 104 F. The bowels had been opened by enema, and subsequently two loose, bright yellow motions were passed. The color of these motions suggested typhoid, but no other symptom pointed to that diagnosis. He had been ailing a week or ten days, feeling languid and having a poor appetite, but he kept at his business. A positive Widal reaction was reported. On the third day, the abdomen was much distended, with little or no movement in respiration, general tenderness, but no rigidity. Norman suspected perforative peritonitis, but could not satisfy himself that this was so, the liver dulness being normal. The grave abdominal condition pointed to the immediate need of a celiotomy. This was done but the patient never rallied. A mass of inflamed tissue was found behind the stomach in which were several broken-down caseous glands. There was a cavity in this mass, and from it one sinus led into the stomach. The ulcer in the stomach was not a recent one. Another sinus led to a caseous mesenteric gland, and two others led into the peritoneum. The openings into the peritoneum were apparently recent. There were a number of caseous mesenteric glands, and acute peritonitis was present. The right lung was bound down by old adhesions. There was no evidence of typhoid fever. Fourteen or fifteen years ago tuberculous glands had been removed from the neck.

18. **Pulmonary Tuberculosis.**—Of twenty-six adults examined by Inman, eighteen had tubercle bacilli in the sputum; and of these, sixteen had tubercle bacilli in the feces; in two cases, examination of the feces gave a negative result. Eight of the patients examined had no tubercle bacilli in the sputum, and of these, seven had none in the feces, while in one case tubercle bacilli were found in the feces. Inman believes that these results suggest that the appearance of tubercle bacilli in the stools of early cases of pulmonary tuberculosis, and in the absence of intestinal tuberculosis, results from the swallowing of sputum secreted in an open tuberculous focus in the lungs. Reviewing, as a whole, the positive results of examinations of the opsonic index made with a view to diagnosis, the following four types of variation are defined: A. An index low before, but rising after exercise. B. An index low before and after exercise (insufficient exercise). C. An index high before and falling after exercise. D. An index high before and after exercise.

Taking 250 cases of doubtful pulmonary tuberculosis in which the tuberculo-opsonic index was estimated before and after exercise for diagnostic purposes: The index remained within normal limits in ninety-one cases. The index started low and rose after exercise in fifty-six cases. The index started low and remained low after exercise in forty-one cases. The index started high and fell after exercise in fifty-four cases. The index started high and remained high after exercise in eight cases. So that we have this very striking result: Of 159 cases in which the index varied outside the normal limits, ninety-seven started low, and of these, fifty-six rose as the result of exercise, and forty-one remained low after exercise; sixty-two started high, and of these, fifty-four fell after exercise, and eight remained high. By examining four specimens of blood—the first being taken at rest, the second immediately after exercise, and two more during subsequent rest—it was found that the positive curves conformed in the majority of cases to two types. Those whose index was high in the morning before exercise gave a curve with the apex downward as the result of the exercise, while those with an index starting low in the morning made a curve with the apex pointing upward as the result of exercise.

Inman suggests that the groups A and B point to a localized chronic tuberculous infection, which, however, calls for treatment and must still be regarded as active. The high indices

of groups C and D may be regarded as significant of greater activity of disease in that they imply an increase in the elaboration of protective substances in the serum. Inman concludes that in the early diagnosis of pulmonary tuberculosis the recent methods of concentration should always be employed for the exposition of tubercle bacilli in the sputum and feces. The difficulty of interpreting the results of the various tuberculin tests seriously limits their value in the diagnosis of active pulmonary tuberculosis. A positive opsonic index test is of undoubted value in the diagnosis of active pulmonary tuberculosis. A negative opsonic index test must be taken with reserve. The interpretation of the result rests with the clinician, who can take into consideration all the additional factors in the diagnosis of the case.

Journal of Tropical Medicine and Hygiene, London

November 15

- 22 Experiences in Yucatan. II. Scidelin.
- 23 Filariasis in Morocco. G. Breeze.
- 24 Development of "Green-Bottle Fly" at Sierra Leone, West Africa. R. W. Orpen.
- 25 *Fasciolopsis Buski* in Natal. B. Nicol.
- 26 Duration of Infection of Malaria. G. C. Low.

Clinical Journal, London

November 23

- 27 Typhoid. W. H. White.
- 28 Secondary Cancer of the Ovary. J. Bland-Sutton.
- 29 Pathology of Certain Ovarian Tumors. B. H. Spilsbury.

November 30

- 30 Gynecologic Therapeutics. F. McCann.
- 31 Hemorrhoids. A. Baldwin.
- 32 Common Operations. II. S. Pendlebury.

Glasgow Medical Journal

December

- 33 Recent Advances in Hematology. W. K. Hunter.
- 34 Prophylaxis in Obstetrics. A. W. Russell.
- 35 Education of the Very Young Deaf Child. J. K. Love.

Medical Press and Circular, London

November 23

- 36 Common Juvenile Acne. P. Rostaine.
- 37 *Value of a Restricted Diet in Certain Acute Inflammatory Diseases of the Skin. L. D. Bulkley.
- 38 *A Dermatitis Among Flower-Pickers in the Scilly Islands, the So-Called "Lily Rash." D. Walsn.
- 39 Dyspepsia and Gastritis. J. A. Gibson.

November 30

- 40 Diagnosis of Prolonged Pyrexia. F. Taylor.
- 41 Tumor in the Region of the Corpora Quadrigemina. R. T. Williamson.
- 42 Fever from Doubtful or Unknown Causes. H. Plehn.
- 43 Tabard Street and Grotto Place Unhealthy Homes. F. J. Waldo.

37. This is an abstract of a paper read before the Dermatological Section of the British Medical Association and published in full in the *British Medical Journal*, Sept. 24, 1910.

38. Also published in the *British Medical Journal*, Sept. 24, 1910.

Annales de Gynécologie et d'Obstétrique, Paris

December, XXXVII, Nos. 11-12, pp. 721-864

- 44 *Uncontrollable Vomiting of Pregnancy. (Pathogénie et traitement des vomissements incoercibles de la grossesse.) G. Fleux.
- 45 Relations Between Cholelithiasis, Pregnancy and Delivery. J. Audebert and R. Gilles.

44. **Pernicious Vomiting of Pregnancy.**—Fieux declares that the vomiting for which the pregnancy is directly responsible seems to be restricted to the first weeks up to the end of the fourth month. The vomiting which occurs toward the end is due to an entirely different form of toxemia, he thinks. Hypotension is the rule in the early vomiting, while those women developing an eclamptic condition have hypertension. His experiments suggest that the villi of the chorion in the first months of pregnancy induce the production of an antibody which can be revealed by the complement-deviation test during the second and third months, but the findings are negative after the fourth. In certain cases, the tendency to vomiting persists from a psychic automatic action; the neuropath continues to vomit because this early symptom, combined with the idea of being pregnant, has induced a kind of obsession. It is in such cases, he declares, that institutional treatment and isolation are specially useful. In all cases, he continues, the diet should be carefully supervised; sometimes

milk by the teaspoonful may tide the patient past the danger point, or vegetable soups may be better tolerated. In some cases he has had patients retain and thrive on a little sheep brain, thoroughly boiled, mashed and mixed with a lemon-water-ice (*sorbet*), when milk was not retained. Fluids should be supplied in abundance even if infusion is necessary. The main point is to give the patients time to conquer the tendency to vomit by their own reactional resources, as the physician has no direct means of curing the evil tendency. Retention of urine and possibly also a pulse-rate persistently over 100, are important signs that the patient must be relieved at once of the pregnancy. Signs of polyneuritis or jaundice compel immediate evacuation of the uterus, he declares, as they show that the toxemia is getting the upper hand, and he advises against waiting too long. He warns that vomiting during pregnancy must not be confounded with the vomiting of pregnancy; some intercurrent affection may be discovered. He thinks that Copeman's method acts by suggestion; it aims to change conditions by slight dilatation of the uterine cervix with the fingers, detaching the inferior pole of the ovum. He advocates emptying the uterus even in the most apparently desperate cases, as he has witnessed actual resurrections when all seemed lost.

Annales de Médecine et Chirurgie Infantiles, Paris

November 15, XIV, No. 22, pp. 689-724

46 *The Dwelling and the Health of Children. P. Lassablière and E. Schatzmann.

47 School Desks. (Le mobilier scolaire au dernier congrès d'hygiène scolaire.) F. de Courmelles.

46. **The Dwelling and the Health of Children.**—Lassablière and Schatzmann give the details resulting from careful study of conditions in fifteen families of the working classes. The morbidity was in inverse proportion to the size and number of rooms, and the absence of sunlight and defective ventilation give the results that might naturally be expected.

Bulletin de l'Académie de Médecine, Paris

November 22, LXXIV, No. 37, pp. 339-357

48 Reportable Infectious Diseases in the French Colonies. II. Vincent.

49 Necessity for Compulsory Notification of Paratyphoid Fever. H. Vincent.

Presse Médicale, Paris

November 30, XVIII, No. 96, pp. 897-904

50 *Syphilitic Mediastinitis. M. Dieulafoy.

December 3, No. 97, pp. 905-920

51 Tarsalgia in the Adolescent Not an Attenuated Tuberculosis. A. Broca and E. Levy.

December 7, No. 98, pp. 921-928

52 History of Endocarditis with Acute Rheumatism. A. Chauffard.

53 *Minor Signs of Malta Fever. P. Darbois.

50. **Syphilitic Mediastinitis.**—The only testimony as to the syphilitic nature of the puzzling syndrome observed was the prompt recovery under mercury. There were no signs or history of syphilis and the symptoms indicated severe compression of organs by a tumor in the vicinity of the superior vena cava. The patient was a man of 63, supposedly healthy until the last year. The symptoms from the assumed tumor in the mediastinum growing worse, an operation was decided on but was preceded by a tentative course of mercury; in less than a month there was complete recovery. The case is another example, the author states, of the protean manifestations of ignored syphilis. Dieulafoy makes it a rule now to give mercury in every organic lesion whose cause cannot be detected, regardless of the Wassermann findings.

53. **Minor Signs of Malta Fever.**—Among the symptoms which are not generally known are a mild orchitis; four or five sweats during the night, the sweat frequently being fetid and soaking the mattress; constipation, sometimes alternating with profuse diarrhea the moment the sweats stop; fleeting pains or the pain may be localized in the heels, sacro-iliac articulation or epigastrium; there may also be falling of the hair, both on the head and body, and in the intervals between the acute exacerbations there may be desquamation without preceding erythema. When the disease drags along for months, there may be localized edema and the limb involved feels

intensely cold or the patient may feel chilly all over most of the time. Darbois calls attention to these minor signs of the infection as an aid when the diagnosis is dubious.

Semaine Médicale, Paris

December 14, XXX, No. 50, pp. 585-594

54 *Paraplegic Dementia from Chronic Cortical Encephalitis. (Nouveau syndrome anatomo-clinique.) G. Deny and J. Lhermitte.

54. **Non-Senile Paraplegic Dementia.**—Deny and Lhermitte report the clinical and anatomic details of a case of dementia with progressive paraplegia due to a chronic cortical encephalitis. The lesions and symptoms resembled those of paraplegic dementia resulting from patches of softening of the brain, and they differ completely from the lesions of senile paraplegic dementia. The patient was a woman of 48 and the first symptoms had been observed nearly two years before death.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVIII, No. 1, pp. 1-173. Last indexed Dec. 10, 1910, p. 2100

55 *The Two Weak Points in the Mediastinum. (Die "schwachen Stellen" des Mediastinums und ihre klinische Bedeutung bei pleuritischen Exsudat with Emphysema.) G. Nitsch.

56 Spontaneous Pneumothorax with Emphysema. H. Bach.

57 *Quantitative, "Titration" Cutaneous Tuberculin Reaction. W. Mirauer.

58 *Artificial Pneumothorax in Pulmonary Tuberculosis. K. Wellmann.

59 Experimental Research on Effects of Artificial Pneumothorax. (Zur Kollapstherapie der Lungentuberkulose.) E. Ruediger.

60 *Comparative Value of Cutaneous and Conjunctival Tuberculin Tests in Children. E. Feer.

61 *Inefficiency of Tuberculin Test by the Mouth. (Interne Tuberkulindarreichung zu diagnostischen Zwecken.) F. Hell.

62 *Action of Functional Rest of the Lung on the Extent and Course of Pulmonary Tuberculosis. A. N. Rubel.

63 Immunity of Tuberculous Animals to Tuberculosis Infection by Inhalation. F. Hamburger and T. Toyofuku.

64 The Advantages of the Pierin and Antiformin Methods for Microscopic Examination of Sputum. W. Polugorodnik.

55. **The Two Weak Points in the Mediastinum.**—Nitsch refers to the region back of the upper part of the sternum, where the thymus has retrogressed, as the first weak point. The second region is bounded by the spine and aorta at the back and the esophagus and heart in front. He discusses the significance of these weak points in development of pleural effusions and pneumothorax.

57. **Titration Tuberculin Test.**—Mirauer's experience, he states, has confirmed the simplicity and superior advantages of the serial quantitative method for the tuberculin local test, according to the Ellermann and Erlandsen technic. (It was described in THE JOURNAL, May 15, 1909, page 1634.) He declares that it seems to be the best method at our disposal for estimating tuberculous infection in adults, but that as yet, it is scarcely adapted for introduction into general practice. Its chief advantage lies in the possibility of more exact prognosis.

58. **Pneumothorax in Treatment of Pulmonary Tuberculosis.**—Wellmann summarizes the experiences with this measure in twenty-seven cases at the clinic in charge of Matthes at Cologne. The indications were for chronic pneumonia or pulmonary tuberculosis; in thirteen of the cases it was impossible to restrict the pneumothorax solely to the diseased lung. In one case the sound upper lobe of the lung was compressed also without apparent injury. It resumed its function without showing any functional disturbances afterward. On the ground of the experiences related, Wellmann commends this measure for wider adoption; it is liable, he thinks, to prove serviceable while the final judgment can be made only on the basis of more extensive and longer experience.

60. **The Cutaneous and Conjunctival Tuberculin Tests in Children.**—Feer states that the v. Pirquet cutaneous tuberculin test has been applied to 2,000 children at the clinic for children's diseases at Heidelberg, and that its value has been appreciated more and more in the course of this experience. It is especially instructive between the ages of 3 and 5. The reaction is rarely positive at this age but it indicates an active process when it does occur. The conjunctival test was applied in 371 cases; the reaction was positive in only 28 per cent. of the cases of inactive tuberculosis, while it was positive in 78 per cent of the active cases. Thus it points more exclusively to the active processes than the cutaneous reaction,

but this advantage is counterbalanced by the fact that conjunctivitis with phlyctenæ developed in 5 out of the 101 cases giving a positive reaction to the conjunctival test. The lesions all healed in two or three weeks but the fear of this complication led to abandonment of the ocular technic, although in one case phlyctenæ developed after the cutaneous test alone. There were no signs of scrofula in any of these children with phlyctenæ. On the other hand, he has never encountered a typical case of scrofula in which the cutaneous tuberculin test failed to induce a positive reaction.

61. **Internal Tuberculin Test.**—Hell was unable to obtain any evidence of a reaction for diagnostic purposes in twenty-five persons given tuberculin internally, even in amounts up to 80 mg. The Moro tuberculin salve test, applied later, gave a positive reaction in nearly every instance.

62. **Influence of Functional Rest of the Lung on Pulmonary Tuberculosis.**—Rubel's experiments were made on rabbits and dogs, and he immobilized the lung without compression. This was accomplished by passing a wire into the pleural cavity and out again two or three interspaces below. The wire was then drawn tight and tied; this squeezed the enclosed ribs close together, obliterating the interspaces. The result was that this side of the chest lagged behind the other side in respiration and its excursions were hampered. The animals were then infected with tubercle bacilli injected into a vein in the ear. The difference between the operated and unoperated side was striking when the animals were examined after death. Control experiments with uninfected animals and with a dog infected by injection of the culture directly into the lung tissue, all confirmed the fact that functional rest of the lung was responsible for a pronounced retrogression of the tuberculous inflammatory infiltration and that it evidently favored cicatricial transformation of the tubercle. The bacilli seemed to locate on and penetrate into the tissues more readily in the less active lung. The blood-supply to the lung seems to be more profuse the greater the respiratory excursions, and the more active the movements of the lung the greater the dissemination of bacteria from it as the more abundant blood-supply washes them along. The results of the research reported throw light on the question as to the retention and burrowing into the tissues of infectious material brought to the lung in the venous blood, and as to the local anatomic changes that develop in the comparatively quiescent lung.

Berliner klinische Wochenschrift

November 28, XLVII, No. 48, pp. 2177-2224

- 65 *Progress in Knowledge and Treatment of Necrosis of the Pancreas. H. Coenen.
- 66 *Buttermilk for Infants with Acute Indigestion. (Säuglingsernährung bei akuten alimentären Störungen.) J. Ritter and W. Buttermilch.
- 67 The Movements of the Heart and the Electrocardiogram. E. Rautenberg.
- 68 Improved Gastroscope and Its Findings. H. Elsner.
- 69 Theory of Anaphylaxis. U. Friedemann.
- 70 Baseless Claims for a "Non-Toxic Tuberculin." (Das Endotin.) A. Wolff-Elsner.
- 71 *Kaolin and Carbon Dioxid Snow in Therapeutics. (Erfahrungen über die therapeutische Verwendung von Bolus alba und Kohlensäureschnee.) M. Klotz.
- 72 Proposed Legislation on Confinement of the Insane. H. Lieske.

65. **Necrosis of the Pancreas.**—Coenen comments approvingly on the increasing tendency toward early operating in acute pancreatitis. Dreesmann found on record in 1909, 118 cases in which an operation was done, with recovery in 45 per cent. The proportion of recoveries was 80 per cent. in the forty cases in which the pancreas had been exposed and tamponed early. Recent research suggests that the necrosis is the result of autolysis from activation of the pancreatic secretion by bacterial action, the bacteria penetrating into the pancreas in infected bile or intestinal juice. The resulting autolysis entails necrosis and the toxic substances then generated seep into the surrounding tissues and induce the severe general symptoms as they are absorbed. The aim in treatment is to expose the diseased pancreas as soon as possible and by packing with gauze to prevent the toxins generated from finding their way into the abdominal cavity. He reports five cases in which treatment on this line proved promptly effectual except in one case in which the pancreas trouble was secondary to a perforated gastric ulcer. The pancreatic

secretion drained away in this case amounted daily to a liter or a liter and a half. A gaseous abscess in one of the patients contained nearly 2 liters of gangrenous masses, and in a case reported by Fasano, fully 4 liters. There is no doubt that mild acute pancreatitis can heal spontaneously; the conditions are about the same as with appendicitis. The same surgical principles should prevail for both affections, although early differentiation is more difficult with pancreatitis. The syndrome generally suggests ileus or perforation peritonitis at first.

66. **Feeding of Infants with Acute Indigestion.**—A number of case histories and curves are given to show the advantages of feeding infants suffering from severe acute indigestion with buttermilk, when breast milk is unattainable. The tolerance for carbohydrates seems to suffer first and most, and buttermilk, free from both fat and carbohydrates, seems to be assimilated even by the youngest infants. In the cases reported, it was sweetened with saccharin in some cases and preceded or accompanied by weak tea. The buttermilk must not be either too young or too old, the acidity ranging from 31.6 to 24 (Soxhlet-Henkel) and no peptonizing bacteria should grow on the first plate with the dilution technic. The buttermilk is given unmodified according to indications.

71. **Kaolin and Carbon-Dioxid Snow.**—Klotz found kaolin—bolus alba—superior to other dusting powders for many skin affections on account of its exceptional absorbent properties. It proved especially useful in eczema with much secretion, intertrigo, vulvovaginitis, etc. The experiences with it for internal use were not satisfactory. He also reports the successful application of carbon-dioxid snow in treatment of excessive granulation and subcutaneous tuberculids, tuberculous fistulas and nevus. For small teleangiectasia one minute's application is the limit, and the tolerance of the skin should be cautiously tested.

Correspondenz-Blatt für Schweizer Aerzte, Basel

December 1, XL, No. 34, pp. 1129-1176

- 73 Internal Secretion and Autolysis. K. Kottmann.
- 74 Recovery After Removal of Spinal Cord Tubercle. (Subpialer makroskopisch intramedullärer Solitär tuberkel in der Höhe des vierten und fünften Cervicalsegmentes—Operation. Genesung.) O. Veraguth and H. Brnn.

Deutsche medizinische Wochenschrift, Berlin

December 1, XXXVI, No. 48, pp. 2225-2272

- 75 Treatment of Diseases of the Teeth. (Allgemeine Behandlung der Zahnkrankheiten.) W. Dieck.
- 76 *Recent Progress in Topical Diagnosis of Diseases of the Pons and Medulla Oblongata. A. Wallenberg and O. Marburg.
- 77 *Technical and Biologic Experiences with Salvarsan. H. C. Plaut.
- 78 *Cutaneous Bovine Tuberculin Reaction. (Perlsuehtreaktion nach Pirquet.) E. Klose.
- 79 Dilatation Treatment of Phimosis. (Stumpfe Behandlung der Phimose im Kindesalter.) C. Stuhl.
- 80 Oxygenated Baths. (Das Sauerstoffbad, seine Wirkungsweise und seine therapeutische Verwendung.) F. Scholz.

December 8, No. 49, pp. 2273-2320

- 81 Brain Surgery. (Zur Hirnchirurgie.) O. Hildebrand.
- 82 Atoxyl and Its Derivatives. F. Blumental.
- 83 Salvarsan in Internal Medicine. L. Michaelis.
- 84 Salvarsan in Syphilitic Nervous Disease. H. Oppenheim.
- 85 Salvarsan in Malaria, Vincent's Angina and Syphilis. T. Rumpel.
- 86 Salvarsan in Syphilis. C. Stern.
- 87 Repeated Small Doses of Salvarsan in Syphilis. E. Kromayer.
- 88 Manufacturers' Directions for Use of Salvarsan. (Vorschriften für die Anwendung des Ehrlich-Hataschen Mittels.)
- 89 *Operative Treatment of Hay Fever. (Erfolge der operativen Heufieberbehandlung durch Resektion des N. ethmoidalis anterior.) E. Blos.

76. **Topical Diagnosis of Lesions at Base of Brain.**—Wallenberg and Marburg discuss the topical diagnosis of lesions in the pons and medulla oblongata as recent research and experiences have thrown light on the subject. At the same time they say that this more exact localization shows that we can scarcely speak of local symptoms in the narrower sense; the aim is to unravel from the general phenomena those for which certain tracts and centers are responsible; the symptoms themselves are not so instructive, perhaps, as the time when they appear, the subsidence of certain phenomena, their reciprocal influence on each other, and their sequence. Wallenberg declares that further perfecting of clinical methods of investigation will lead to great precision in localization.

77. **Salvarsan in Syphilis.**—Plant states that softening or necrosis was observed at the point of injection in the breast in eight out of twenty-six patients, and a toxic exanthem in three others, but that these by-effects are counterbalanced by the prompt action of the drug. No effect of any kind was apparent in a case in which the drug was injected in the back.

78. **Bovine Tuberculin Cutaneous Reaction According to v. Pirquet.**—Klose applied the Pirquet technic on 120 children suspected of tuberculosis. Among the seventy-five children with positive findings nearly all presented the typical reaction to both the human and bovine tuberculin; only 9.3 per cent. reacted to human tuberculin alone and only 5.34 to the bovine tuberculin alone. He theorizes on these findings, remarking that the v. Pirquet technic can be regarded as complete only when it is applied with both human and bovine tuberculin. The practical conclusion of this seems to be that the special tuberculin involved should be used in treatment or the one giving the strongest reaction when both give positive results.

89. **Operative Treatment of Hay Fever.**—Blos reports the later history of three patients who seem to have been freed permanently from chronic hay fever and hay asthma by resection of the nasal nerve as it emerges from the anterior ethmoidal foramen. He gives the details of the technic. His results apparently confirm Killian's views summarized in these columns, Nov. 12, 1910, page 1770.

Medizinische Klinik, Berlin

December 4, VI, No. 49, pp. 1921-1964

- 90 *Acute Heart Disease in Children. (Die akuten Herzerkrankungen im Kindesalter.) F. Göppert.
- 91 Transmission of Disease in Mines. (Inwieweit findet eine Verbreitung von übertragbaren Krankheiten durch den Kohlenbergbau statt?) H. Bruns.
- 92 *Dangers of Iodin Therapy. (Gefahren der Jodmedikation, Jodempfindlichkeit und Jodbasedow.) Römheld.
- 93 *Familial Ataxia. L. Wutscher.
- 94 Electrolytic Treatment of Atheroma. (Behandlung der Balggeschwülste mittels Electrolyse.) M. Horowitz.
- 95 Technic for Preparing Emulsion of Salvarsan. S. Jessner.
- 96 Staining Technic for Gonococci. (Bedeutung der Gramschen Färbungsmethode für den Gonokokkennachweis.) E. R. W. Frank.
- 97 Tropical and Glacial Geological Eras. (Tropenklima und Eiszeiten in der Vergangenheit der Erde.) F. Frech. Commenced in No. 48.

90. **Acute Heart Disease in Children.**—Göppert discusses principally the dubious points in diagnosis and treatment, especially those which may lead to the erroneous assumption of a heart defect in the young. Among them are the heart-lung murmurs which are not due to organic trouble, but appear and disappear during the examination and become inaudible if the breath is held in the expiration position. Lüthje has found systolic murmurs at the pulmonary orifice so often that he declares they are an almost normal occurrence in the development of the child. The murmur varies with the excitement of the child and is characterized by its localization and its inconstancy. In Göppert's experience, a slight impurity in the first sound of the heart has frequently led to the mistaken assumption of an endocarditic murmur, and a duplicated second pulmonic sound is liable to cause unwarranted concern. If no other changes can be discovered in the heart, these murmurs may be regarded as accidental. The pulse-rate is liable to be unusually high in children, sometimes being 100 and over, when the child is examined and over 90 when it is at rest, even up to the age of 10, and the apex in children between 4 and 13 or 15 years old lies farther to the left than in adults. If the child is excited, the findings may be misleading. If the pulse is good Göppert has the child run up two flights of stairs and examines him again as soon as he comes down. With normal conditions the child is only a little out of breath and the increased pulse-rate returns to normal in about three minutes and keeps strong throughout. Sometimes the heart-beat is quieter after the test than before, as the little diversion has tranquilized the child. In a recent case a boy of 10 had been unduly nervous and weakly for a year after a rescue from drowning, and repeatedly, whenever he was examined, his pulse-rate was between 130 and 140, and the apex beat lifted the chest wall in the nipple line. The child was told to run up and down a flight of stairs five times; three minutes afterward the pulse had dropped to 90 and

there was not a trace of dyspnea. The boy's heart was evidently sound. In dubious cases the child can be sent up the flight of stairs twice in fifteen minutes. Only when the embarrassed breathing and weaker pulse persist longer than three minutes is the diagnosis of heart weakness from dilatation justified in these cases—not by the mere history of weakness and tendency to attacks of faintness. An hour's rest in bed during the day is generally sufficient to keep such children in good condition, their life otherwise need not be interfered with except that they must avoid long walks and athletic exercises. Göppert warns against the erroneous diagnosis of myocarditis when the pulse is slow and occasionally intermittent. This form of irregularity is comparatively frequent in children, possibly from intestinal reflexes or growth anomalies. Hirsch explains it as an extrasystole. The stair test, Göppert says, is followed by acceleration and normal regularity of the pulse, but the irregularity returns as the effect of the test subsides. This pulse anomaly is very puzzling at times, especially when the child is first seen during an attack of vomiting and constipation. It is still more liable to be misconstrued after an acute infectious disease. During the fever the pulse is regular, and the discovery of irregularity suggests myocarditic mischief. He reports a case in which a youth was dismissed from the military academy on account of the discovery of the supposed myocarditis. It was only with the greatest efforts that he was saved from becoming a "heart hypochondriac," especially as another physician had confirmed the diagnosis of myocarditis. The course of the case finally cleared up the diagnosis. When there is actual heart disease, as after scarlet fever or acute rheumatism, the physician's main task, Göppert reiterates, is to keep the children quiet in bed until all the inflammatory phenomena have subsided. Many children are allowed to be up for weeks when there is still a temperature over 38 C. (100.4 F.); they should be kept in bed until the temperature in the rectum, in bed, remains normal. After the temperature has become normal the child should be allowed to recline out of doors, but it is important to see that the back is well protected with blankets.

92. **Dangers of Iodin Medication.**—Römheld remarks that few realize that iodine and all preparations of iodine, including thyroid tablets, are liable to induce exophthalmic goiter in a patient with a personal or family tendency to goiter and obesity, even when the individual presents no signs of goiter. Every year he encounters cases of incipient or feared arteriosclerosis in which iodine has been given and serious symptoms suggesting exophthalmic goiter have developed. He reports in detail eight cases to sustain his assertion. In six of the cases a latent exophthalmic goiter was aroused and aggravated, and in the others, patients with a family history of goiter developed the exophthalmic syndrome under the iodine. The severity of the symptoms does not seem to stand in any proportion to the amount of iodine taken.

93. **Familial Ataxia.**—Wutscher reports a case in which a girl of 10 presented a typical case of Friedreich's ataxia while her brother, aged 24, developed a typical cerebellar heredo-ataxia of the Marie type.

Münchener medizinische Wochenschrift

November 29, LVII, No. 48, pp. 2505-2560

- 98 *Research on Saline Infusion. (Einfluss der Kochsalzinfusion.) M. Henkel.
- 99 Chronic Gastric Ulcer in Roentgen-Ray Picture. (Das chronische Magengeschwür und sein röntgenologischer Nachweis.) H. Rieder.
- 100 The Liver in Scarlet Fever. (Das klinische Verhalten der Leber bei Scharlach.) W. Hildebrandt.
- 101 Transmission of Anaphylaxis from Father and Mother to Child. F. Schenk.
- 102 Value of Relative Leukocyte Count. Hecker.
- 103 Technic for Intravenous Injection of Salvarsan in Syphilis. T. Hausmann.
- 104 Salvarsan in Syphilis. Chrzelitzer.
- 105 Salvarsan in Leprosy. M. Gioseffi.
- 106 Orthopedic Treatment of Tuberculosis of Ankle. (Fussgelenkstuberkulose.) A. Schanz.
- 107 Experimental Research on Secretion of Suprarenal Medulla During Gestation. (Zur Adrenalinämie des Blutes in der Gestationsperiode des Weibes.) M. Nen.
- 108 *Treatment of Ataxia. K. Uebeleisen.

98. **Influence of Saline Infusion.**—Henkel discusses some recent communications on the effect of saline infusion as liable to be injurious, but states that his experience has been

the reverse. It seems evident that animals are affected differently from human beings—all his experiences speak in favor of the harmlessness and possible benefit from salt incorporated in various ways, even when the kidneys are decidedly pathologic. Six pregnant women near term were given 10 gm. of salt daily for a month. The urine was examined daily for two weeks and then every third day. In a second group, four pregnant women were given an intravenous injection of 5 c.c. of a 10 per cent. solution, and four others a subcutaneous infusion on three occasions of 1 liter of 1.8 per cent. salt solution every third day. In none of the women was there any evidence of injury and albumin never appeared in the urine; except for increased output of urine there did not seem to be any symptom from the saline infusion. Another woman with parenchymatous nephritis but no edema was given an intravenous injection of 5 gm. of a 5 per cent. salt solution and two days later 5 gm. of a 10 per cent. solution. The Esbach findings previously had been 4 per cent., but notwithstanding the saline infusion the albuminuria constantly declined and the urine was normal in eight days. In another case of nephritis with edema during the puerperium, the 4 per 1,000 albuminuria had subsided by the nineteenth day to mere traces. The woman was then given two intravenous injections of the same amount and concentration as the other patient, but all within twenty-four hours, and no harm resulted. The edema did not return and the urine remained normal. In a still more severe case of nephritis with 8 per 1,000 albumin and changes in the retina, subcutaneous infusion of 1 liter of 1.8 per cent. salt solution increased the output of urine but did not check the progressive subsidence of the albuminuria, which sank to 0.25 per 1,000 by the second day of the puerperium, then 15 gm. of a 10 per cent. salt solution were given at one time. The albuminuria did not increase and the diuresis remained good. In another case a woman at the ninth month of pregnancy, free from albuminuria, was given an intravenous injection of 5 c.c. of a 10 per cent. salt solution, repeated three days later and after the fifth day the same amount of a 20 per cent. solution. There was no albuminuria at any time and the specific gravity of the urine increased only from 1,017 to 1,020. Weichel has recently reported that a 10 per cent. salt solution kills the bacteria of meat poisoning, and Henkel thinks that this confirms the general impression in regard to the direct disinfecting action of salt. He knows of no other disinfectant that can kill bacteria in tissues without injuring the tissue. Many have already witnessed great benefit from saline infusion and the experiences here related supply, he says, the scientific basis for the clinical facts observed. Notwithstanding, therefore, the unfavorable action of salt in experiments on animals, he thinks that there is no reason to refrain from saline infusion in the clinic, not even when there is edema, a heart defect or nephritis. He has made much use of salt in eclampsia, and has never witnessed harm but rather benefit.

108. Treatment of Ataxia.—Uibeleisen has found that patients with severe ataxia have more confidence and do the exercises better when standing in water nearly to the chest. The buoyancy of the water helps to make the movements easier. He has a tank set in the floor for the purpose, 4.5 m. long, 1.2 m. deep by 0.68 m. wide (14 by 4 by 2 feet), with a railing for the stairs leading down into the tank. The railing is continued around the tank about 12 cm. from the top. This supplies a convenient support and the steps are useful when the patient wishes to sit down and rest. If the ataxia involves the arms, the patient is supported by a belt held by the attendant. He says that it is amazing to see how quickly the patients gain confidence as the water buoys up the limbs. As the patient improves, less and less water is allowed in the tank until finally the exercises are done in the empty space. Constant supervision is, of course, indispensable while there is water in the tank.

Wiener klinische Wochenschrift, Vienna

December 1, XXIII, No. 48, pp. 1703-1738

- 109 *Puncture of Corpus Callosum to Relieve Pressure on the Brain. (Operative Druckentlastung des Gehirnes bei Tumoren und anderen Gehirnerkrankheiten.) G. Anton.
110 Defects in Development and Tumors. (Bildungsfehler und Geschwülste.) J. Bartel, K. Einäugler and V. Kollert.

- 111 Hypertrophy of Heart in Beriberi. (Zur Kenntnis der Entstehungsweise der Herzhypertrophie bei der Beriberi-Krankheit.) Y. Tanaka.
112 Microsporon Alopecia Areata. (Mikrosporidie.) M. Schramek.
113 Subsidence of Sarcoma of Prostate Under Endovesical Radium Exposures. R. Paschkis and W. Tittinger.
December 8, No. 49, pp. 1739-1778
114 Prophylaxis of Ophthalmia Neonatorum. (Antrittsvorlesung.) F. Dimmer.
115 Sensory Disturbances in Vitiligo. H. Königstein.
116 Eosinophil Count. (Zählen der eosinophilen Zellen nach der Dungerschen Methode.) A. Galambos.
117 *The Mercury Lamp and Colored Light in Diagnosis. (Diagnostische Verwendung des monochromen und Quecksilberlichtes in der Medizin.) L. Freund.
118 Giant Cells in the Urine as Sign of Urogenital Tuberculosis. (Riesenzellen im Harnsedimente bei Urogenitaltuberculose.) H. Steindl.

109. Puncture of Corpus Callosum to Relieve Pressure on the Brain.—Anton summarizes the further experiences with this operative treatment of hydrocephalus, etc., since his last communication on the subject, reviewed in THE JOURNAL, Nov. 13, 1909, page 1638. Bramann has thus operated in 37 cases, the aim being to restore the communication between the anterior horn of the ventricle and the cavities of the brain, imitating the natural process of the opening of the foramen of Magendie to permit passage of fluid from one space to the other. In six cases the operation was done on account of external tumors; in seven for a tumor in the ventricle; in the hypophysis in four cases; for hydrocephalus in twelve, complicated with choked disc in one; for epilepsy in three; for syphilitic meningitis, echinococcus and steep skull in one case each. The neuritis of the optic nerve retrogressed in twelve cases and was uninfluenced in eight. Coma and stupor subsided at once in fifteen cases. Paralysis, ataxia and contracture were favorably influenced in twenty-one cases. Vertigo and vomiting were arrested in fifteen cases but persisted unmodified in four. There was no operative fatality but one patient with tumor of the hypophysis died in a few days, and nine with brain tumors have succumbed since to other complications. Of the three epileptics, the seizures recurred in one. The results were exceptionally good in the hydrocephalus cases. In case of a brain tumor, the symptoms become much more instructive when those from pressure disappear after puncture. It postpones the danger of blindness so that time can be gained for more exact localization of the tumor. Puncture of the corpus callosum may also prove useful, he thinks, in the course of other operations on the brain, to forestall danger of hernia or laceration. Anton calls attention also to recent research which seems to demonstrate that the cerebral fluid thus dammed up acquires certain special properties which are liable to have a direct therapeutic action when drained into the general circulation. The nerve and other tissues may be suffering from the lack of special elements in the retained cerebral fluid. Experiences related by Roubinovitch suggest that the fluid released by the puncture might be reinjected subcutaneously to aid in restoring the chemical coordination of the organism.

117. Colored Light in Diagnosis of Eruptions, Etc.—Freund says that the blue light from a mercury lamp, the yellow light from burning soda and other monochrome lights may reveal slight changes in the skin that escape detection by other means. The colored lights are of not much use for differentiating cutaneous affections, but with them it is possible to seize the faintest, possibly briefly transient eruption or efflorescence and thus permit the correct diagnosis, unattainable in any other way. At the Vienna clinic for syphilis and skin diseases, in charge of Finger, the mercury or soda light is used to reveal red eruptions while the bluish discolorations are sought for with red lithium light or the yellow soda flame. The soda light is obtained by pouring a little soda into a grooved platinum ring fastened in a gas jet or in the flame of a Bunsen burner. Lithium gives a red, and thallium a green light; filtering the light through colored glass also gives interesting findings.

Zentralblatt für Chirurgie, Leipsic

November 19, XXVII, No. 47, pp. 1489-1520

- 119 Apparatus for Positive Pressure in the Lungs During General Anesthesia. (Apparat zur Ueberdrucknarkose.) J. Schoemaker.
120 *Adrenalin-Saline Infusion and Chill. (Adrenalin-Kochsalzinfusion und Schüttelfrost.) C. Haebelin.

November 26, No. 48, pp. 1521-1544

- 121 Technic for Resection of Spinal Roots. (Zur Technik der Foerster'schen Operation.) N. Guleke.
122 *Technic for Cleft-Palate Operations. (Neues zur Technik der Gaumenspalatoperationen.) C. Helbing and G. v. Lobmayer.

120. **Fatality After Adrenalin-Saline Infusion.**—Haeberlin reports a case of peritonitis in which intravenous infusion of 1,500 c.c. of salt solution to which 8 drops of adrenalin had been added gave immediate relief but was followed an hour later by severe chill and increasing pulse-rate and temperature, with death in less than three hours. He explains this as the result of washing out from the lymphatics the accumulated residual toxins. This sudden flooding of the circulating blood with toxins and their absorption readily explain the symptoms in sepsis under the vasoconstricting action of the adrenalin.

122. **Improved Technic for Cleft Palate Operations.**—Helbing says that by cutting the upper jaw away from the malar bone, it slips forward and closes the cleft. In a case described, he introduced a small chisel into the mouth and cut through the bone transversely above the second premolar tooth, driving in the chisel until its edge could be felt from without at the margin of the orbit. After removal of the chisel, strong pressure on the jaw pushed it inward until the cleft was nearly closed, and the jaw was held in this position by three wires passed through holes bored in the jaw according to Brophy's technic for closing cleft palate in new-born infants. Four days later he completed the operation on the cleft palate in the usual way, except that he used horsehairs instead of silk as they do not swell and particles of food do not cling to them. Since he has been using horsehairs for suturing, he has had no necrosis of the edges; it is impossible to draw these hairs too tight, as they break. In the case described he found that this operation on one side was sufficient, and corrected a tendency to asymmetry. There are no veins nor large vessels to be injured at the point where he applied the chisel, slanting it up toward the outer canthus. The divided jaw healed solidly in its new place, so that by the end of four weeks all was firm again.

Lobmayer stains the threads with the stains used in histologic technic, the colored threads alternating in turn with unstained thread. It is then an easy matter to tie the two ends of the threads without confusion. These stains are not discolored by blood and do not irritate the tissues.

Zentralblatt für Gynäkologie, Leipzig

November 26, XXXIV, No. 48, pp. 1553-1584

- 123 Tubal Sterilization. R. Asch.
124 Surgical Obstetrics. (Zum Ausbau der chirurgischen Aera in der Geburtshilfe.) E. Solms.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 10, XXXI, No. 135, pp. 1425-1432

- 125 Organ Extracts Unable to Neutralize Toxicity of Suprarenal Extract. (Tossicità adrenalinica ed estratti organici.) A. Farini.

November 15, No. 137, pp. 1449-1456

- 126 *Major Operations Under Primary Ether Anesthesia. (Contributo clinico all'anestesia generale per mezzo dell'ebbrezza eterea, secondo Sudeck, anche in operazioni di lunga durata.) C. Mariani.

November 17, No. 138, pp. 1457-1464

- 127 Local Therapeutic Action of Protargol in Stomach and Intestinal Disease. A. Cantani.

November 20, No. 139, pp. 1465-1480

- 128 *Pseudotumors in the Intestines. F. Ferron.

November 22, No. 140, pp. 1481-1488

- 129 Flap from Sartorius Muscle to Close Inguinal Canal. (La plastica col sartorio nella cura di certe ernie inguinali.) C. Mantelli.

November 24, No. 141, pp. 1489-1496

- 130 *Workmen's Compensation. (Liquidazioni d'indennità per gli infortuni sul lavoro.) G. M. de' Luna.

November 27, No. 142, pp. 1497-1512

- 131 *Peripleuritis and Parametritis Secondary to Peripheral Suppurative Processes. T. Fiori.

November 29, No. 143, pp. 1513-1520

- 132 Anaphylaxis from Influenza Toxins. E. Patrone.

126. **Primary Ether Anesthesia for Long Operations.**—Mariani regards as a great advance Sudeck's technic for operating under the first whiffs of ether, profiting by the analgesia dur-

ing the condition which resembles that of alcohol intoxication so much that he calls it the ether *Rausch*. Mariani has performed thirty-five laparotomies with this anesthesia alone, never letting the patient pass from the stage of "drunkenness" to that of agitation, only giving a few drops when there are signs of returning consciousness. He has also applied this anesthesia technic in five hysterectomies, forty-five herniotomies, in transvesical prostatectomy, numerous gynecologic operations and operations on bones and joints. The advantages of this technic are obvious, he says—no fatality has been known with it since Sudeck introduced it in 1901. The analgesia can be prolonged for an hour and a half or longer. There is less danger of postoperative pneumonia as the patient can swallow as saliva collects in his mouth, while the lesser quantity of the anesthetic used reduces danger from this source. The only disadvantage is that the patients may move and disturb the operator, but a few drops of chloroform stop this.

128. **Pseudotumors in the Intestines.**—Ferron describes four cases in which an exploratory laparotomy was followed by complete cure, the trouble being inflammatory congestion instead of the supposed new growth.

130. **Workmen's Compensation.**—Luna discusses whether it is not possible to estimate with mathematical precision the objective findings after an industrial accident. The trouble has been hitherto that the subjective impressions of the examiner were the bases on which the indemnity was computed, and this led to unscientific estimation of the results of the injury.

131. **Internal Inflammatory Processes Secondary to Peripheral Suppuration.**—In Fiori's first case an abscess developed close to the pleura followed by an abscess adjoining the kidney, the first coming on about a month after a phlegmon on the hand. The patient was a woman of 50. In the second case a paranephritic abscess developed about a month after operative treatment of a felon on the hand. Both patients were cured by prompt operative measures. There can be no doubt of the connection between the peripheral and internal lesion, he is convinced.

Policlinico, Rome

November 13, XVII, No. 46, pp. 1443-1474

- 133 Experiences with Radiotherapy. G. Scaduto. Commenced in No. 45.

November 20, No. 47, pp. 1475-1506

- 134 *Implantation of Internal Saphenous Vein in Peritoneum in Treatment of Ascites. F. Fasani-Volarelli.

- 135 Sarcoma of Pelvic Ligaments. Two Cases. G. de Francisco.

November, Medical Section No. 11, pp. 477-524

- 136 Changes in Respiratory Rhythm of Nervous and Other Origin. C. Frugoni. Commenced in No. 10.

- 137 *Lime and Spasmophilia in Children. (A proposito della ipotesi di Stöltzner sulla patogenesi della tetania dei bambini.) A. Longo.

- 138 Bile Cysts in the Liver. (Studio anatomo-patologico delle cisti biliari del fegato.) A. Nazari.

November, Surgical Section No. 11, pp. 477-524

- 139 Retrograde Incarceration of the Intestine. (Strozzamento intestinale retrogrado.) A. Passaggi. Commenced in No. 10.

- 140 Blood Cysts in the Spleen. (Cisti ematiche della milza.) S. Solieri.

- 141 The Bacteriologic Flora in the Normal Appendix. P. Frascella.

134. **Implantation of the Saphenous Vein in the Peritoneum for Ascites.**—Volarelli reviews the five cases on record in which the internal saphenous vein was implanted in the peritoneum in treatment of ascites. The outcome was a complete success in the three cases in which the saphenous vein was of normal size and permeable. In the two other cases necropsy showed total obstruction or excessively small size of the vein.

137. **Lime in Spasmophilia in Children.**—Longo reports research on the lime content in the blood in infants. In three with pronounced tendency to spasms and convulsions the blood contained lime in a proportion of 0.1662 to 0.252 per 1,000, but it was very nearly within this range in five healthy children—from 0.1406 to 0.2116. He discusses in detail the literature on the subject of lime in connection with spasmophilia, the general consensus of opinion being against Stöltzner's assumption that the tetanoid condition in infancy is due to lime intoxication. On the contrary, lime, he declares, seems to have a beneficial action in spasmophilia.

Riforma Medica, Naples

November 14, XXV, No. 46, pp. 1261-1288

- 142 Gastric Ulcer. G. Rummo.
143 Hydrochloric-Acid Secretion in Nephritis. G. Tria.
144 Danger of Sowing Cholera Germs from Water-Closets on Trains. (Della seminazione del vibrione del colera lungo le vie ferroviarie.) L. Vincenzi.

Hospitalstidende, Copenhagen

November 9, LIII, No. 45, pp. 1249-1272

- 145 *Indications and Age for Strabismus Operations. (Skeleoperationen belyst ved Undersøgelser over den sekundære Skelens Patogenese.) H. Rønne. Commenced in No. 44.

November 16, No. 46, pp. 1273-1296

- 146 Proportion of Hydrogen Ions in Stomach Content. (Brintion-koncentrationen i Maveindhold.) J. Christiansen.

145. Indications and Best Time for Strabismus Operations.—Rønne's article is based on 3,865 operations for squint at the Havnegade ophthalmologic clinic during the last forty years. He advocates an early operation believing that the sooner the parts are placed in an approximately normal condition the sooner normal restitution will occur, and the tabulated outcome in his cases seems to confirm the correctness of this view. None of the arguments against it has any weight, he declares. The early operations did not entail any greater liability to secondary strabismus in his experience. The operation was done on infants under a year old in twelve cases; under 2 years in forty-two; 3 years in 193; up to 4 years in 297; up to 5 years in 355, and up to 6 in 378. From 25 to 30 the operation was done in 130 cases; up to 40 in eighty-two, and up to 50 in sixteen.

Ugeskrift for Læger, Copenhagen

November 24, LXXII, No. 47, pp. 1441-1482

- 147 Local Anesthesia. C. Wessel. Commenced in No. 46.
December 1, No. 48, pp. 1483-1518
148 History of Arsenic Treatment of Syphilis. (Moderne anti-syfilittisk Arsenikbehandlings Forhistorie.) E. Ehlers.
149 *Fatality After Injection of Salvarsan in Case of Paralytic Dementia. A. Jørgensen.
150 Preferable Technic for Gastroenterostomy. A. Pers.
December 8, No. 49, pp. 1519-1568
151 Hospitals in Greenland. (Sygehusforhold i Grønland.) Fischer-Nielsen.

149. Fatality After Injection of Salvarsan.—This seems to be the same case reported by Ehlers and summarized in THE JOURNAL, Nov. 26, 1910, page 1941.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

INDUCED CELL-REPRODUCTION AND CANCER. The Isolation of the Chemical Causes of Normal and of Augmented, Asymmetrical Human Cell Division. By Hugh Campbell Ross, M.R.C.S. (Eng.), Surgeon, Royal Navy (Emergency List). Being the Results of Researches Carried Out by the Author with the Assistance of John Westray Cropper, M.B., Assistant to the Research Department of the Royal Southern Hospital, Liverpool. Cloth. Price, \$4.50 net. Pp. 423, with 129 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

A SECOND STUDY OF THE INFLUENCE OF PARENTAL ALCOHOLISM ON THE PHYSIQUE AND ABILITY OF THE OFFSPRING. Eugenics Laboratory Memoirs. XIII. Being a Reply to Certain Medical Critics of the First Memoir and an Examination of the Rebutting Evidence Cited by Them. By Karl Pearson, F.R.S., and Ethel M. Elderton, Galton Research Scholar. University of London. Francis Galton Laboratory for National Eugenics. Paper. Price, 4 shillings. Pp. 35. London: Dulau & Co., Limited, 37 Soho Square, W., 1910.

PELLAGRA. By Dr. A. Marie, Physician to the Asylums, Department of the Seine, Paris, France. With Introductory Notes by Professor Lombroso. Authorized Translation from the French by C. H. Lavinder, M.D., Passed Assistant Surgeon U. S. P. II. and M.-H. Service, and J. W. Babcock, M.D., Physician and Superintendent State Hospital for the Insane, Columbia, S. C. Cloth. Price, \$2.50. Pp. 434, with illustrations. Columbia: The State Co., 1910.

ACUTE INTESTINAL TOXEMIA IN INFANTS. An Experimental Investigation of the Etiology and Pathology of Epidemic or Summer Diarrhea. By Ralph Vincent, M.D., Member of the Royal College of Physicians, London. An Address Delivered Before the Glasgow Obstetrical and Gynecologic Society on Nov. 23, 1910. Cloth. Price, 3 shillings 6 pence net. Pp. 83, with 17 illustrations. London: Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, 1911.

REPORT AND APPEAL OF THE GOVERNORS OF THE ALBANY HOSPITAL. For the Year Ending Oct. 1, 1910. Including the Reports of the Treasurer of the Hospital, the Treasurer of the Endowment Fund, the Superintendent of the Hospital, the List of Annual Contributors, the Medical and Surgical Staff and of the Albany Hospital Training School for Nurses. Paper. Pp. 55. Edmund N. Huyck, Secretary, 319 State Street, Albany, 1910.

THE DETERMINATION OF THE DETERIORATION OF MAIZE, WITH INCIDENTAL REFERENCE TO PELLAGRA. By O. F. Black and C. L. Alsberg, Chemical Biologists, Drug-Plant, Poisonous-Plant, Physiological, and Fermentation Investigations. Issued Dec. 16, 1910. Bull. 199, Bureau of Plant Industry, U. S. Department of Agriculture. Paper. Pp. 36. Washington: Government Printing Office, 1910.

THE ANATOMIC HISTOLOGIC PROCESSES OF BRIGHT'S DISEASE AND THEIR RELATION TO THE FUNCTIONAL CHANGES. Lectures Delivered in the Russell Sage Institute of Pathology, City Hospital, New York, during the Winter of 1909. By Horst Oertel, Director of the Russell Sage Institute of Pathology, New York. Cloth. Price, \$5 net. Pp. 227, with 45 illustrations. Philadelphia: W. B. Saunders Co., 1910.

THREE CONTRIBUTIONS TO THE SEXUAL THEORY. By Prof. Sigmund Freud, LL.D., Vienna. Authorized Translation by A. A. Brill, M.D., Clinical Assistant, Department of Psychiatry and Neurology, Columbia University. With Introduction by James J. Putnam, M.D. Paper. Price, \$2. Pp. 91. New York: The Journal of Nervous and Mental Disease Publishing Co., 1910.

A PRELIMINARY STUDY OF EXTREME ALCOHOLISM IN ADULTS. Eugenics Laboratory Memoirs. XIV. By Amy Barrington and Karl Pearson, F.R.S. With the Assistance of David Heron, D.Sc. University of London. Francis Galton Laboratory for National Eugenics. Paper. Price, 4 shillings. Pp. 55. London: Dulau & Co., Limited, 37 Soho Square, W., 1910.

SALVARSAN OR 606 (DIOXY-DIAMINO-ARSENOBENZOL). Its Chemistry, Pharmacy and Therapeutics. By W. Harrison Martindale, Ph.D., Marburg, and W. Wynn Westcott, M.B., London, H. M. Coroner for North-East London. Cloth. Price, 5 shillings. Pp. 77, with illustrations. London: H. K. Lewis, 136 Gower Street, W. C., 1911.

TRANSACTIONS OF THE EIGHTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE. Washington, D. C. April 30, 1910. Public Health Bull. 40. P. II. and M.-H. S. of the United States. Paper. Pp. 101. Washington: Government Printing Office, 1910.

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The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 3

CHICAGO, ILLINOIS

JANUARY 21, 1911

A REPORT OF SIX CASES OF COMPOSITE ODONTOMES*

THOMAS L. GILMER, M.D.
CHICAGO

My excuse, if any is necessary, for reporting these cases at this time is: first, their rarity; second, the fact that they are occasionally mistaken for malignant growths, and consequently large sections of jaws are removed, when, had correct diagnosis been made, no such unnecessary maiming and disfiguration would have resulted; and, third, my desire to add to those previously reported by others six exceptionally interesting specimens of odontomes of the composite variety and to record them where they may be easily accessible to medical men interested in this group of tumors. The first and second of these specimens were reported in the proceedings of the National Dental Association in 1902.

Odontomes are rare in man. They are more frequently found in the jaws of the horse and other animals, but when both those found in man and those found in animals are considered, the number is relatively small. Composite odontomes are most frequently found in the mandible, but are not to be excluded from the maxilla, since two of those in this report were from the upper jaw. They seem to belong to the molar region of the jaws.

Bland-Sutton¹ has given the best classification of odontomes. He has simplified the classification by naming them in accordance with the part of the tooth germ from which they are supposed to originate. In his seventh and last class he places the growths to be described in this report under the head of composite odontomes. His reason for naming them composite odontomes is the fact that they are composed of all of the histologic elements entering into the various tissues composing the teeth, thrown together indiscriminately.

The composite odontome, as indicated, is made up of enamel, dentine and cementum. These tissues may be thrown together in a more or less homogeneous mass, plus well-formed diminutive teeth, all united by cementum, easily made out macroscopically, or the formation may appear to the eye only as a conglomerate mass with no well-marked tooth forms. As will be seen from the illustrations, however, this simple, homogeneous mass, as observed by the unaided eye, is transformed by magnification in a complex tumor of regularly formed teeth with their roots and canals all cemented into a solid and compact body.

The composite odontome differs from the ordinary dentigerous cyst containing diminutive teeth or dentary bodies, in that the dentigerous cyst contains no cement substance other than that which covers the root of the individual tooth, when perfectly formed teeth are found, with each little tooth or denticle separate and distinct from the other; besides there is a well-defined cyst wall and cyst fluid. In the composite odontomes there is no cyst wall or cyst fluid, so far as I have been able to discover.

The origin of composite odontomes has not been fully made out, but it is reasonable to attribute them to the same source as that of multilocular cysts or adamantomas, that is, to unatrophied remains of the epithelial cord; or possibly to extra buds given off from the epithelial lamina, which have become distorted in development. Black attributes supernumerary teeth to additional buds, which buds he has demonstrated.

The diagnosis of odontomes is generally spoken of as difficult. If the growth is of the composite variety and has been uncovered through absorption of bone with suppuration of the soft tissues overlying, it may be and is often mistaken for necrosed bone, since the color and general appearance is very similar, but on close examination, by means of the sharp steel probe, the texture is found different, the odontome being of a denser structure, resisting penetration, while dead bone may be penetrated to a limited degree. In addition to this difference we find in all cases of necrosis of the jaws thickening of the overlying soft tissues with induration. These conditions do not accompany odontomes. It may also, when not exposed, as before indicated, simulate osteoma, likewise that peculiar thickening of bone sometimes found about infected pulpless roots of the molar teeth. It may be confused with sarcoma of the jaw or adamantoma. If the growth can be reached with the sharp steel probe, differentiation from the before-mentioned tumors may generally be made. The surest method of differentiation of odontomes fully covered by bone is by the aid of the skiagraph. The odontome, being of dense structure similar to that of the tooth, may be skiagraphed in the jaw, as are the roots of teeth. The history accompanying odontomes is of value in diagnosis. They are of slow growth, the enlargement of the jaw usually having been noticed months or even years before the case presented to the surgeon. Such slow growths would not be the case in sarcoma. The absence of pain before the growth reaches the surface also differentiates it from most malignant neoplasms.

CASE 1.—The remarkable growth shown in Figure 1 was removed by me from the right side of the lower jaw of a young man at my clinic at Northwestern University Dental School. Figure 2 shows the reverse side of this odontome. The history of this case, as given by Dr. Charles S. Leininger of Chicago, who brought the patient to the clinic, is as fol-

* Chairman's address before the Section on Stomatology of the American Medical Association at the Sixty-First Annual Session, held at St. Louis, June, 1910.

1. Bland-Sutton: Tumors, Innocent and Malignant.

lows: "Patient, aged 19, came Oct. 7, 1900, for treatment for a supposed alveolar abscess, seemingly caused by a badly decayed right lower second molar. A large quantity of pus was drained off and the roots of the tooth removed two days later. The swelling of the gums disappeared shortly afterwards and the patient had no trouble until six weeks later. The patient showed at this time a condition similar to that when first seen, except for the absence of pus. I cut a considerable portion of the gum from the enlarged jaw and packed in borated gauze, expecting to find a third root, but in this I was disappointed. The opening I made relieved

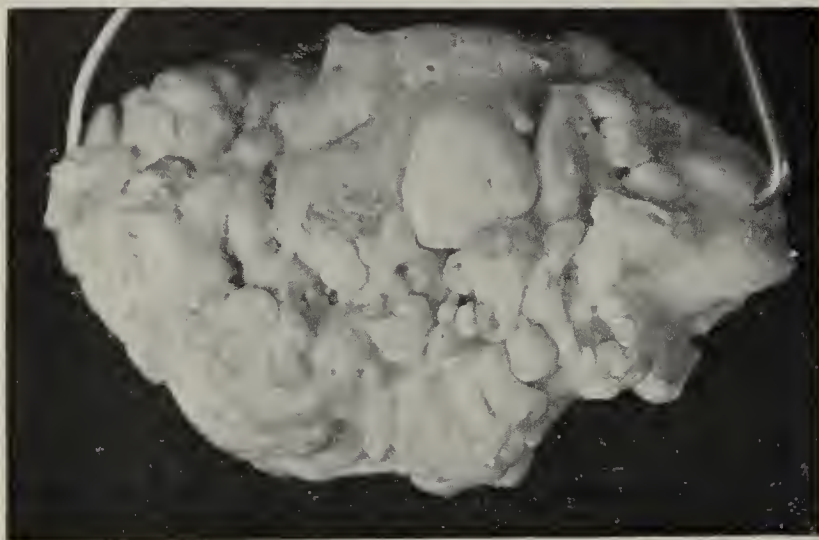


Fig. 1.—Composite odontome.

the patient of pain, but the enlargement gradually increased in size and extended buccally and distally. Two weeks after the incision in the gum was made patient returned with an acute inflammation of the part." When I first saw the patient the condition was as above described by Dr. Leininger. On probing with a sharp-pointed explorer I made out a hard, rough body, which gave the characteristic sensation received when tooth tissues are touched by an instrument. The body was too rough and large to indicate a tooth. The appearance of the gum and the discharge of pus, which was now present,

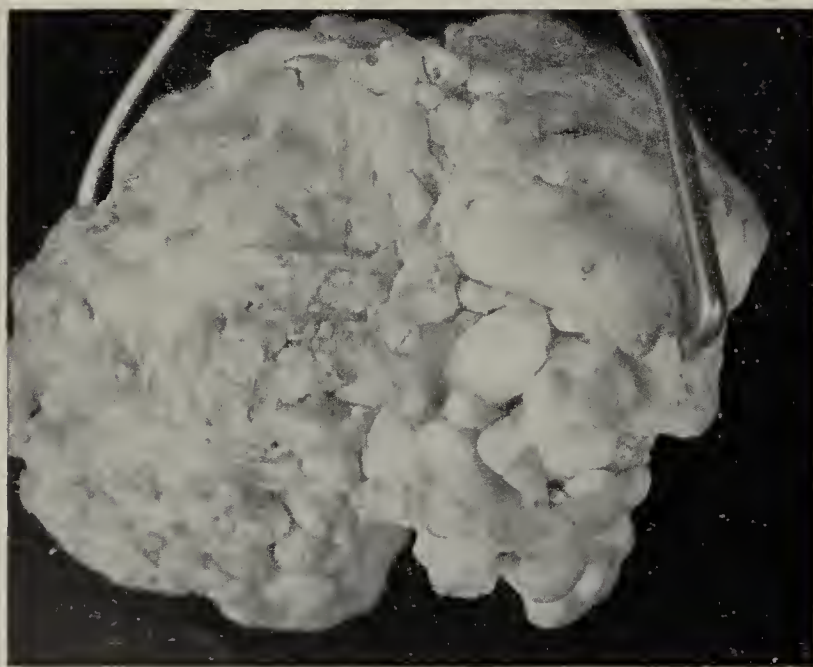


Fig. 2.—Reverse side of odontome shown in Figure 1.

indicated necrosis of bone, but the sensation communicated by the explorer clearly contradicted it. I at once concluded that an odontome was present. The first molar was in place, but loose from absorption of its roots, so was removed. The second molar had been removed by Dr. Leininger and the third molar was not yet erupted. The jaw was much enlarged buccally and lingually. I made an incision antero-posteriorly and raised flaps of gums on both sides, exposing the jaw and a portion of the growth to view. The overlying process was cut away. I found most of the bone absorbed on the buccal

aspect of the jaw and but little left on the lingual surface. With drills and cross-cut fissure burs I cut away the bone on the buccal side of the growth and also a part of that left on the lingual aspect, when the tumor, with some difficulty, was pried from its bed and removed, after which I found posteriorly at the bottom of the cavity the third molar, seemingly perfectly developed. This odontome is the most remarkable one I have ever seen. It is composed of diminutive teeth (Fig. 3), more or less perfectly developed, of the incisor, cuspid and bicuspid types, with large numbers of denticles and enamel drops cemented together within this oblong, crescentic mass. This odontome measures antero-posteriorly 34 mm., bucco-lingually 18 mm., and from above downward 19 mm.

CASE 2.—Figure 4 shows an odontome removed by me from the upper jaw of a patient aged 20. All the teeth were in



Fig. 3.

Fig. 3.—Diminutive tooth from odontome shown in Figure 1 magnified.

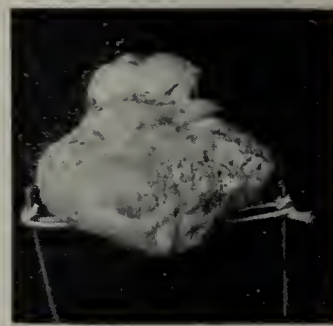


Fig. 5.

Fig. 5.—Odontome from lower jaw of woman aged 22.

place except the second molar. The first molar was loose from absorption of the roots, caused by pressure of the odontome. The patient was quite sure that very recently he had had the second molar removed, but I saw no positive indication of this. This is the only one of my three cases in which I lack posi-

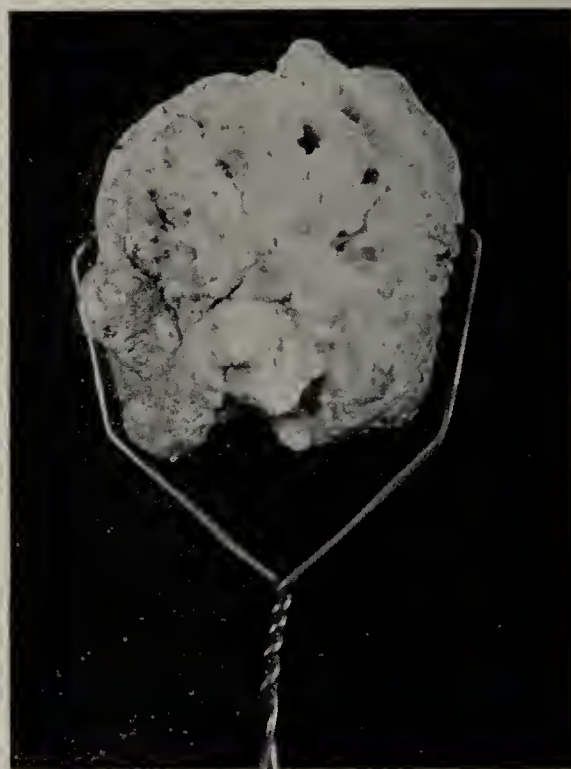


Fig. 4.—Composite odontome which microscopically shows no tooth formation.

tive evidence of the presence of the three molars, as well as all of the normal set of teeth on the side of the jaw in which the odontome was found. This case was sent to my clinic by a practitioner for an operation for necrosis, the odontome having been mistaken for a sequestrum of bone, which was not surprising, since the body had the characteristic brown color of necrosed bone, and there was much swelling and a flow of pus. On probing the mass with a sharp steel instrument, I readily discovered that I was not dealing with dead

bone, but with tooth tissues, so made diagnosis of an odontome. The jaw was much expanded buccally and somewhat lingually, causing considerable disfigurement of the face. The loose first molar was removed and the growth removed, but not until much bone was cut from about it. Above and posterior to the growth, in the socket from which it was removed, was found the third molar, perfectly formed. This growth is spherical in form, with an irregular surface, caused by the protuberances. It measures in its greatest diameter 28 mm. and in its least 22 mm. It differs from No. 1 in that there are no definite tooth forms visible, but enamel, dentin and

roots almost wholly absorbed. I cut the process away and removed the odontome which measured in its greatest diameter (anterior to posterior) 25.2 mm.; above downward 22.4 mm.; labially-buccally 18.4 mm.

CASE 4.—This odontome (Fig. 6) was removed by Dr. Herbert A. Potts of Chicago from the lower jaw of an 18-year-old girl in the clinic of Geheimrat A. Bier, Bonn, Germany. The patient had noticed a swelling and soreness of right side of jaw three years before; this was followed by discharge of pus into the mouth with exposure of a hard, irregular mass in the region of second molar, right side. Pus continued to discharge around this mass. The clinical diagnosis was necrosis of jaw with large sequestrum. Extensive operation from without was proposed. Closer examination by Dr. H. A. Potts revealed small nodules of enamel on the tumor and a corrected diagnosis of odontome was made. A small incision was made within the mouth. This allowed the tumor to be lifted out. Decalcification and microscopic section confirmed the diagnosis of composite odontome. The patient made an uninterrupted recovery.

CASE 5.—This odontome (Fig. 7) and history was given to me by Dr. Victor H. Fuqua. "Miss Mary M., aged 19, came

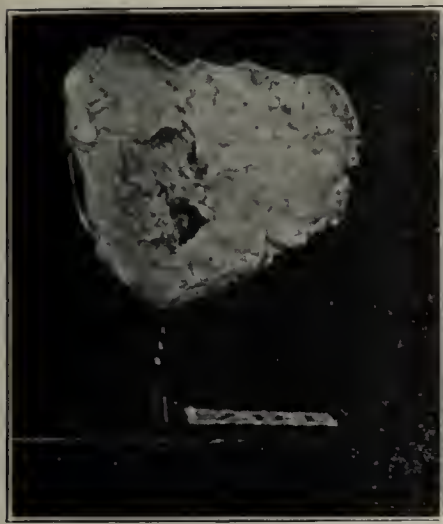


Fig. 6.



Fig. 7.

Fig. 6.—Odontome with structure similar to those shown in Figures 4 and 5.

Fig. 7.—Odontome of which history is given in Case 5.

cement irregularly placed; therefore it belongs to the third class.

CASE 3.—Figure 5 shows an odontome from the lower jaw of a young woman aged 22. She consulted me for an enlargement of the left side of the mandible. The bone was much distended bucco-lingually in the region of the first and

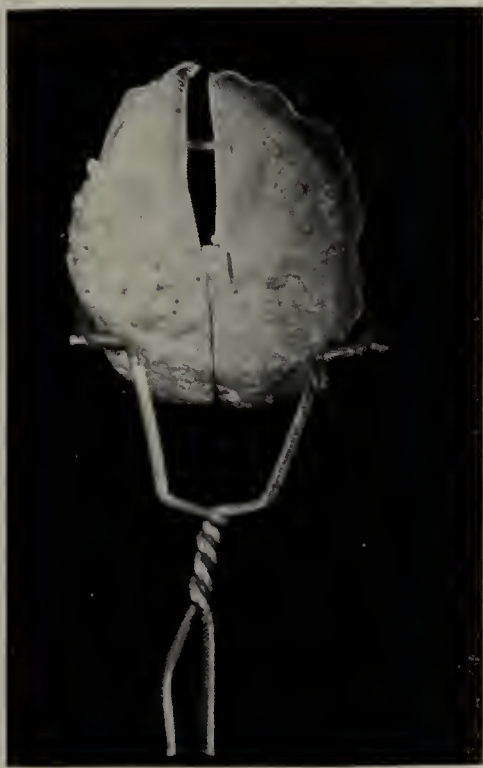


Fig. 8.—Odontome from which sections shown in Figures 9 and 10 were cut.

second molars. These teeth were quite loose and a small amount of pus was discharging at the gingival border of the gums about them. The enlargement had first been noticed two years before she visited me. At no time had there been pain, but for several months past there had been soreness of the teeth and gums overlying the growth. On passing a sharp steel probe in the interproximal space I discovered a hard substance which was rough and too dense to be bone; diagnosis, odontome. I removed the loose teeth and found their



Fig. 9.—Section cut from odontome shown in Figure 8.

under my observation Feb. 14, 1903. Examination disclosed swelling of the left cheek. There was an offensive discharge from the nostril. On examination of the teeth was found what I suppose was the buccal roots of the first molar (the second molar evidently having been lost, or never having erupted). This tooth being very loose, I attempted to extract it, but was unable to do so. Nitrous oxid was then administered, the gum cut away freely, and the flaps laid back, disclosing a dense movable body, which, with difficulty, I removed with the forceps, exposing the floor of the antrum of Highmore. The antrum was cleansed, irrigated and packed with iodoform gauze. Recovery was rapid and complete. Since the removal of this odontome, the third molar has erupted."

CASE 6.—Figure 8 shows another of the third class. This case was reported by Dr. Black to the Illinois State Dental Society in 1879. It is a somewhat smaller growth, measuring 24 mm. from before backward, 20 mm. from side to side, and

14 mm. from above downward. From sections of the tumor Dr. F. B. Noyes has made photomicrographs, which show most beautifully and perfectly the characteristic composition of this class of odontomes. In the report to the Illinois Society Dr. Black said of the histologic appearance of the sections: "For the purpose of examining its structure I sawed it through, halving it in an antero-postero-perpendicular direction, and cut some sections. I found all the tissues of a normally developed tooth, but in a state of confusion (Figs. 9 and 10). There is an entire absence of any proper pulp cavity. The disposition or arrangement of the tissues is peculiar and striking. It is as though there were a thousand teeth, exceedingly minute, growing as close together as they could be crowded, and the interstices between them filled up with enamel and cement. In the field of the microscope, with the sections I have, we shall often be able to see a number of these diminutive teeth at a single view. Each has its own little pulp chamber in due form, its own separate dentin

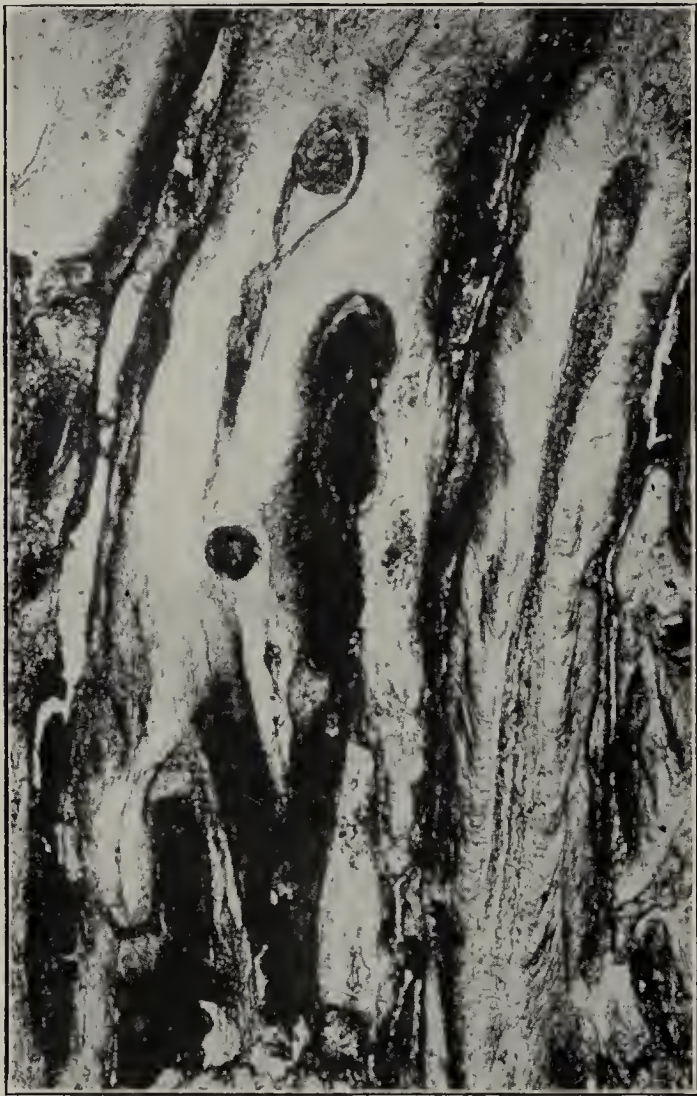


Fig. 10.—Section from odontome shown in Figure 8.

and its own enamel cap, and plastered in and about and added on to these there is a considerable amount of both enamel and cement of very irregular formation. Many of the pulp chambers are partially filled with calcospherites. These also appear in many parts of the specimen in profusion. It is interesting to note the resemblance of this odontome to the normal structure of the teeth of some of the lower orders of animals, especially some species of fishes, in which there are branching and radiating pulp cavities."

31 Washington Street.

ABSTRACT OF DISCUSSION

DR. M. H. FLETCHER, Cincinnati: I have never seen such large odontomas as Dr. Gilmer has shown without attachments. It only indicates what Nature will do when she is stimulated to action. This conglomerate mass is simply an instance of Nature's attempt to produce a new organ, as is shown in any new growth, such as carcinoma, sarcoma and various epitheliomas, which are proliferations, in a sense, of the tissue from

which they arise. They grow to a size which becomes pathologic. In the case of the odontoma you do not have the bad results that often occur with malignant growths. At the same time we have evidence of tissue stimulation resulting in dentine, enamel, and cementum many times resulting badly. On the other hand, surgeons often are able to utilize Nature's method of procedure to the end of saving life. I expect to show in a paper at this meeting the reproduction of cement on the root of a tooth to a remarkable degree. Among others I shall show a section of an odontoma that I found twenty-five years ago, which shows what stimulation of any reproductive tissue will do.

DR. FREDERICK NOYES, Chicago: I want to say a word about the histologic structure of these tumors and compare the different kinds that have come under my observation. Some are very loosely put together. There are hundreds of teeth that can be seen on the surface with the unaided eye, and a great many of those wash out with the soft tissues attached to the tumor and are lost in the preparation of the specimen. That one little tooth shown was one saved out of the sink in which the washing occurred, and on it the distribution of dentine, cementum and enamel is apparently normal. In other specimens you cannot distinguish a tooth at all, but you can see little globules of enamel on the surface and portions can be recognized as dentine and cementum. But when the section is cut, ground and examined, there are different canals from which the tubules radiate, and the adjoining teeth are fastened together by cementum. The whole structure is made up of individual teeth of one form or another, fastened together by a greater or less amount of cementum. I have never seen a specimen fixed and decalcified to show the cellular elements. I should be much interested to see one. If a piece could be cut out at once, decalcified and cut so as to determine the relation of the soft tissues to the hard it would be very valuable.

DR. JAMES E. POWER, Providence, R. I.: I should like Dr. Gilmer to go into the clinical manifestations. What causes the patient first to seek relief? How much pain is connected with this condition, especially the odontoma that he reported? Was it surrounded by an alveolar process, and how much lymphatic involvement is connected with that condition? Also, especially in the lower jaw, how much loss of function was there, and what are the principal facts which would enable a clinician to make the diagnosis? What would first bring the patient to the specialist's office? There are some tumors that will develop to a large size without giving the patient much pain, and I am trying to find out whether or not the odontoma is in that class, or whether it is a chronic inflammatory process, without marked symptoms.

DR. EUGENE TALBOT, Chicago: More than thirty years ago it occurred to me that there must be a law governing these conditions, just as there are other laws governing disease, etc. I have given considerable study during the last thirty years to the etiology of these obscure diseases of the face and jaws, and I have tried to lay out a law governing their pathologic development. Here we have a splendid illustration of two conditions in the development of man which must be taken into consideration, first in the arrest of development or shortening of the jaw in phylogeny from the lower vertebrates such as fish, reptiles, etc. In these animals we have, of course, long jaws with a large number of teeth; sometimes as many as three or four hundred, and as we ascend the scale in evolution the number of teeth grows smaller and smaller. In the toothed birds we have sometimes 170, but as we ascend the scale they diminish in number. On the other hand, the human jaw has grown much smaller, and is still growing smaller. I have found many of these conditions are what might be called arrest in phylogeny, and this arrest takes place at the first uterine period of stress, when the tissues are forming. Arrest takes place owing to some condition of the mother in which the reproductive organs become tired out, and this produces arrest at phylogenetic stages, and so here we see in this epithelial cord these bodies that remain throughout life. We find in the human being, in sheep, and in many other lower animals this large collection of teeth as a result of arrest in phylogeny. There may be two or three hundred, or no more than two or three teeth.

DR. T. L. GILMER, Chicago: I was aware that this was not a subject that would call forth much discussion, but think it one that interests most of us. It is well to have as many of these cases reported as possible that we may become more familiar with them.

I will answer by saying that in all of my cases there was inflammation and pain of greater or less degree in the area involved. The soft tissues overlying have not had the appearance of those overlying necrosed bone. They are more like those accompanying chronic alveolar abscess. There is no great thickening, or hardening of the soft parts. One patient came for two reasons—first, cosmetic considerations; the face was distended in the side affected, and second, the teeth whose roots had been absorbed were loose, and there was more or less discomfort, pain and discharge of pus. I have not found lymphatic involvement. No great amount of pus is absorbed, therefore the lymphatics are not appreciably enlarged. As to loss of function, I suppose Dr. Power had reference to loss of function of the jaw. The diseased area is more localized, with much less inflammation than is found accompanying severe, acute alveolar abscesses or with impacted third molars.

In none of my cases was there trismus. Sensation of the teeth or surrounding parts has not been destroyed. I have never seen a case prior to the inflammatory stage. The jaw was enlarged. Mention has been made of the slide showing what I denominated a tumor on the tooth root, in differentiation between it and an odontoma. It seems to me that an odontoma is a tumor made up of tooth substance or small teeth indiscriminately placed, while this specimen is clearly a tumor on the root of the tooth, or we might call it a malformed tooth. It appears to me as though there had been extrusion of a part of the tooth during development.

INFECTIONS OF THE ENDOMETRIUM *

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Professor of Gynecology, College of Physicians and Surgeons
BALTIMORE

All that is attempted in this paper is to describe the reactions of the various cells of the endometrium to infection. It is based on the study of a large number of endometria known to be infected. From these a few have been selected to illustrate the typical cell changes. No distinction is made between the results of the various infecting organisms. No attempt is made at a classification.

Up to the present time, writers undertaking to describe the pathologic changes in the endometrium due to infection have constantly confused them with the physiologic changes that take place during the menstrual cycle. As these physiologic changes have been recognized too recently for the profession in general to be familiar with them, it is necessary to review briefly the histology of the normal endometrium before taking up the changes that are found as the result of infection.

NORMAL HISTOLOGY

The surface of the normal endometrium is covered with a single layer of low columnar epithelium. The glands are tubular and lined by the same variety of epithelium as is found on the surface. Between the glands are the oval stroma cells that make up the mass of the tissue. They are supported by a fine net-work of connective tissue and interspersed with a few round or lymphoid cells.

Just after menstruation the glands of the endometrium are collapsed, straight and narrow; the epithe-

lium is low, regular, in a single layer, and the nucleus takes the stain evenly and deeply. The stroma cells are regular, oval in shape and stain well. Just around the glands are a few spindle-cells. Scattered through the stroma are a few small, round cells that stain very deeply. Occasionally a group of lymphoid cells are seen. These groups can be easily recognized by the compactness and regularity of the outline of the boundary of each group. Before attempting to recognize the results of infection in the endometrium, it is absolutely essential for the observer to familiarize himself with these scattered, round cells and the groups of lymphoid cells. Individually they cannot be distinguished from the small, round cells that appear in such great numbers as a result of infection. It is a case of distinguishing between a corporal's guard and an army.

Just before menstruation the glands are found distended with mucus and very irregular in outline; but there is a certain amount of uniformity in the irregularity seen in the glands, that is, all the glands in the

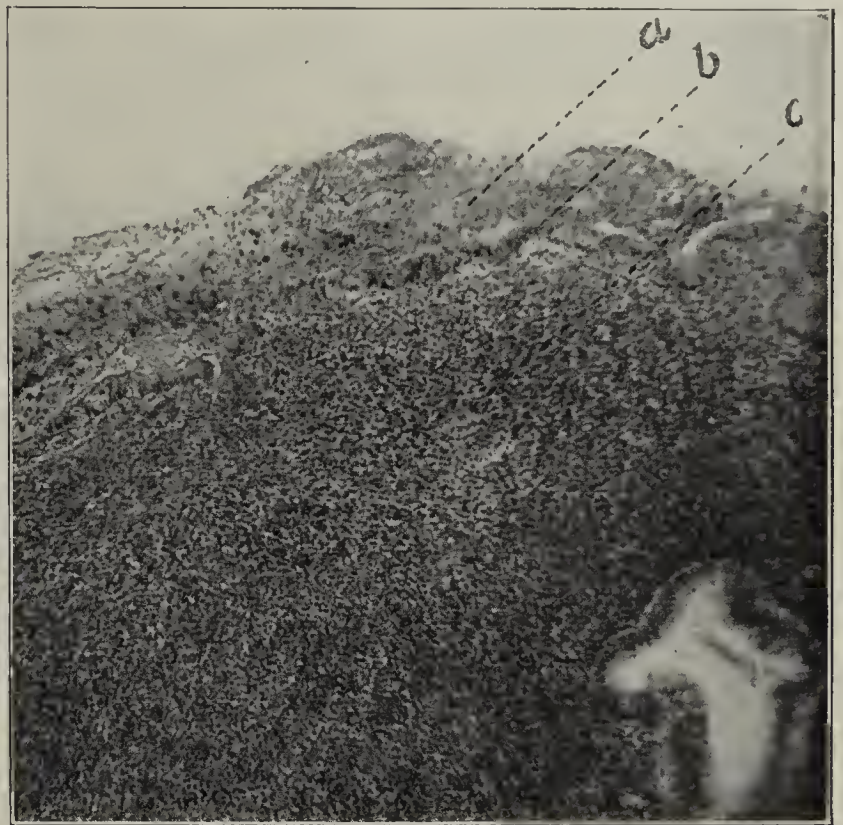


Fig. 1.—Section 874; M. E., aged 25, admitted to the hospital June 25, 1909; had had two miscarriages, the last one year ago. Last menses began June 14 and flowed ten days, bleeding very freely. She complained on admission of menorrhagia, profuse vaginal discharge, frequent micturition and pelvic pain. There was present an acute salpingitis. This field shows: *a*, an exudate over the superficial epithelium; *b*, superficial epithelium disintegrating; *c*, masses of round cells in the stroma.

same portion of the endometrium have a similar appearance. A part of the irregularity is only apparent and not actual, and is due to the swelling of the epithelium lining the glands and its projection in tufts into the caliber of the glands. The stroma cells are enlarged, more rounded and take the stain less deeply. This change in the stroma-cells is more marked in the superficial portion of the endometrium. There is some, though no very great, increase in the round cells in the stroma.

In the interval there is a gradual change from the postmenstrual to the premenstrual type.

PATHOLOGIC HISTOLOGY

The changes due to infection are noted in the superficial epithelium, in the stroma and in the glands.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Superficial Epithelium.—Under the influence of infection the superficial epithelium undergoes marked changes. The nuclei increase in size, become rounded, take less stain and present a granular appearance (Figs.

2 and 3). The cytoplasm disappears. A portion of the cells break down and disappear (Fig. 3). Round cells penetrate the epithelial layer and are lost in the uterine cavity (Fig. 2). A fibrinous exudate

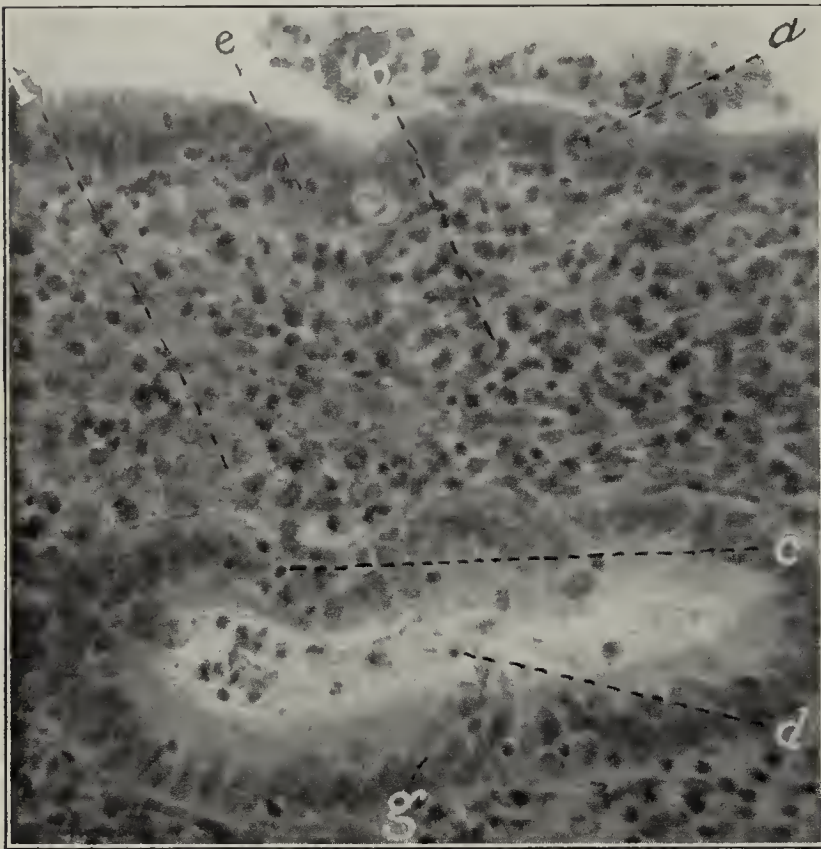


Fig. 2.—Section 836a, J. W., aged 20, admitted to the hospital May 5, 1909; had a miscarriage August, 1908. Last menses began April 20, and flowed thirteen days; since miscarriage the flow has recurred at regular intervals but has continued from ten to thirteen days. Patient had pelvic pain since August, 1908. Operation, May 7, 1909; curettage, infected tubes removed and uterus suspended. Infection probably dates from the time of the miscarriage. The field of illustration shows: *a*, round cells penetrating the superficial epithelium; *b*, round cells in the stroma; *c*, round cells penetrating the gland epithelium; *d*, round cells free in the lumen of the gland; *e*, the superficial epithelium has lost its columnar form, is rounded and swollen; *f*, the stroma cells are enlarged, rounded and approach the decidual type; *g*, the gland epithelium has lost its distinct shape and is beginning to disintegrate.

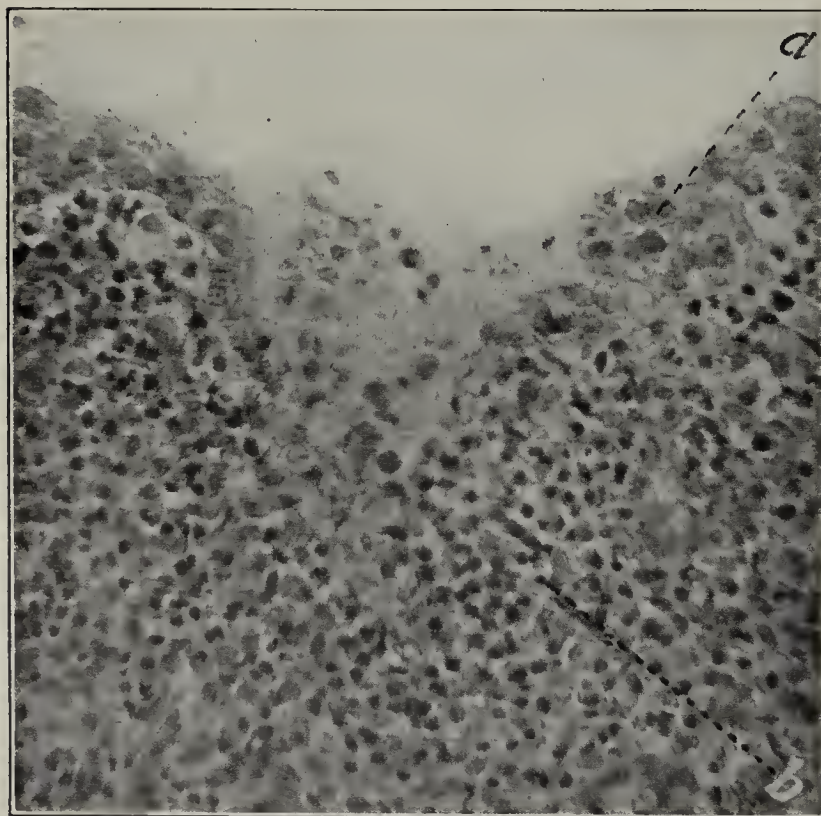


Fig. 3.—Section 836a (See clinical note to Fig. 2). This picture is from another field in the same section from which Figure 2 was made. It shows: *a*, the superficial epithelium is swollen and is breaking down; *b*, many round cells infiltrated among the enlarged stroma cells. The changes noted in these two figures were most marked in the superficial portion of the endometrium. In the deeper layers there was a very marked increase in the round-cell infiltration, but the glands were not materially affected.

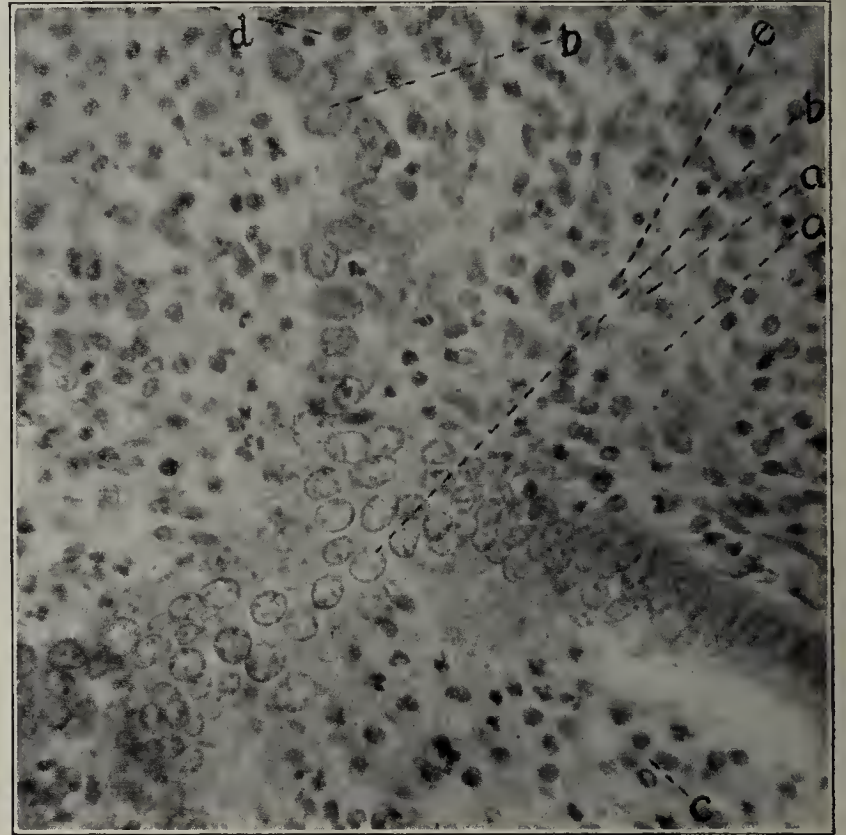


Fig. 4.—Section 872a; D. B., aged 36, admitted to the hospital June 19, 1909. Last pregnancy terminated at full term three years ago. Last menses two weeks ago, flowed seven days and very painful. Patient complains of pelvic pain and uterine hemorrhage; temperature after admission ranged from 99.5 to 101. Operation June 25, 1909; body of uterus and appendages removed. The tubes showed acute infection with much pus. This field shows: *a*, enlarged rounded stroma cells; *b*, enlarged and rounded gland epithelial cells; *c*, gland filled with round cells, leukocytes and broken-down epithelium; *d*, round cells penetrating the gland epithelium; *e*, round cells in the stroma.

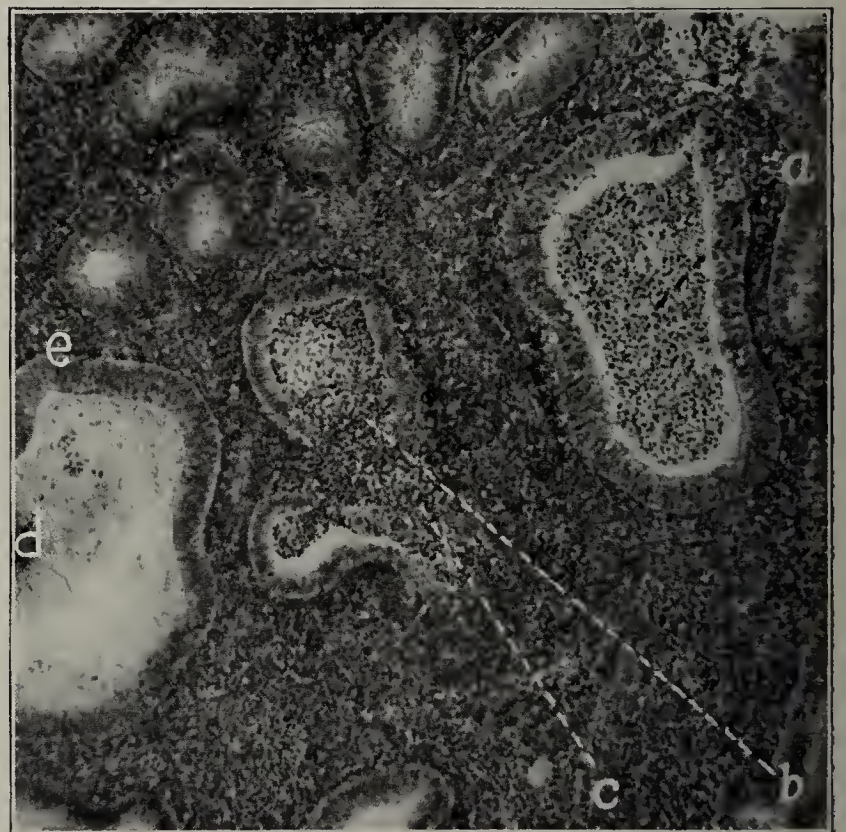


Fig. 5.—Section 431; J. E. M., aged 48, admitted to the hospital September, 1906. This patient was curetted in July, 1905, for the relief of a menorrhagia and leukorrhea that had persisted two years. The section from which the illustration was made is from the scrapings removed in September, 1906. The uterus at that time was not enlarged, was freely movable, and in normal position; the tubes and ovaries were normal. This field shows: *a*, gland filled with round cells and leukocytes; *b*, gland epithelium broken and round cells pouring into the lumen of the gland; *c*, masses of round cells in the stroma; *d*, irregular-shaped, dilated gland; *e*, heavy type of gland epithelium.

is occasionally observed, poured out over the epithelium (Fig. 1).

Stroma.—In the acute cases the first thing that strikes the observer is the extraordinary number of small, darkly staining round cells present. They cannot be distinguished individually from the same sort of cells

that are present normally in the endometrium, but, instead of being scattered here and there, or collected in groups with definite outlines, they are diffused in great numbers throughout large areas (Figs. 1, 2, 3, 4, 5).

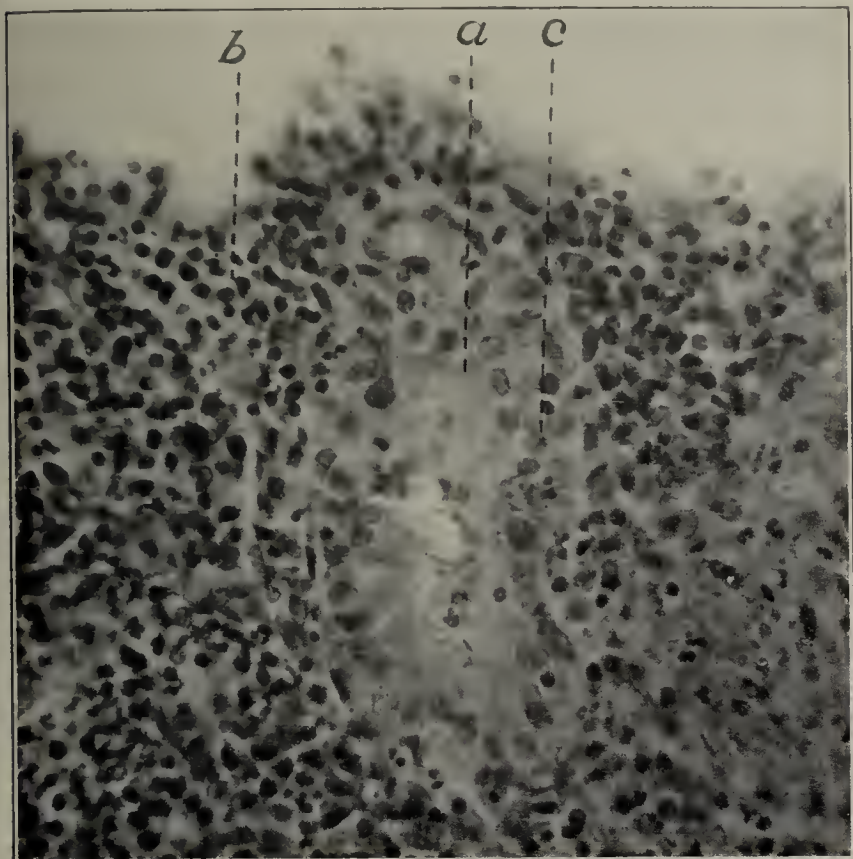


Fig. 6.—Section 846b; G. K., aged 30; admitted to the hospital May 13, 1909. Last menses began April 25, flowed seven days, regular, duration seven or eight days; leukorrhea for the past year; pelvic pain for the past five years, but suddenly increased two weeks ago. Operation May 18; supravaginal hysterectomy for infected uterus and appendages. Pns in both tubes and ovaries infected. The field here pictured shows the process of gland destruction: *a*, lumen of gland filled with disintegrating epithelium; *b*, round cells massed just outside of the gland; *c*, gland epithelium so modified that it can be recognized as such only by its position.

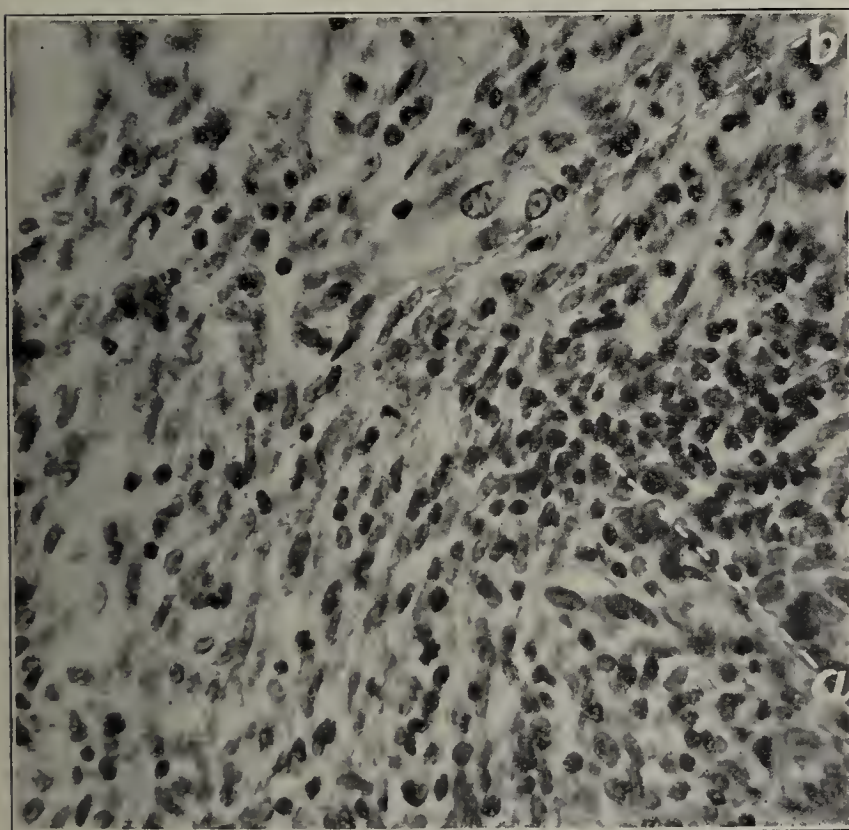


Fig. 7.—Section 846b. (For clinical notes see Fig. 6). This field shows: *a*, masses of round cells in the stroma; *b*, nearly all the stroma-cells have become spindle-shaped. These two fields from the same section show in the superficial layer (Fig. 6) a process that we recognize as an acute or recent one, while at about the middle of the depth of the endometrium (Fig. 7) are changes that are due to an older process. It is interesting to note that the clinical history indicates both a recent and an old infection.



Fig. 8.—Section 662b; B. K., aged 29. Last pregnancy ended at full term seven years ago; last menses Jan. 18, 1908, scanty, irregular and painful. Patient had symptoms of an infection six years ago; cystitis three years ago. Operation Feb. 14, 1908; supravaginal hysterectomy for infected uterus and appendages. This field shows: *a*, glands in the upper layer of the endometrium, numerous, small and irregular in outline; *b*, glands in the deeper portion of the endometrium much dilated; *c*, gland epithelium consists of a single layer and much lower than usual; *d*, gland epithelium is tufted as it is in the glands of the premenstrual endometrium. Under a higher magnification the stroma is seen to be made up largely of spindle-cells interspersed with a few round cells.

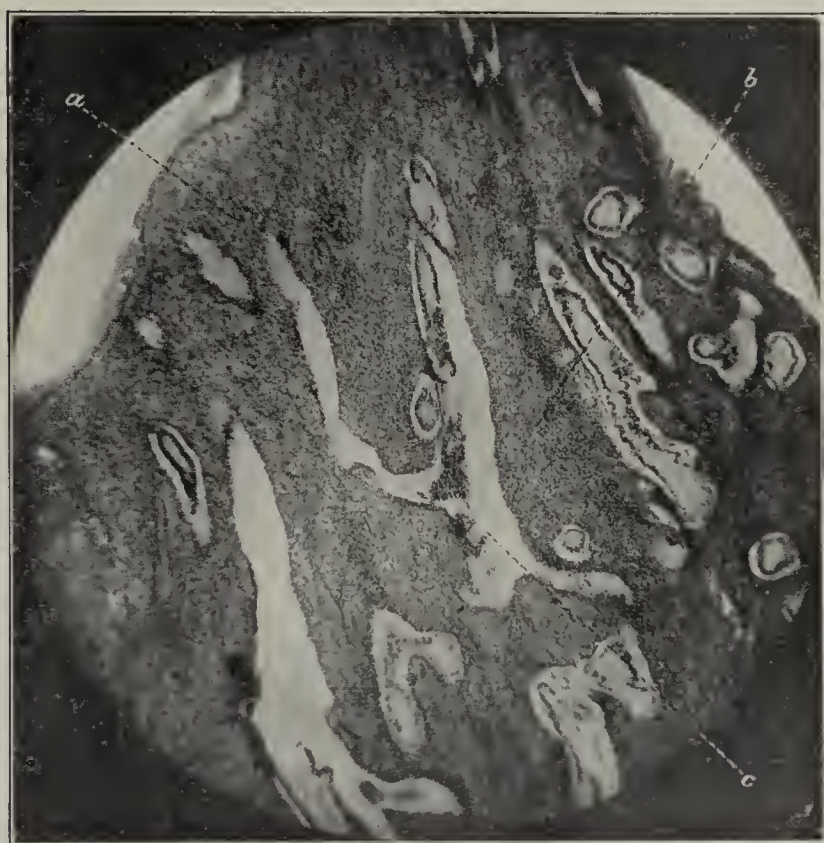


Fig. 9.—Section 688b; E. D., aged 27. One child born four years ago; last menses April 4, 1908, regular, flows three to five days, very painful. Patient has had pelvic pain, leukorrhea, dysmenorrhea and burning micturition since labor four years ago. Operation April 10, 1908; supravaginal hysterectomy for infected uterus and appendages. The tubes were full of pns. This field shows: *a*, glands in the superficial part of the endometrium contracted or absent; *b*, glands in the deeper part much dilated.

The first change that is noted in the stroma-cells is an increase in their size; they take the stain less deeply and have the appearance of the decidua-like cells so frequently seen in the premenstrual endometrium or under any condition of increased vascularity (Figs. 2, 4). As the process continues the stroma-cells elongate and become spindle-shaped. Among these spindle-cells are seen not so many round cells as in the beginning of the infec-

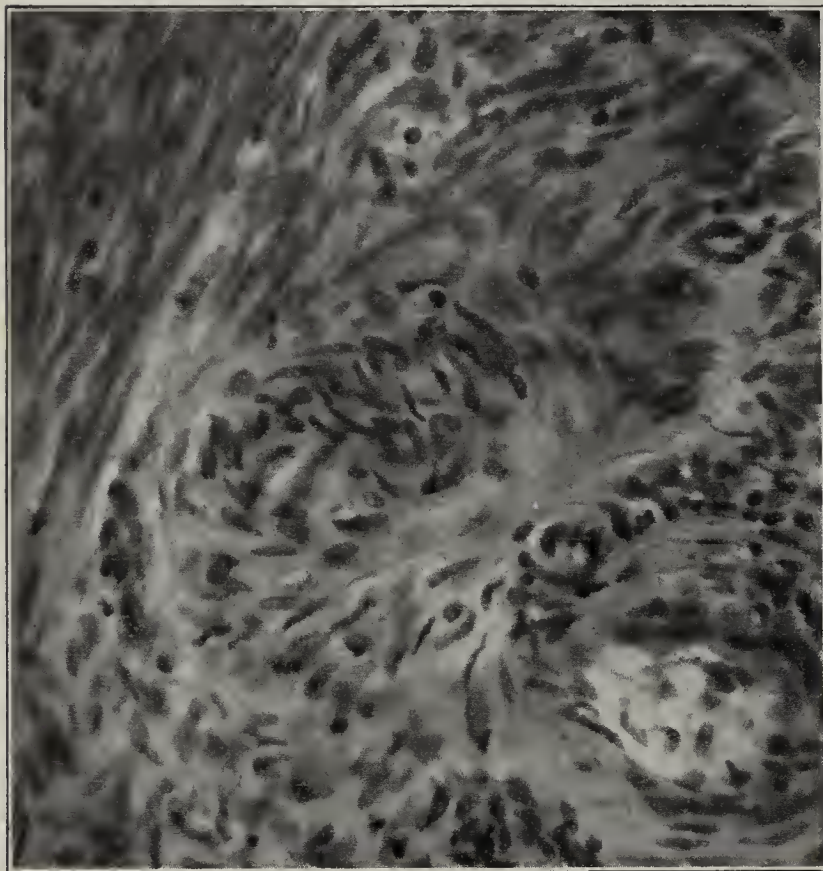


Fig. 10.—This is a higher magnification of the section shown in Figure 9. The field is about half way between the muscularis and the surface of the endometrium. There is an absence of cells that even resemble the normal stroma cells.

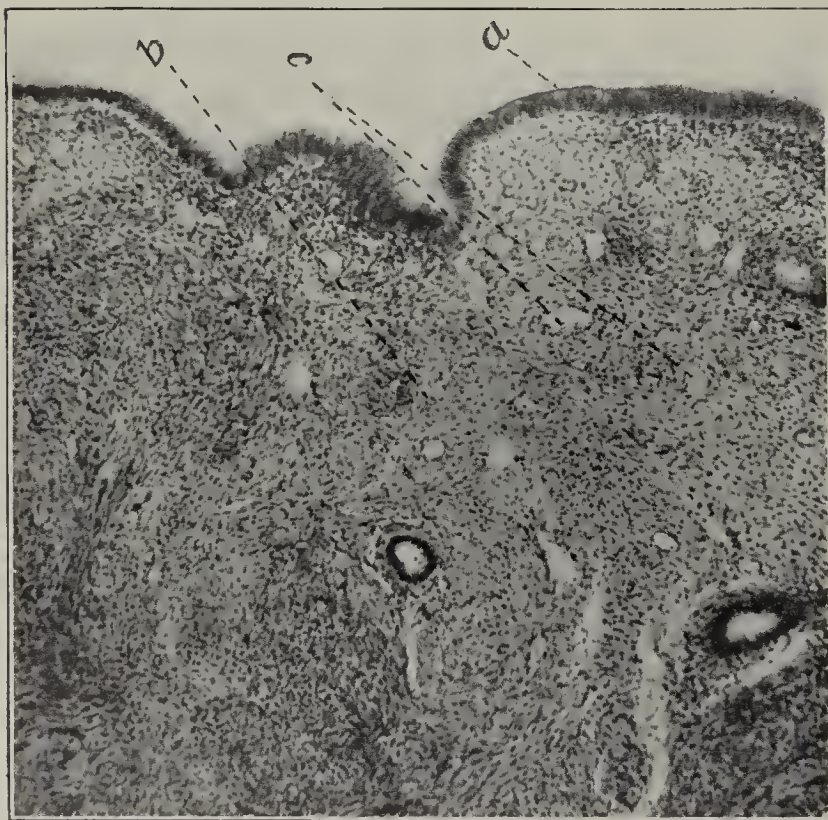


Fig. 11.—Section 799a: A. C., aged 47; admitted to the hospital Feb. 10, 1909. Last pregnancy terminated in a miscarriage eighteen years ago; last menses began January 7, and flowed sixteen days; up to three years ago menses were regular and the flow lasted seven or eight days, since then the periods have been irregular, painful and profuse. Operation Feb. 11, 1909; supravaginal hysterectomy. Associated lesions; uterine myoma, infected uterine wall, pyosalpinx, adenocystoma of the ovary. This field shows: *a*, superficial epithelium intact; *b*, almost entire absence of glands and the stroma cells are replaced by connective tissue; *c*, numerous blood-vessels. The remains of the endometrium is much thinner than the normal endometrium.

tion, but many more than normal (Fig. 7). If the infection continues these spindle-cells ultimately assume a fibroblastic type (Figs. 10, 11). In all cases these changes in the type of the stroma-cells are most marked at first in the superficial portion of the endometrium, but if the infection continues the entire thickness of the mucosa becomes involved.

In many instances plasma-cells can be seen, but they are so difficult to distinguish from a round cell lying over a stroma-cell that it is not thought advisable to lay much stress on their presence.

Glands.—The changes in the glands include the changes in the epithelium, changes in the gland contents and changes in the number, shape and caliber of the glands.

The gland epithelium undergoes practically the same changes as have already been noted in the superficial

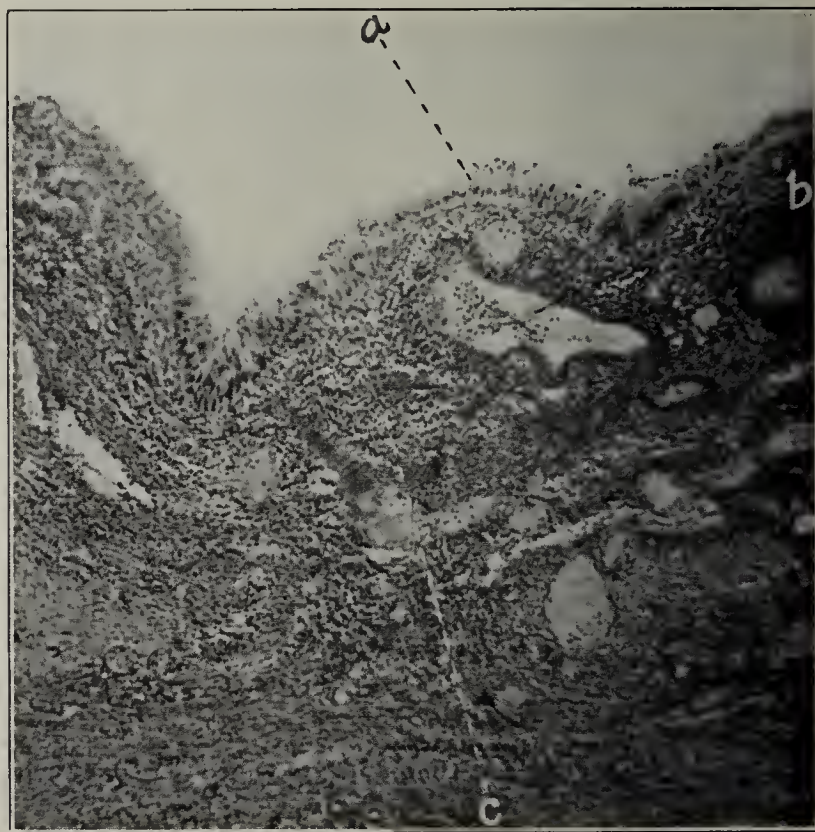


Fig. 12.—Section 680c: M. C., aged 49; last menses four years ago. First began to feel discomfort about one month before operation. This patient had an adenocarcinoma of the cervix that produced a complete atresia. The body of the uterus was larger than a man's fist and distended with pus. The section is shown to illustrate what happens to an endometrium in a pyometra; *a*, thinned out superficial epithelium; *b*, the remains of a gland; *c*, all this area is densely infiltrated with round cells which are also present in large numbers in the muscularis; very few glands remain.

epithelium, except that in the glands the process is much more frequently carried to the complete destruction of the epithelium and the consequent destruction of that part of the gland or glands involved (Figs. 6, 11, 12). Not infrequently epithelial cells will be seen which can be recognized as such by their relation to each other, but which taken individually cannot be distinguished from the modified stroma cells (decidua-like cells) found in the same field (Fig. 4).

In many instances the glands become filled up with round cells, leukocytes and broken-down epithelium. The round cells and the leukocytes get into the gland either by penetrating the unbroken epithelium or by the local breaking down of the epithelium, allowing them to pour in (Figs. 4 and 5). This filling up of the glands does not take place in all of the glands of any infected endometrium, but when it is present it may be seen in from three to a dozen glands in a section. The migration of the round cells and leukocytes through the super-

ficial and gland epithelium is undoubtedly the source of the intermenstrual discharge which has so long been recognized clinically as one of the signs of infection of the endometrium.

The foregoing are the marked changes that are noted as taking place during the time that the cells of the endometrium are subject to the influence of an infection. There are, no doubt, some patients who recover so completely that no trace of the past infection remains. On the other hand, in the group of cases studied in the course of the preparation of this paper it was found that in every case in which the clinical history and local lesions pointed to an infection, either existent or preexistent, there was some recognizable lesion in the endometrium. These secondary results no doubt vary with the severity of the past infection and are not perfectly constant, but some of a very few conditions are practically always present.

The superficial epithelium, even where it has been partially destroyed, apparently is reproduced and is present as a continuous single layer (Fig. 11). In the stroma the round cells decrease to their proper proportion and the stroma-cells return to their normal ovoid shape and size, or retain a spindle shape, or assume the fibroblastic type. The glands in the upper half of the endometrium are found to be either numerous, small and angular (Fig. 8), or much fewer than normal (Fig. 9). The glands of the deeper part are frequently much dilated (Figs. 8, 9). This dilatation is quite different from the dilatation of the glands in the premenstrual endometrium. In the endometrium, after infection, the dilatation is apparently due to retention from destruction of the portions of the glands passing through the superficial part of the endometrium. The lining epithelium of these distended glands is usually thinned out by compression. In other instances the infection has been so severe that all, or nearly all, of the glands have been destroyed (Figs. 11, 12).

From this study of endometria known to be infected we are in a position to say, with a reasonable degree of accuracy, that an endometrium under examination either is infected or that it is not infected; and usually, if there is no evidence of a present infection, whether it has been infected.

It is useless to attempt a classification of the results of infection, because it is possible to find all stages of the reaction to infection in the same endometrium.

6 West Preston Street.

ABSTRACT OF DISCUSSION

DR. EMIL NOVAK, Baltimore: That the endometrium reacts toward acute infection in much the same way as does any other tissue cannot be impressed too strongly. A more interesting and difficult problem is that of chronic infection of the endometrium and of chronic endometritis. If we assume that the endometrium reacts in the same way to a chronic process as do other structures we would expect to find in such cases a certain number of small round cells, perhaps fibroblasts, etc.

The next question is, are all cases with these findings to be classed as chronic endometritis, or, to make it even broader, are all to be considered as chronic infections? We must bear in mind that we often find fibroses of the endometrium in conditions which are probably not of an infectious nature, as, for example, after prolonged passive hyperemia. Whether or not fibroid changes in the endometrium are to be called chronic endometritis is therefore often a difficult question. I do not think we can tell in every case. It is much the same problem as if an individual is found dead on the street. One cannot tell whether he died of apoplexy, of heart disease, or of something

else. We see the result, but we do not know what brought it about. So, whether there has been merely a prolonged hyperemia or an actual infection, the terminal condition in the endometrium is apt to be the same.

Another interesting question in this connection is that of the avenues of infection of the adnexa in cases of general pelvic infection. Formerly it was believed that in many tubal infections the process reached the tube through the lymphatics rather than by direct continuity. It seems to me that this paper throws light on this subject. If it can be shown, as seems to have been done, that in practically every case of tubal infection in which the endometrium was examined microscopically evidences of infection were found, it would seem that the infection must have traveled to the tube by way of the endometrium.

PERFORATION OF UTERUS AND TRANS- FIXION OF CONTIGUOUS MESENTERY AND PERITONEUM BY BONE CROCHET-NEEDLE

OPERATION AND RECOVERY

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LA JUNTA, COLO.

History.—A married woman residing in a neighboring town, under the impression that she was very much in need of a monthly regulator, one evening on retiring passed into the uterus a bone crochet needle, the sharp end first, from which she had previously filed the hook-like projection. This important duty performed, she went peacefully to sleep. The next morning when she made search for the regulating apparatus it was not to be found. A hurried but careful search of the bed and the room failed to show the missing article. In spite of the fact that she felt no pain at any time after inserting the needle she was somewhat concerned as to what had happened to the instrument as well as to herself. After a few hours of disturbance of mind, she called in the family physician, who made a careful examination but had no better success in finding the needle than had his patient. The patient did not at this time, nor afterward, give any sign of having punctured the uterus. Only her tearful protestations that by no possibility could the instrument have passed away persuaded her physician that it must be somewhere in her internal economy.

Examination.—In order to satisfy himself and the patient, counsel was called and under anesthesia the uterus was dilated and explored but without result, either so far as finding the missing needle was concerned, or, incidentally, any signs of conception. The day afterward she was brought by train some 90 miles to my office for examination. Her condition at this time was, temperature 99, pulse 90, slight discharge from the uterus, marked tenderness on pressure and constant soreness, but no rigidity, over the left pelvic region. On the theory that, if the article was in the abdominal or pelvic cavity, being of bone it should cast a shadow in an x-ray picture, a radiograph was made. The patient's weight being 120 pounds, an 8-inch W-II tube was used, with penetration No. 7 plus, giving an exposure of two minutes, using a 12-inch coil as the exciting agent. The bowels had not moved for over twenty-four hours and owing to the presence of fecal matter the resulting radiograph was not satisfactory. The bowels were accordingly cleaned out with heavy doses of salts, followed the next morning by a high enema. At this time a two-minute exposure was given, using a 7-inch Friedlander tube with penetration No. 8, with the result that the bone implement was found transfixing the mesentery and peritoneum, with the middle of the needle approximately opposite the crest of the ileum, its depth in the pelvic cavity being of course a matter of conjecture.

As neither fever nor other serious symptoms had developed at this time, four days after the passage of the instrument, it was not deemed necessary to be in any great

hurry to remove it, and the patient preferring to have the operation at her residence instead of at the hospital, she was sent home accompanied by a nurse.

Operation.—On the second day afterward she was operated on by a median abdominal incision. Immediately after opening the abdomen the needle was found as described above. It was removed, no hemorrhage following, by being grasped by the blunt end next the uterus and drawn downward. Examination of the uterus showed a punctured wound directly in the fundus, as near the center as it could possibly have been made. Two No. 1 iodine-catgut sutures were taken in the uterus to close this rent, and the abdomen closed with layers of catgut sutures. Convalescence was uneventful.

I am led to report this case because I believe it to be unique in several particulars:

First, the passage of such an instrument as is here shown through the uterus and the adjacent mesentery and peritoneum without producing pain, shock, hemorrhage or infection seems worthy of note.

Second, perforations of the uterus by instruments, even in skilled hands, is not a rare occurrence, but its perforation and the passage of the instrument through the uterus into the peritoneal cavity must certainly be.

Third, the case demonstrates the utility of the radiograph in clearing up what would have been, in the absence of subjective and objective symptoms, a puzzling case as to the proper method of procedure.

A CHRONIC ITCHING PAPULAR ERUPTION OF THE AXILLA, PUBES AND BREAST *

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Professor of Diseases of the Skin, College of Physicians and Surgeons, University of Memphis

MEMPHIS, TENN.

Dr. George Henry Fox,¹ in 1902, described a peculiarly localized papular eruption in the axilla which was extremely itchy and resisted all treatment. In the same article Dr. Fordyce reported the histologic findings in Dr. Fox's case, but at this time no attempt was made by either to classify the condition.

In a subsequent article² before the thirty-second annual meeting of the American Dermatological Society in 1908, Dr. Fordyce called attention to the lack of weight given by the American dermatologists to a group of skin diseases classed by Dr. Brocq under the term "lichenification," reported more in detail, both clinically and histologically, an additional case, and tentatively classed it among those eruptions to which Brocq has given the name *nevrodermite chronique circonscrite*.

In reviewing this article, Dr. Colcott Fox,³ after complimenting the author on his work, says: "We think many will hesitate to pronounce the condition a lichenification, as we know that state in this country."

It would seem from this that the British dermatologists, of whom Dr. Colcott Fox is one of the most painstaking clinicians and histologists, were as derelict as their American confrères in recognizing this identification of a class of skin diseases that assisted much in the simplification of the nomenclature of dermatology.

But Dr. Fordyce's classification has found a better reception in circles equally interested and no less crit-

ical, as I have seen a personal letter from Dr. Brocq to Dr. Fordyce, in which he entirely agrees with the latter that the affection in question is a lichenification and states that he has seen numerous similar cases in his practice. I have had under my observation for the past two years a case that is a clinical prototype of those reported by Drs. Fox and Fordyce.

History.—The patient is a young woman, aged 21, anemic and decidedly neurotic. Her family history is unimportant, her father having died at thirty-eight years of age of pneumonia. One brother died recently of pulmonary tuberculosis. Her mother, three sisters and two brothers are all in good health. Her past history is interesting in that she has had three distinct, severe attacks of hemoglobinurie fever at 12, 14 and 16 years of age. At 15 she contracted scabies, which lasted four or five weeks. From 14 to 17 years of age she suffered severely with periodical headaches, and the menses were not established until the latter year, and then appeared only at irregular intervals. The disease for which she consulted me began at 17 years of age while attending school as an intense itching in the axillæ. In three or four weeks the papules appeared, and she then noticed that the hairs in that region became brittle, and as she expressed it, "dropped



Fig. 1.—Papular eruption in axilla.

off." The pubes became affected four months later in a similar manner, and not until a year later did the breasts become involved.

Examination.—When she came under my care, the disease was limited to the hairy portion of the axillæ and pubes, and about the nipples of the breasts. In the axillæ and over the pubes the eruption consisted of closely aggregated, round, smooth, firm papules, in size from a pin-head to a small pea, those in the pubic region being somewhat larger than in the axillæ. At the apex of each papule was a slight depression or a grayish plug. When the skin was put on a stretch the lines were markedly exaggerated, the papules occupying the ridge (Fig. 1). The color over the region affected was normal, or a pale pink. The lesions on the breasts were more discrete, there being not more than a dozen papules on either breast. These were deeper in color and about the size of a large pin-head. Alopecia was complete in the axilla and over the pubes. The itching was almost intolerable, frequently depriving the patient of sleep, and at times she would lose control of herself to the extent of having to be forcibly restrained by two of her sisters. It was always worse at night, and during and after any excitement, either pleasurable or otherwise. Re-

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Jour. Cutan. and Gen. Urin. Dis., January, 1902.

2. Am. Dermat. Soc., 1908, p. 118.

3. Brit. Jour. of Dermat., xxi, 269.



Fig. 2.—Edema of papillary layer of corium. Elastic fibers destroyed or so changed in character that they do not take characteristic stain.



Fig. 3.—Destruction of the epidermal cells with vesicle formation.



Fig. 4.—Epidermis showing hyperkeratosis, vacuole formation about nuclei and edema of the corium.



Fig. 5.—Hair follicle and epidermal projection enclosing sweat duct with degeneration of cells. Cellular infiltration in foci in corium.

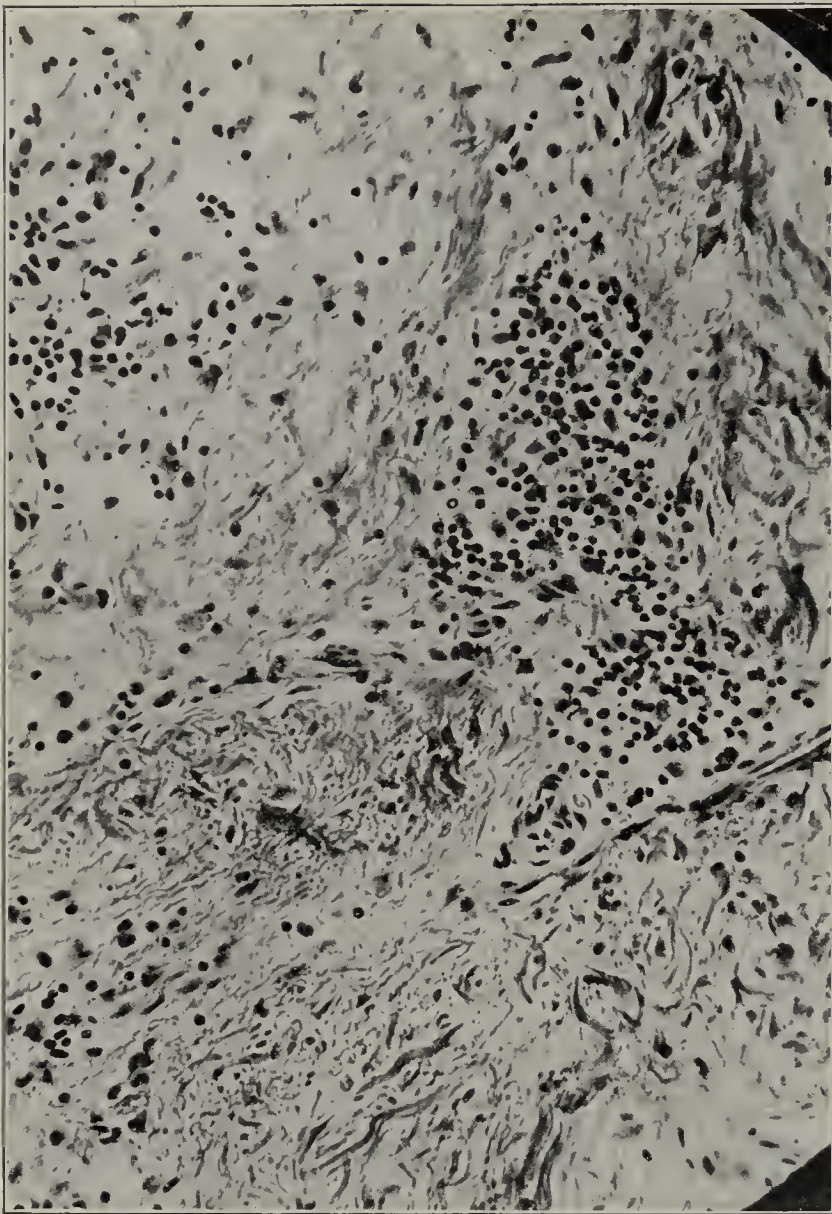


Fig. 6.—Character of cell infiltration in corium.

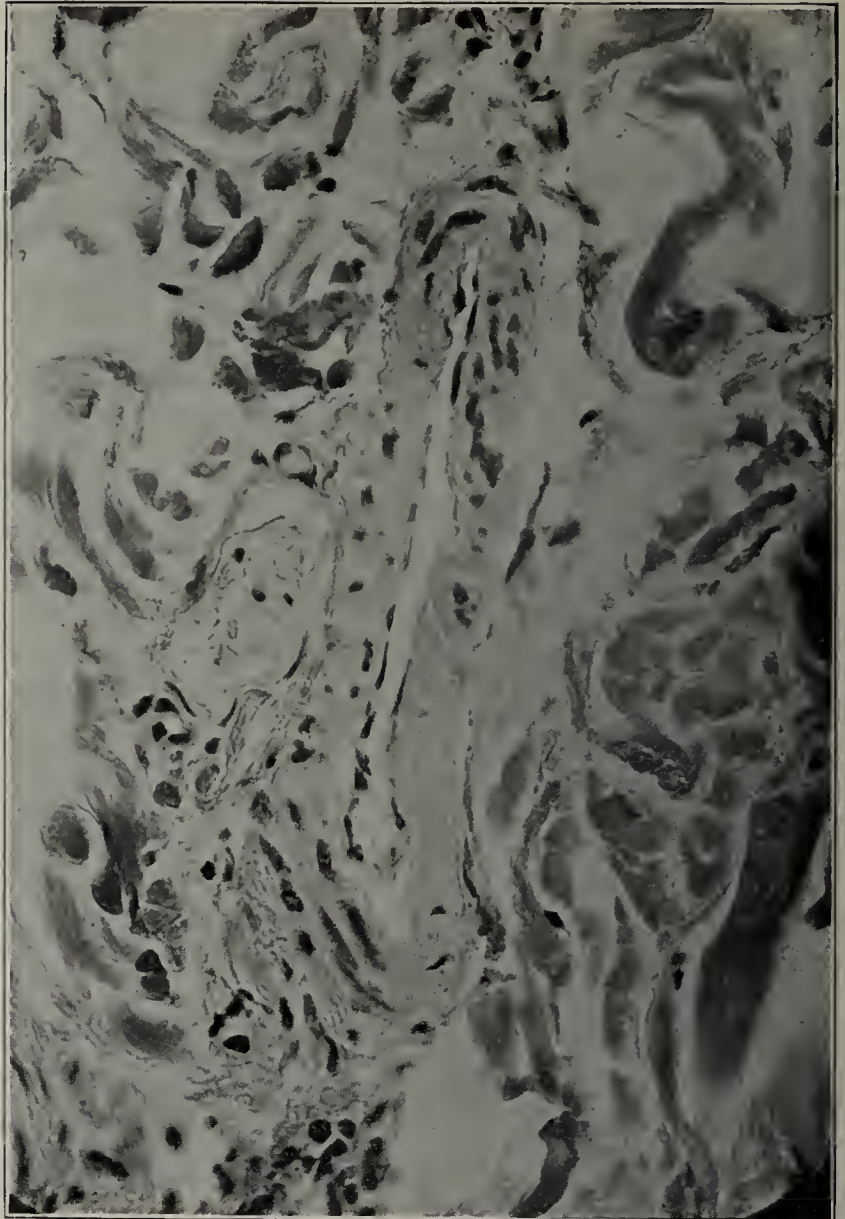


Fig. 7.—Hyaline degeneration of small artery in corium.

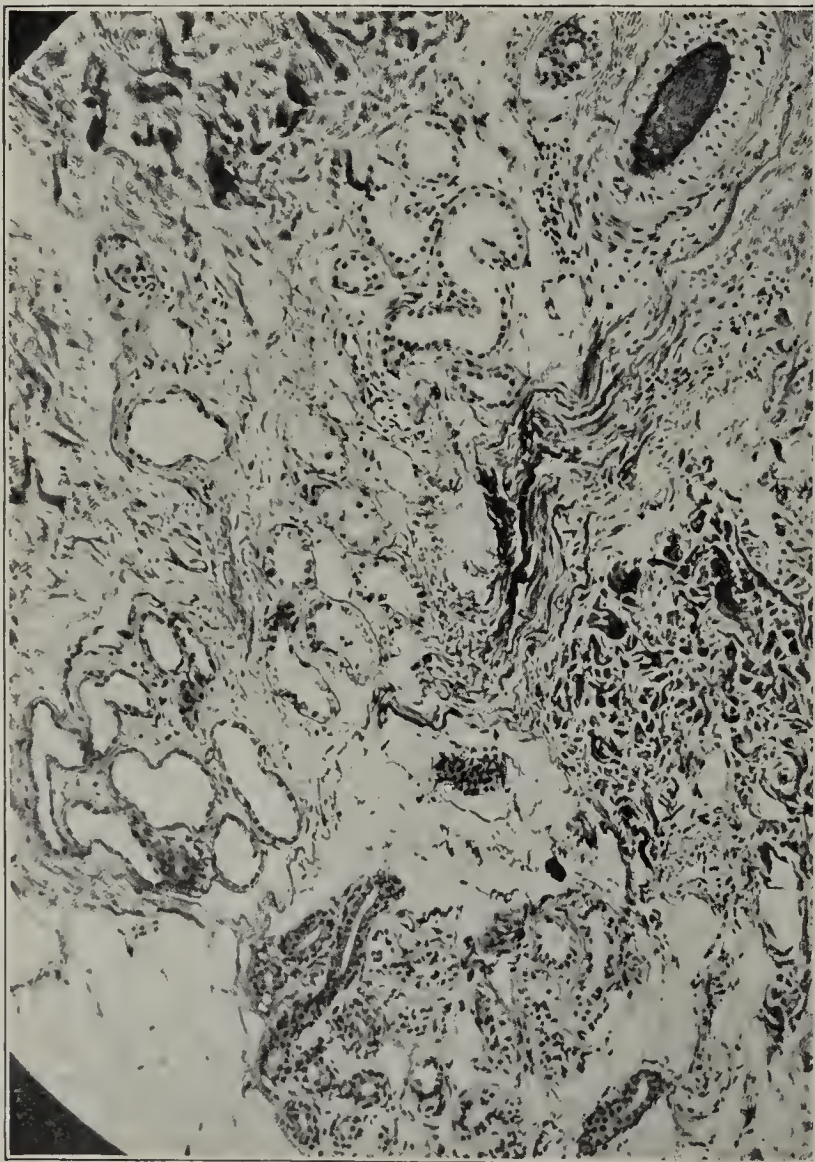


Fig. 8.—Degeneration of lining cells and dilatation of glands with adjacent apparently uninjured glands.

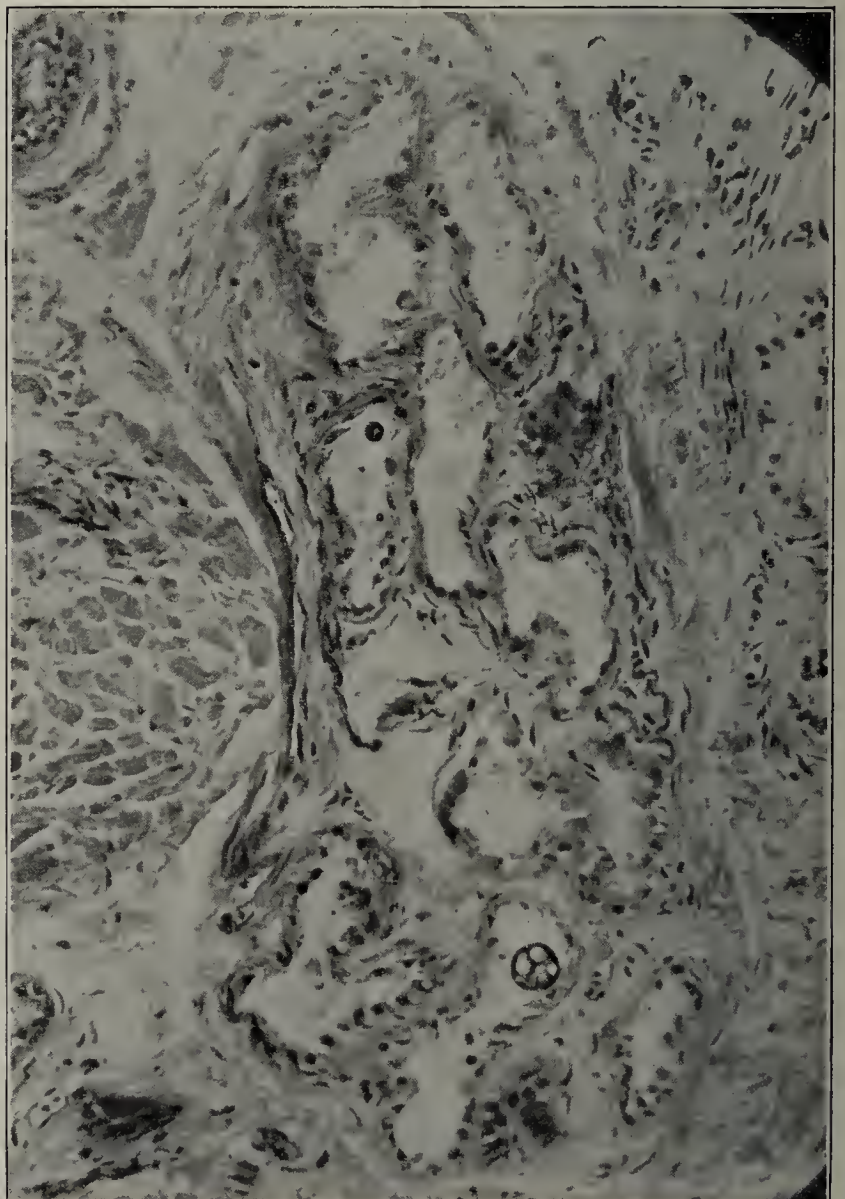


Fig. 9.—Dilatation of sweat glands showing partial casts. In two of the gland acini are concretions or bodies mentioned in text.

peated thorough examinations revealed no constitutional disturbance, blood and urine being negative.

Treatment.—Treatment in my case proved even less successful than in those previously reported. She was given innumerable antipruritics, with only temporary relief. Resorcin, pyrogallie acid, chrysarobin, and various tars, in increasing strength, were used, with no better results. The x-ray was very positively refused, but high-frequency currents were applied for over four weeks. Saline cathartics were administered for more than a month, as were salicin and phenyl salicylate, in increasing doses. In October, 1908, after she had been under my care for five months, the patient's condition became so deplorable that it was thought best to place her under the constant observation of nurses. For this purpose, she was sent to the Presbyterian Hospital, with a nurse in constant attendance. She was allowed from two to five hours outdoor exercise, all medication, both external and internal, having been stopped, except hot salt solutions applied to the diseased areas. Under this treatment she rested better, her mental condition improved and she gained some weight. When last seen, less than a month ago, the condition in the axilla and over the pubes showed little or no change. The papules were still present, the hair had not returned and the itching though less frequent was at times very annoying. The patient's mental condition had continued to improve, and she was devoting all her time to music and outdoor life. She still continued the use of the hot salt water packs.

Biopsy.—Sections made from a biopsy taken from the axilla showed an extensive acanthosis, most marked about the sweat-duct, a dense hyperkeratosis at the mouth of the duct, in some instances extending deep into the duct proper. There was an extracellular and intracellular edema, with a shrinkage of the nuclei seen throughout the prickly cells, and in places small vesicles had formed. In the papillary and subpapillary layers of the corium, a marked degeneration and edema were found, and the elastic tissue in this region was so changed that it did not take the usual stains. An infiltration of lymphocytes and plasma cells was present in foci and about the vessels and sweat glands. A hyaline degeneration was seen in some of the arteries of the corium, with an atrophy of the nuclei of the wall, but by far the most marked change was the dilatation of the sweat-gland accompanied with a degeneration of the lining cells. In some of the tubules, there were partial casts, and in two there were found round concretions or bodies the nature of which is to me obscure.

The histologic picture in my case differed only in minor details from that reported by Dr. Fordyce; namely, the hyaline degeneration of the arteries and the changes in the staining quality of the elastic fibers.

In conclusion, it is apparent that Dr. Fordyce's contention is well grounded, and that as his conclusions are approved by Brocq, we may accept this peculiarly localized dermatosis as a lichenification, the etiology of which is still in doubt.

If one might hazard a guess at the cycle of histologic changes occurring in the development of the disease, I would suggest that the pathologic condition began in the sweat-glands, with a morbid change in the lining cells, followed by a destruction of the cells and a dilatation of the gland proper, and that all other changes demonstrated were secondary to this process, and due to the elimination of a toxin yet unknown.

Memphis Trust Building.

ABSTRACT OF DISCUSSION

DR. J. A. FORDYCE, New York: Through the kindness of Dr. George H. Fox of New York I saw a third case of this affection in which the eruption occurred in the identical localities, and I have had personal communications with other physicians who have described similar cases. These observations might lead one to think that we have at least a distinct clinical picture if not a definite entity. As supporting the toxic origin of such a condition, we see on other parts of the

skin purplish thickened patches made up of papules which have run together and which occur in individuals who are suffering from some toxemia. This toxemia may result from the excessive use of tea, coffee, or alcohol, or possibly a combination of these agents, with intestinal fermentation. In the cases which occur on other parts of the body than the axillary or pubic region I have been unable to demonstrate changes in the sweat glands, but subsequent investigation may show them.

A REPORT OF SIX CASES OF SYPHILIS TREATED WITH SALVARSAN

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In selecting cases for experimentation with "606" an attempt was made to choose those with demonstrable lesions and those which would best represent the various stages of the disease, excepting the meta- and para-syphilitic conditions.

The list of cases includes one with primary lesion of tonsil, one with primary lesion of penis with secondary eruption, two with maculopapular secondaries, one with ulcerating secondaries of the tonsils and vocal cords, and one with gummatous lesion of forehead. Except in one instance, an alkaline solution of the drug was injected into the buttocks according to the technic developed by Lesser.¹ In this exception the same solution was injected intravenously, after being first diluted with distilled water to 200 c.c., according to Schreiber's method.²



Fig. 1.—Lesion in Case 6 before injection with salvarsan ("606").

The intragluteal injections gave very little pain at the time of administration except in one nervous individual. In every case the pain became quite severe within an hour after injection and in all but one case morphin was required to give relief. The pain was somewhat less the day following and the patients were able to leave their beds and to walk about, though with more or less difficulty on account of the soreness in the buttocks and pains radiating along the course of the great sciatic nerve. Local tenderness and induration developed and increased until about the fifth day, after

1. Described by Corbus, B. C.: The Value of Ehrlich's New Discovery, "606" (Dioxydiamidoarsenobenzol), THE JOURNAL A. M. A., Oct. 22, 1910, p. 1471.

2. Schreiber: Verhandl. a. d. 82 Versamml. Deutsch. Naturforscher u. Aerzte in Königsberg, Sept. 20, 1910; Deutsch. med. Wehnschr., 1910, No. 41, p. 1899.

which it gradually subsided, though the latter was still noticeable in some cases twenty days after treatment. No reddening of the skin or fluctuation at the site of injection was observed.

Following each intragluteal injection there was a gradual rise in temperature to about 101° F. reaching the maximum on the third or fourth day with the general symptoms of fever, such as headache, loss of appe-

TABULATED RESULTS OF SALVARSAN ("606") MEDICATION IN SIX CASES

Age	Infection	Previous Treatment	Condition Before Injection	Injection	Local Effects	Condition After Injection	Remarks
42	Chancre of penis 1889. Treated locally. No secondaries were noticed. Developed tertiary lesion 7/1/10.	Gumma incised and treated with antiseptic dressings. No mercury or iodids taken.	Gummatous lesion of frontal bone began about July 1, 1910. Was incised about September 1. On admission to hospital this was about 2½ by 2 in. in diameter and projected from forehead as a hard mass. There was a small incision in one portion of mass discharging pus. Loss of appetite and general feeling of ill health. Wassermann positive.	11/1/10—6 gram "606," dissolved according to Lesser's method in a 20-c.c. alkaline solution and 16 c.c. injected into each buttock.	Patient cries with pain at the time of injection and complains of pain extending down legs. Painful indurated mass in each buttock with maximum tenderness on the third day. Tender to pressure twelve days after injection. No redness of skin or softening at any time.	11/3/10—Two days later gumma softer and slightly smaller. Improvement steady. 11/19/10—No discharge from incision and mass less than half the original size and very soft and flat. Gain of three pounds in weight; feels well; appetite good. Wassermann positive.	11/2/10—Erythematous eruption involving flexor surfaces of arms and upper part of chest. 11/3/10—Eruption fading rapidly.
21	8/15/10—Chancre of penis. Spirochetes found. 11/15/10—Maculopapular eruption appeared.	Local for chancre only. Primary sore lasted seven weeks.	Maculopapular eruption scattered over body, more numerous in palms; mucous patches in mouth. General glandular enlargement; malaise, loss of appetite. Wassermann positive.	11/4/10—0.4 gm. by Lesser's method.	Painful induration. Left hospital ninth day, having but little local disturbance.	Mucous patches lost their irritability after fifteen hours. 11/7/10—Three days after injection mucous patches indistinctly seen. 11/6/10—Two days after injection secondaries fading. 11/9/10—Glands becoming smaller. After eight days secondaries all gone from body. Remains of same in palms. 11/15/10—Patient looks fine and feels well.	
21	7/10/10—Chancre of penis lasting two weeks. 8/15/10—Ulcerating secondaries in throat.	Took mercury for six weeks in pill form until teeth became sore. Took liquid medicine two to four weeks. No improvement at any time. All medicine stopped two or three weeks before admission to hospital.	Excavating ulcer of each tonsil size of a dime. Enlargement and induration of glands of neck. General glandular enlargement. Mucous patches in mouth. Erosion of vocal cord with edema and injection. Gonorrheal urethritis. Gonorrheal arthritis involving both knees. Wassermann positive.	11/4/10—0.6 gm. by Lesser's method.	Painful induration. Fairly comfortable in five days.	Infiltration of tonsils less marked after fifteen hours. Mucous patches not tender. Tonsillar and laryngeal lesions healed in six days. Glands slightly smaller after three days. 11/22/10—Wassermann positive.	
34	Extragenital infection Aug. 5, 1910. Excision of primary lesion. 10/8/10—Maculopapular eruption. Mucous patches in mouth and about anus.	Gray powder, gr. 2 t. i. d., for two weeks. Blue mass, gr. 2, every four hours for two weeks. Discontinued on account of intestinal disturbances. Nine doses of mercury given intragluteally. Slight improvement in secondaries with latter. Last dose given 11/6/10.	Maculopapular eruption scattered over body and palms; more numerous over forehead. Mucous patches about anus. Moderate injection of conjunctivæ, especially of right eye. General malaise with loss of appetite. Wassermann positive.	11/9/10—0.65 gm. by Lesser's method.	Local effect in this case more marked than in others. Swelling more extensive from beginning and more painful. Cramps in calves of legs, especially at night. These still occurred eight days after injection. Sleeplessness requiring morphin and later chloral and trional.	11/10/10—Mucous patches not sensitive. 11/11/10—Secondaries fading. 11/16/10—Seven days after injection eruption almost gone; few lesions on back and forehead. 11/18/10—Secondaries practically disappeared.	Herpes labialis on fourth day.
19	Exposed 8/20/10—Sore throat developed about one month later.	None.	11/5/10—Deep excavating ulcer of left tonsil with overhanging edges and infected base. Tonsil enlarged and indurated. Regarded as primary lesion. Submaxillary and surrounding glands enlarged. Axillaries and epitrochlears enlarged. Wassermann positive.	11/9/10—0.65 gm. by Lesser's method.	Painful induration. Discharged on seventh day, and walked with but slight limp at that time.	11/10/10—Fifteen hours after injection ulcer was not so deep or crater-like in appearance and was not painful on swallowing. Tonsil smaller. 11/21/10—Lesion entirely healed.	
24	10/3/10—Chancre which was treated locally. Macular rash appeared 11/10/10.	Two doses sodium cacodylate, hypodermatically. Oct. 22, 10.1 gr.; Oct. 22, 1910, 1 gr.; Oct. 25, 1910, 2 gr.; Oct. 25, 1910, 10.2 gr.	Two large indurated sores on penis (see photo). 11/10, macular rash over body. Wassermann positive.	11/12—0.4 gm. "606" given intravenously, according to Schreiber's method. After a portion of the fluid was injected a small amount ran beneath the skin, so a new site was chosen, with perfect result.	Very slight irritation where small amount of fluid ran under skin. This disappeared the following day. No soreness where technic was good.	Chill, nausea and vomiting two hours later. Temperature rose to 101.5° F. in six hours and had one diarrhoeic stool. Primary lesion markedly improved on second day. Healed in thirteen days. (Figs. 1 and 2.)	Six hours after injection rash much brighter and more extensive. (Herxheimer reaction?) Herpes labialis on third day.

tite, general malaise, and leukocytosis. In the case in which the drug was given intravenously there was a rather marked but very transient general reaction. There was a marked chill two hours after the injection and the temperature arose in six hours to 101.2° F. Associated with the increase in temperature there was headache, vomiting and one diarrhetic stool. When the temperature was highest this patient showed a distinct increase in the already existing rash which became more intense and more extensive, covering the whole of the trunk and the extremities (the so-called Herxheimer reaction).



Fig. 2.—Lesion in Case 6 thirteen days after injection with salvarsan ("606"). The induration is much less marked and the ulcer has entirely healed.

The most interesting result of the use of the remedy was the rapid onset of the improvement after the administration. The primary lesions began to heal within two days. The mucous patches lost their irritability in fifteen hours. The ulcerating secondaries of the tonsils manifested an improvement in the same length of time, the first changes being a decrease in the infiltration of the surrounding tissues and a subjective lessening of the stiffness which caused difficulty in swallowing.

All of the patients are still under observation and subsequent serum examinations will be made to determine the ultimate results of the treatment.

AN INTERESTING CASE OF CONFUSIONAL INSANITY

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The following case presents several features of unusual interest to the student of mental diseases. In the first place, it is a rather rare type of mental derangement, as I have found in reading the meager descriptions given in available texts; secondly, the etiologic factor is interesting as well as unusual; third, the duration of the attack, and last, the peculiar disappearance and abrupt recovery.

The patient in question, a German-American, was admitted Nov. 17, 1910. Examination showed a man of healthy appearance, though rather thin; age 38, height 5 feet, $11\frac{3}{4}$ inches, weight 160; pulse 68, regular and full; temperature 98.2 ; respirations 17; motor symptoms none; all functions fair. His

hereditary history was negative—father and mother living and in good health; no history of mental trouble in collaterals.

The patient was quiet and unobtrusive; talked freely when addressed, and frequently mentioned soldiers, woodmen and doctors; would give his correct name when asked but could not spell it. Given pencil and paper, he attempted to write, but gave up, laughing, and remarked that he could neither read nor write. He was cleanly in his habits, not violent in any way and obeyed when told to do anything. He complained of no symptoms, ate heartily and slept well. The commitment papers described him as a well-to-do business man, of fair education, married and the father of four children. He had never suffered from mental trouble, serious injury or disease, was temperate in his habits, and of mild disposition.

In October, 1909, he went with a brother to Omaha to be operated on for appendicitis, ether being the anesthetic used. The operation was successful and after a three weeks' stay in the hospital he returned to his home. From then on he showed a marked change of disposition; refused to recognize his wife and disowned their children. His mind dwelt incessantly on physicians and operations, and he talked continually about taking good care that no medical man would ever come near him. March 28 he disappeared, leaving some blood-stained clothes on a lake shore near the town. All search for him proved futile, and no trace of his whereabouts was found until Nov. 7, 1910. On that date he was picked up by the police of a distant city, identified and returned to his people. His peculiar actions caused him to be brought before the insanity board, which resulted in his being committed to the Nebraska State Hospital. On entering the hospital he was given an active purge and placed under surveillance, no special treatment being instituted.

On the fifth day he asked to see me privately and was brought to my office. A marked change was noticeable in his demeanor, and his face bore a look of interest and intelligence. His first remark was, "Doctor, I'm all right again." Explaining further, he stated that sometime after midnight he awoke and felt a queer pain in his head. Sitting up in bed he noticed that he was in some sort of a ward, and recalling the operation decided that he was still in the Omaha Hospital. When morning came he learned his mistake and immediately questioned an attendant as to his whereabouts and how he had reached such a place.

The last act he could recall was taking ether, previous to the operation thirteen months ago. He could describe the room, and repeat all conversation heard before succumbing to the anesthetic. As to going home after the operation, remaining there until March, and disappearing, he knew nothing. Apparently, no thought or act, during the entire year had left an impression on his mind, and he had lost completely thirteen months of his life. Strangely enough, there seems to be no trace whatever of how or where he passed the interval between March and November. Neither hands nor clothes showed signs of manual labor, and his inability to read or write, while mentally deranged, as demonstrated on entering, showed him incapable of intellectual employment. His means of support and actions during this period would certainly prove of unusual interest, but seem destined to remain a mystery.

The patient's wife was notified at once of his mental change and took him home on parole. A recent report from her states that he has been normal since his return, has taken up work where it was dropped in October, 1909, and is none the worse for his mental vacation.

I have been unable to find, in available literature, a description of any case closely related to the above, but presume that they occasionally come under the care of mental specialists. An interesting case was reported from Toronto, Canada, several years ago, and also one in the London *Lancet* a decade ago. These cases, I believe, were diagnosed as perverted personality, and though resembling our case in some particulars, were unlike in essentials. For want of a more specific diagnosis we have classified our case as post-operative confusional insanity.

FOREIGN MATERIAL IN THE STOMACH

REPORT OF A REMARKABLE CASE

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It is not very unusual that hysterical and insane patients swallow hard and indigestible articles, and occasionally this foreign material is found in the stomach at operation or autopsy. Buttons, coins, needles, pins, hairpins, nails, false teeth, and even knives and forks have occasionally been swallowed; and at times may give rise to serious trouble by causing perforation or occlusion of the gastro-intestinal tract. It is also quite a common practice in cases of dementia for

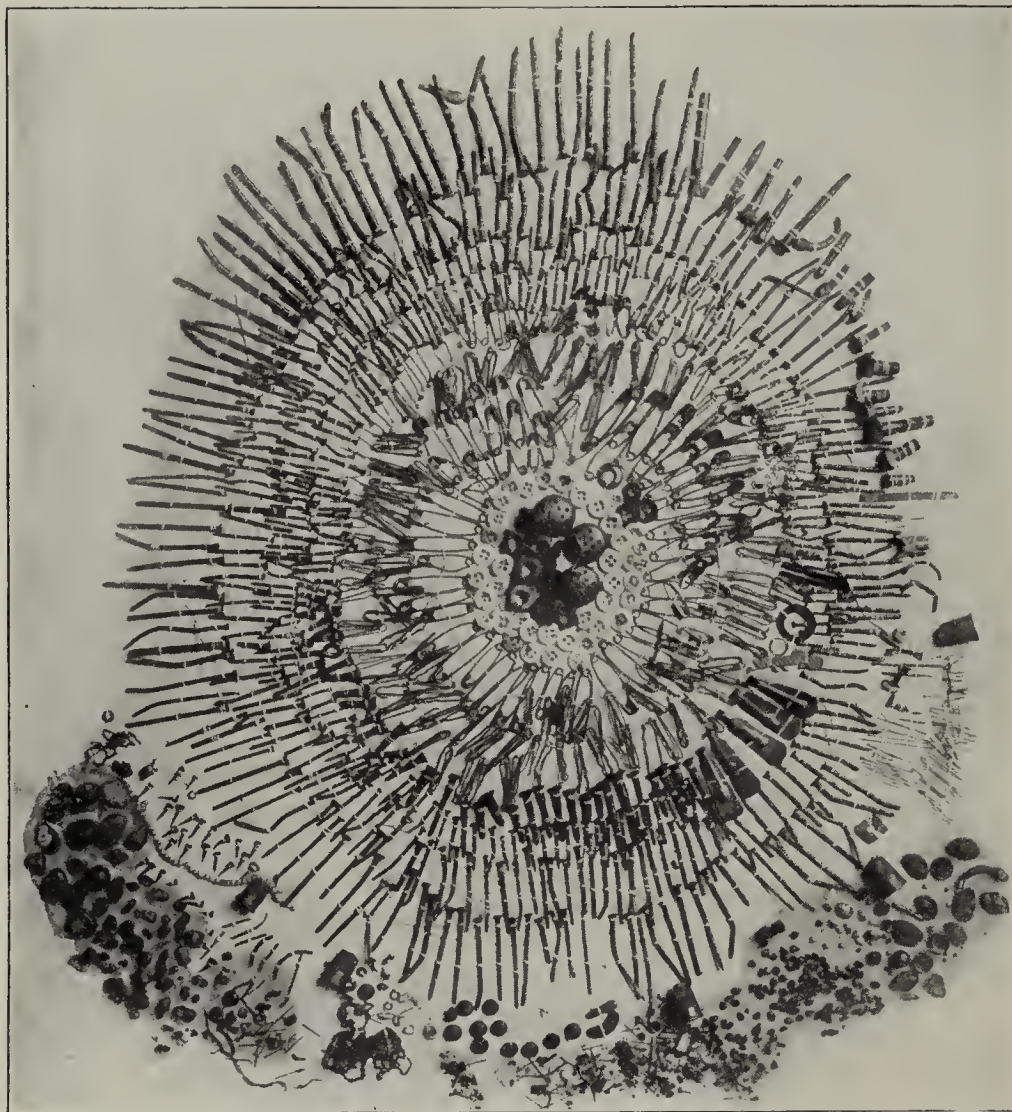
improved soon and the clinical notes made by attendants from that time until her death were always, "appetite and digestion good." She was at first often combative, and because of this tendency was frequently under restraint. During all the time of her confinement she showed a considerable degree of mental enfeeblement, losing all interest in surroundings. Most of the time she was wholly unemployed. She remained in this condition, gradually becoming quiet, less resistive and more interested in things about her, assisting on the ward by sweeping, dusting and such light duties. She was frequently seen by the attendants to pick up from the floor and lawn small articles such as nails, pins, etc., but it was not known that she was in the habit of swallowing them. Her health began to fail and her symptoms first attracted attention about Dec. 1, 1909. Examination at that time suggested kidney trouble, but analysis of the urine failed to confirm a diagnosis of interstitial nephritis, but further observation and subsequent examination did confirm the opinion that she had a nephritis. The extremities became edematous and she was much troubled

with dyspnea; still digestion and assimilation continued good, with little loss of flesh or none at all. These conditions continued up to within fourteen days of her death. She never refused food until a week before her death, and then only on two or three occasions. Digestion was apparently normal. In fact, the remarkable stomach findings at autopsy were entirely unsuspected.

Necropsy.—Death occurred Sept. 4, 1910, with autopsy twenty-four hours later. Rigor mortis was complete; the body was well nourished; edema extended to the hips. Opening of the abdomen revealed a peculiar condition of the stomach. There was a slight degree of ptosis of the upper margin; the greater curvature was elongated and rested in the left iliac fossa and presented a nodular, hardened mass which was soon found to be due to a collection of foreign bodies to be described later. The stomach wall was adherent to the muscles of the iliac fossa. Around the stomach and the anterior abdominal wall over a considerable area, forming a sling supporting it and adherent to it so intimately as to be separated with some difficulty, was the greater omentum. Many points of nails, needles and other sharp objects had penetrated the stomach walls, but leakage into the peritoneal cavity was prevented by the thickened and adherent omentum. Throughout this area of adhesion were found numerous small abscesses, resulting from the many perforations, but all were firmly walled in and the general peritoneum well protected from infection.

The stomach measured in transverse diameter 1 cm., in length 33 cm. The greatest diameter was from the cardiac orifice to the lower portion of the sacculated fundus along the greater curvature. This portion extended to beneath the crest of the ileum and was fixed immovably to the anterior abdominal wall. The mass of foreign material lay in this sacculated portion, leaving only a narrow channel along the lesser curvature for the passage of food. Evidently the stomach took little part in the process of digestion, the food being conveyed directly to the pylorus, and very slightly intermingled with the foreign contents.

The stomach wall at the fundus was 14 to 16 mm. in thickness, the subserous layer being 5 to 6 mm. or about one-third of the wall's thickness. A section removed from the thicker portion for microscopic examination showed a marked atrophy of the mucous membrane. The mucous gland tubules presented frequent cystic enlargements, probably from occlusion of orifice. Over numerous small areas there was almost complete erosion of the epithelium, with subjacent round-cell infiltration, indicating the formation of ulcers. Much fibrous tissue could be seen external to and infiltrating between the fibers of the muscularis mucosa. The muscular coat was about



A human hardware store—a collection of foreign bodies found at necropsy in the stomach of insane patient.

patients to pick up and swallow pieces of lint, string or hair, or even to swallow their own hair after biting or pulling it off. Bell of Montreal reported a case in which the hair-ball removed from the stomach formed a complete cast of the stomach and duodenum. We report this case because of the large number and variety of articles present and their great combined weight, with resulting distention and displacement of the stomach. The patient was an inmate of State Hospital No. 2 on the service of Dr. A. H. Vandivert. Both of us were present and conducted the necropsy.

History.—Sallie R., a mulatto, aged 33, was admitted July 24, 1903, with acute mania which terminated in dementia, following the use of cocaine and morphin. At the time of admission, she was somewhat emaciated, indifferent to appearance, eating and sleeping well. Her physical condition

normal except that the layers were more than usually well defined by interposed bands of connective tissue. The greatest change was noted in the subserous coat. Here was a thick layer of a dense, fibrous structure, extending over the greater part of the fundus, representing Nature's effort to assist in supporting the great weight imposed on the stomach walls and to protect the peritoneum from injury.

In a few instances there was complete destruction of the mucous membrane over a well-defined surface, apparently from pressure by one of the large foreign bodies, probably for a long period of time. Here the base of the ulcer was formed by dense scar tissues.

The mucous membrane of the esophagus was greatly eroded and numerous ulcers were found, with extensive round-cell infiltration. The muscular layers were hypertrophied and sharply defined.

Foreign Bodies.—The weight of the stomach contents removed at autopsy, after repeated washings to remove all food material, was 2.268 gm. One needle was found in the esophagus and one in the lower border of the left lung. Below is a classified list of the articles removed, as shown in the illustration:

NAILS

20-penny	5	
16-penny	21	
10-penny	24	
8-penny	80	
5-penny	113	
3-penny	210	
Total	453	453

SCREWS

2 1/2 in.	4	
1 1/2 in.	11	
1 1/4 in.	5	
1 in.	9	
3/4 in.	6	
1/2 in.	7	
Total	42	42

BOLTS

3/8 x 1 in.	3	
3/8 x 1 3/4 in.	1	
5/16 x 2 1/2 in.	1	
1/4 x 2 in.	1	
5/16 x 1 in.	3	
Total	9	9

MISCELLANEOUS

Teaspoon handles	5	
Nail-file, 3 1/2 in.	1	
Pieces of steel, 2 3/4 in.	3	
Thimbles	5	
Salt-shaker tops	3	
Taps for 3/8 in. bolts	10	
Buttons	63	
Safety-pins	105	
Hairpins	115	
Carpet-tacks	52	
Common pins	136	
Large white-headed pins, 2 1/3-1 1/2	16	
Needles	37	
Broken coat-rack hooks, 2 x 1/4 in.	7	
String beads, small, 4 ft. long	1	
Larger beads, loose	70	
Small stones and pieces of glass	85	
Prune seeds	7	
Pieces of metal, combined weight 3 oz.	54	
Hooks and eyes	19	
Grape and other small seeds	148	
Total	942	942
Making a combined total of		1,446

This case is remarkable for the number and weight of the articles removed as well as for the size and peculiar forms of some of them, especially so when considered in connection with the fact that there had never been any symptoms suggesting trouble with the stomach.

Jaundice not Pathognomonic in Cholelithiasis.—The impression is prevalent that jaundice is pathognomonic of gall-stone. This is not so and much valuable time is lost in waiting for its appearance in patients suffering from cholelithiasis; 80 per cent. do not have it.—A. L. Wright, in *Iowa Medical Journal*.

THE DIAGNOSTIC VALUE OF LOCAL TUBERCULIN REACTIONS *

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Three years ago, on May 15, 1907, von Pirquet announced, at a meeting of the Berlin Medical Society, his discovery of the cutaneous tuberculin test, which consists of a superficial scarification of the skin through a drop of the old tuberculin and the subsequent appearance (in those afflicted with tuberculosis) of a characteristic papule at the point of the inoculation.

The demonstration of this new diagnostic procedure was made possible by the researches of von Pirquet (and B. Schick) into the general law of "allergy" or the altered reaction of the organism toward infective agents on their reintroduction.

The "early vaccinal papule" appearing on revaccination, as well as the cutaneous papular reaction, following the application of tuberculin to the skin of tuberculous individuals, were both ascribed by von Pirquet to the contact of the infectious agent with "antibodies" lodged in the integument as the result of previous infection. The "hypersensibility" of the infected organism, displayed on reinfection, was shown to be a factor in the production of the reaction, the mechanism of which is supposed to consist of the digestion of the introduced virus by the antibodies and the liberation of a toxic substance, with its inflammatory effect on the skin at the point of inoculation. While this and Wolff-Eisner's explanation of the local reaction (substituting "bacteriolysins" for "antibodies") are at present quoted by various writers, the entire question, in its theoretical and practical aspect, is still a subject of extensive investigation.

Contemporaneous with the announcement by von Pirquet of the cutaneous tuberculin reaction, came the demonstration by Wolff-Eisner and Calmette of a similar phenomenon in the conjunctivæ of tuberculous individuals, and this was soon followed by various modifications of the original von Pirquet test by a number of investigators, as Moro (percutaneous test with salve containing 50 per cent. tuberculin), Lignières (rubbing 5 to 6 drops of undiluted tuberculin into the skin), etc., all these tests being based on the now accepted idea of the wide distribution of specific antibodies in the organism of the infected individual.

The specific character of these local reactions found considerable substantiation: (1) in the post-mortem statistics of von Pirquet (demonstrating tuberculous lesions in 123 out of 124 children reacting to the cutaneous tuberculin test, and 161 negative post-mortem findings in 190 children with negative reactions) and in the post-mortem statistics of Wolff-Eisner, Calmette and others; (2) in the almost constant occurrence of these reactions in clinically tuberculous individuals, barring a large number of very advanced cases, miliary tuberculosis, complications by other diseases (as measles) and a few other conditions still unexplained.

The percentage of the positive conjunctival reactions in the clinically tuberculous is given as 92 by Calmette (2,894 cases), 90 per cent. by Wolff-Eisner (435 cases) and 80 to 95 per cent. by numerous other observers; the percentage of the positive cutaneous reactions in tuberculous adults is given by von Pirquet as 90.

* Read at the Sixth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, Washington, D. C., May 2-3, 1910.

Considerable difference between the occurrence of the conjunctival and cutaneous reactions was observed in the "apparently healthy" class, the cutaneous reaction being positive in 70 per cent., even at the age of 10 (von Pirquet), while of the apparently healthy adults only 15 per cent. respond to the conjunctival test (Wolff-Eisner).

This observation led to Wolff-Eisner's and Calmette's interpretation of the positive conjunctival reaction as occurring only in active cases of tuberculosis, the comparative infrequency of the positive conjunctival reaction in the "apparently healthy" class being used by Wolff-Eisner as one of the chief arguments in favor of this contention.

The relation between the positive conjunctival reaction and the activity of the tuberculous process has not been, however, so far established (neither has it been absolutely disproved) and the most that can be said, in the light of the present experience, is that a positive local tuberculin reaction, conjunctival or cutaneous, signifies probably in all cases a preexistent tuberculous infection, without furnishing any conclusive information as to the active or latent character of the process.

The cutaneous test is recommended by von Pirquet for diagnosis of tuberculosis in children under 2 years of age, a positive reaction signifying an active tuberculous process, latent tuberculous lesions being rare in this period of life. The test, in his opinion, is not appropriate for adults, in whom positive reactions occur in a large percentage of cases, corresponding to the increasing frequency of latent tuberculous lesions, from childhood up to maturity and old age.

The percutaneous (Moro's) test has no material advantage over the v. Pirquet procedure (as stated by Bandelier and Roepke and others), and is less reliable because of such drawbacks as (1) the variable power of absorption of the skin of different individuals, and (2) a number of conditions varying with each operator (force used in application, etc.). The last objection is equally applicable to the cutaneous test; the manner of its application in all its details must be agreed on, the scarification never to exceed the mere removal of the superficial layer and all unnecessary injury to the skin to be avoided.

The conjunctival test, because of the possibility of its harmful effect in a certain percentage of cases, is not employed at present as extensively as before. With certain precautions, the occurrence of untoward developments may be reduced, however, to a minimum or possibly excluded altogether. In 6,303 conjunctival tests, as reported by Calmette at the International Tuberculosis Congress in Washington in 1908, he encountered three cases of phlyctenular keratitis, twenty of conjunctivitis and seventy-two prolonged reactions. Wolff-Eisner observed very few harmful effects with the use of a 1 per cent. solution of the old tuberculin in a large number of cases. Similarly, with the use of a 1 per cent. solution of old tuberculin in 500 cases (187 positive reactions; physiologic salt solution employed as diluent; cases of ocular disease and conjunctivitis, chronic or acute, excluded) I have seen only two instances of prolonged violent reactions, and these without any permanent injury to the eye. Further research as to the utility of the conjunctival test may, however, be well carried on in the future, particularly by animal experimentation, until all conditions determining the conjunctival reaction are more or less fully established and a harmless method of its application is evolved.

The local tuberculin reaction is but a link in a chain of evidence pointing to the tuberculous character of a suspected lesion and the value of its occurrence can be adjudged only by a comprehensive study of the entire evidence in each individual case; the clinical history, physical signs, etc.

Considerable clinical study and further extensive autopsy experience is still needed in order to establish the relation of the local reaction to the active and latent tuberculous processes and the various types of tuberculous disease. The conditions determining the reaction itself as well as the rapidity and degree of its development in various types of cases are still a fruitful field for research, if the local reaction is to gain the position of a practical diagnostic procedure.

During the last two years I have employed (at the Edward Sanatorium, at Naperville, Ill., and in my dispensary and private practice) the local and subcutaneous tuberculin reactions in a variety of tuberculosis cases. For the conjunctival test a drop of a solution of Koch's old tuberculin in an 0.8 per cent. sterile physiologic salt solution was used; for the cutaneous test, undiluted old tuberculin; dilutions of old tuberculin of various strengths (in 0.5 phenol solution) were employed cutaneously for differential study of results with various dilutions in the same individual. For the percutaneous test (Moro) an ointment consisting of equal quantities of Koch's old tuberculin and hydrated wool fat was employed.

In applying the conjunctival test the technic, as recommended by Wolff-Eisner, was closely followed; for the cutaneous reaction the superficial layer of the skin of the forearm (anterior surface) was gently scarified, by turning the von Pirquet inoculation needle through a drop of the old tuberculin; in applying the percutaneous (Moro) test a piece of the ointment the size of a pea was rubbed into the anterior surface of the forearm. The results were generally observed at the end of twelve and twenty-four hours and, after that daily for several days.

The conjunctival reactions were classified in their degree according to the scheme of Citron.¹ Similar classifications are offered by Comby, Edward R. Baldwin, and others. In this scheme $+$ = means reddening of the caruncle and palpebral conjunctiva; $++$ = means intenser reddening with involvement of the ocular conjunctiva and increased secretion; $+++$ = means intense reddening of the whole conjunctiva with chemosis, much fibrinous and purulent secretion, small ecchymoses, etc.

For the results of the percutaneous test, Moro's classification was used.² It is as follows: Slight reaction: single, isolated, more or less distinct, reddened spots, visible twenty-four to forty-eight hours after the inoculation and only on careful inspection, disappearing in a few days; well-marked reaction: papules indistinguishable in degree of hyperemia and exudation from those of the cutaneous inoculation, or coalescing red nodules on inflamed base; intermediate: thirty to fifty or more discrete, miliary nodules with reddened areola. The size of the papule, the degree of redness and elevation were recorded in describing the cutaneous reactions.

This paper deals with some of the features of the local tuberculin reactions, as influenced by the site of

1. Bandelier and Roepke: *Tuberculosis in Diagnosis and Treatment*, p. 24.

2. Bandelier and Roepke: *Tuberculosis in Diagnosis and Treatment*, p. 17.

the inoculation, the degree of the tuberculin dilution, the stage of the disease and the state of resistance; in a group of cases the local tuberculin reactions are compared with the results of the subsequent subcutaneous injections of tuberculin.

THE SITE OF THE LOCAL TUBERCULIN INOCULATION AS A
FACTOR DETERMINING THE DEGREE OF
THE REACTION

In applying the von Pirquet test to the skin, the degree of the reaction varies frequently, according to the site selected, in its extent, injection, elevation and rapidity of development. Exceptions, however, occur to the observations stated below, the reaction at times being more marked in locations where the reverse is usually the rule.

In all, 140 applications of tuberculin were made in fifty-five cases of pulmonary tuberculosis (mostly in the first stage of the disease). In ten cases tuberculin was applied simultaneously to the anterior surface of the arm and the interscapular space, the dilutions of 10 and 25 per cent. and undiluted tuberculin (2 inches apart) being used in a straight line in both locations. In five of these cases the reactions were slightly more pronounced in size in the interscapular space; in three there was practically no difference; in two the reactions were slightly more marked on the arm.

In twelve cases undiluted tuberculin was applied to the anterior surface of the forearm and the interscapular region on the same side. Invariably the reaction in the interscapular region was more extensive, generally redder and in two cases more elevated (the average diameter of the interscapular reaction 16.5 mm., forearm 10 mm.).

In twelve cases undiluted tuberculin was applied to the posterior surface of the left leg and anterior surface of the left forearm, with a resulting more marked reaction in the first-named location in nine cases (average diameter 12.5 mm., forearm 9.5 mm.). Slightly more marked reaction was observed on the left forearm in four cases, in which undiluted tuberculin was simultaneously applied to the anterior surfaces of left and right forearm.

In twelve cases, a 25 per cent. dilution of tuberculin was simultaneously used on the anterior surfaces of the thigh and arm, with a resulting more marked reaction on the thigh in nine cases (average diameter 12.5 mm., arm 9.5 mm.). More marked reactions were also observed below the mammary gland than on the anterior surface of the forearm.

It is evident from observations made by numerous investigators that the anatomic conditions of the skin and mucous membrane in various locations of the body (the histologic structure, circulation, lymphatic system, nerve-supply, etc.), as well as greater cutaneous sensitiveness displayed by some individuals to the slightest mechanical or chemical irritation, have their influence in determining the degree of the reaction; they are factors of importance and an accurate interpretation of the local reactions is impossible without giving due consideration to these varying conditions.

THE STRENGTH OF THE TUBERCULIN SOLUTION AS A FAC-
TOR DETERMINING THE DEGREE OF THE
CUTANEOUS REACTION

One hundred and four cutaneous applications of tuberculin, of various dilutions, were made, according to von Pirquet's directions, in forty-six cases of pulmonary

tuberculosis (twenty in the incipient stage, twenty-six moderately advanced). In thirty-four of these cases, a 25 per cent. solution and one of undiluted tuberculin were simultaneously applied to the anterior surface of the left forearm, 2 inches apart, the scarification being made with a separate instrument through a drop of each dilution. The resulting reactions were as follows: (1) size of the papule with undiluted tuberculin decidedly larger in fourteen cases (with undiluted tuberculin the diameter was 12.5 mm.; with 25 per cent. it was 7.5 mm.); smaller in twelve (with 25 per cent. 13.5 mm., with undiluted 9.5 mm.); same size with both dilutions in eight cases; (2) elevation of the papule, with undiluted tuberculin, greater in ten cases, smaller in six, same in eighteen; (3) redness, with undiluted tuberculin, more pronounced in four cases, same in thirty.

In twelve cases, a 10 per cent. dilution, a 25 per cent. and undiluted tuberculin were simultaneously applied to the anterior surface of the left forearm. The resulting papule was larger in size, with undiluted tuberculin, in six cases; larger, with 10 per cent. in four; the same with all dilutions in two. The elevation was more marked with undiluted tuberculin in six, with 10 per cent. in two, the same in four. Redness was more pronounced with undiluted tuberculin in eight, with 10 per cent. in two, the same in two.

The manner of the application and the actual amount of tuberculin absorbed are seemingly important factors in determining the degree of the reaction.

In all our cases, an attempt was made to make the scarification superficial and uniform, with all dilutions. The drop was left undisturbed for five minutes after the inoculation, the excess of tuberculin around the point of inoculation being removed at the end of that time.

A more reliable interpretation of the cutaneous reaction may be possible with an improved technic, in which a small, measured quantity of tuberculin should be used for cutaneous inoculation, under conditions facilitating its complete absorption.

THE ANATOMIC EXTENT OF THE DISEASE AND THE STATE
OF RESISTANCE OF THE INDIVIDUAL AS FACTORS
DETERMINING THE DEGREE OF THE LOCAL
TUBERCULIN REACTION

From the experience of numerous observers we know that, as a general rule, reactions on application of tuberculin grow less pronounced and occur less frequently with the anatomic progress of the disease from the incipient to the far-advanced stage. The "antibody" theory of tuberculin reactions explains this by the gradual failure of the organism to respond to tuberculin stimulation. The anatomic extent of the disease is, however, not always indicative of the coexistent state of resistance of the individual. In numerous cases, with most extensive signs, particularly in those in which the process is very chronic and the general condition is favorable, the local tuberculin reaction is frequently very pronounced, while the reaction fails or is very slight in a certain percentage of anatonically incipient cases.

In statistics covering thousands of cases, the classification "first," "second," "third" stage is synonymous of course with the gradual impairment of resistance and decline of response to tuberculin, from stage to stage (as various factors counterbalance each other in large groups of cases). In observation of individual cases, however, this power or failure of response to local tuber-

culin application is frequently at variance with the stage of the disease.

I append here, as an example, an experience with a group of cases classified according to stage³ and observed for periods of one to two years subsequent to tuberculin application. This group included a number of advanced cases characterized by chronicity of process and favorable general condition.

In 165 cases of pulmonary tuberculosis (ninety-nine incipient, thirty-six moderately advanced, thirty far advanced), the conjunctival reaction was positive (traces of reaction included) in 67 per cent. of the incipient, in 33 per cent. of the moderately advanced and 67 per cent. of the far advanced; the cutaneous reaction was positive (diameter above 5 mm.) in 69 per cent. of the incipient, 41 per cent. of the moderately advanced and 67 per cent. of the far advanced.

The average diameter of the inoculation papule in the first stage cases was 12 mm.; second, 13 mm.; third, 11.5 mm.; the comparison showing very little variation for the three stages of the disease.

With the conjunctival test, more pronounced reactions were obtained in the second stage (48.5 per cent. of the positive cases more than +) than in the first (28 per cent. more than +). Very slight difference in the degree of the percutaneous reaction was observed in forty first stage cases and twenty-nine second. These figures have reference of course only to a limited number of cases divided according to stage; their analysis suggests, however, that the mere anatomic extent of the disease does not give a definite idea of the resistance of the patient and sensibility that may be displayed on application of tuberculin.

Dividing these 165 cases into three groups, regardless of the anatomic extent of the disease—(1) progressive cases, good general condition, (2) stationary, good general condition, (3) far advanced, hopeless—the percentage of the positive reactions is readjusted in the following way: first class, conjunctival, positive in 75 per cent., cutaneous in 70 per cent.; second class, conjunctival, positive in 35 per cent., cutaneous in 82 per cent.; third, conjunctival, trace in 10 per cent., cutaneous, positive in 33 per cent.

Observations on various groups of cases lend support to the general idea that the tuberculin reaction fails with the gradual exhaustion of the defensive elements of the organism, and the anatomic extent of the disease is important only in the measure in which it is operative in producing this condition. This is offered as an observation, familiar to many, without any attempt at evolving a general diagnostic or prognostic scheme based on the degree of the local tuberculin reaction. Experience, however, tends to substantiate in a large number of cases the dictum of Wolff-Eisner, that a negative local tuberculin reaction, in the presence of decided physical signs, is of unfavorable augury, pointing as it does to the inability of the organism to counteract the toxins of the tubercle bacilli; while a positive reaction means simply that the defensive elements still exist, the battle is still being fought, but the result cannot be predicted.

REPETITION OF THE LOCAL TUBERCULIN TEST DURING THE COURSE OF THE DISEASE: INTERPRETATION OF THE RESULTING REACTION

It is evident from the consideration of the conditions determining the occurrence and the degree of the local

reaction, that various factors influence the result of the repeated local tuberculin test. Of these the following may be considered:

1. The hypersensibility occasioned by a previous inoculation of tuberculin into the skin or conjunctiva is a factor of considerable importance. Fritz Levy⁴ was the first in Germany to call attention to the fact that, on the second application of the conjunctival test, hypersensibility is manifested in 70 per cent. of cases, the condition becoming operative three days after the first instillation; this phenomenon was observed also on repetition of the cutaneous reaction. The exact duration of this hypersensibility is still undetermined. Experience shows that in a large percentage of cases the conjunctival test repeated in the other eye is positive, while the first reaction was negative, and the same is true of the cutaneous test. To what extent and in what manner the first introduction of tuberculin influences the result of the second application at another site, is still a question open to further investigation. We know, however, that the local changes produced by the first application of tuberculin are operative for a considerable period of time, as manifested by the reinflammation of the local tuberculin reactions on subcutaneous injection of tuberculin, months after the local test was performed. In 90 subcutaneous injections of tuberculin in a corresponding number of incipient closed cases of pulmonary tuberculosis, with the resulting characteristic constitutional reaction in 80 cases (doses O.T. from .0002 c.c. to .005 c.c.), reinflammation of the conjunctival reaction occurred in 54 cases, cutaneous in 74. The reinfamed conjunctival reaction was more pronounced than the original in 46 cases, same in 6, slighter in 20; cutaneous, more pronounced in 46, same in 8, slighter in 20. The size of the reinfamed cutaneous spot in many cases was two to five times larger than the original, and this with the injection done two to four months after the application of the local test. Approximately the same experience was obtained with the percutaneous (Moro) test. The reinflammation of the reaction spots may be due to the presence of a larger number of antibodies or bacteriolysins near the cutaneous or conjunctival focus of deposited tuberculin. In what measure or manner this focus of deposited tuberculin influences the result of subsequent tuberculin inoculation at another cutaneous or conjunctival site is still a matter of speculation.

2. The interval between the first and second applications of tuberculin. Improvement in the general condition of the patient as a factor influencing the degree of the repeated reaction. With the progress of a large proportion of tuberculosis cases under sanatorium or home care toward improvement, it is interesting to note the difference between the results of the first and the following local tuberculin tests as applied at various intervals. In 52 cases of pulmonary tuberculosis (34 incipient, 10 moderately advanced and 8 far advanced) the conjunctival test was repeated in the other eye at intervals not exceeding one month from the date of the first application, with the resulting increase in the degree of the reaction over the first test in 30 cases out of 52 (this includes also cases found negative on the first application and positive on the second); of 26 cases, in which the second instillation was performed from one to six months later, an increase in the degree of the reaction was noted in 8, suggesting the explanation that the larger number of more pronounced second reactions in the first month following the first application is dependent on the hypersensibility resulting from the first instillation, a hypersensibility, the duration of which is yet undefined.

Approximately the same result was obtained with the cutaneous test: increase in the degree of the reaction in 22 cases out of 38, with repetition of the test during the first month; and in 18 cases among 42, with the second test applied from one to five months later.

In analyzing the effect of the improvement of the general condition of the patient on the result of the repeated

3. Provisional Scheme of the National Association for the Study and Prevention of Tuberculosis.

4. Wolff-Eisner, Alfred: The Ophthalmic and Cutaneous Diagnosis of Tuberculosis. Chapter on the Repetition of the Reaction.

local tuberculin test, the proximity of the dates of both tests shows itself again to be a factor of great importance. With a gain of less than 10 pounds in weight, subsequent to the first tuberculin application, the second conjunctival reaction was more pronounced in twenty cases out of thirty-two; with a gain of 10 to 30 pounds, in fourteen out of thirty-eight; an increase in the degree of the cutaneous reaction occurred in the first class of cases in eighteen out of thirty-six, in the second class in twelve out of twenty-six, the smaller increases in weight occurring in the first few weeks subsequent to the first tuberculin application, the greater increases in the following four to five months.

A proportionately larger number of more pronounced second reactions was observed in incipient cases; the least deviation in the far advanced, regardless of gain in weight.

It may be expected that the improvement in the general condition of the patient, presumably productive (always?) of an increase in the defensive elements of the organism, would show itself in a more vigorous reaction on the introduction of tuberculin, and this is probably the case; in many instances, however, a mere increase in weight may not be coincident with a greater production of defensive antibodies, as shown by the progressive course of a large percentage of tuberculosis cases regardless of enormous increases in weight.

The relative influence of (1) the state of hypersensitivity resulting from the first tuberculin application, and (2) of the increased resistance (as suggested by improved nutrition, recession of the physical signs, etc.), on the result of the repeated local tuberculin test, is still a matter in need of further investigation.

In studying the results of the local tuberculin tests, when applied (1) to various groups of tuberculosis cases (differing in extent and activity of the process, state of resistance, previous use of tuberculin, etc.) as well as (2) at the various stages of improvement or further progress of individual cases, it becomes evident that numerous conditions operate in determining the occurrence and the degree of the resulting reaction. If the present theory of the local tuberculin reaction (based on the assumption of the wide distribution of specific antibodies or bacteriolysins in the infected organism) is correct, all the above-mentioned conditions are factors to the extent to which they stimulate the production of these specific substances and influence the sensibility of the organism to the infectious agent and its toxins.

THE DIAGNOSTIC SIGNIFICANCE OF THE LOCAL TUBERCULIN REACTION AS CONTROLLED BY A SUBSEQUENT SUBCUTANEOUS INJECTION OF TUBERCULIN

1. In 30 incipient pulmonary closed cases in which the conjunctival reaction was positive (21+, 9++), and the cutaneous at the end of forty-eight hours fully developed and strong (average diameter 13.5 mm., pronounced redness and distinct elevation in 60 per cent.), the percutaneous positive in 14 out of 18 (4 slight, 4 intermediate and 6 marked), the subcutaneous test was positive in all: six responding to 0.2 mg. O.T., eighteen to 1 mg., six to 3 mg.; average rise of temperature, 0.9 F.; symptoms in 24; focal reaction in 4; average dose of O.T., 1.2 mg.; marked reinflammation of the conjunctival and cutaneous reaction in 30 (18++, 12+; average diameter of the reinfamed cutaneous spot, 27.5 mm.).

2. In 12 cases of the same class, with the conjunctival = trace in 12, the cutaneous rapid and marked in all (average diameter 13.5 mm.), the percutaneous positive in 9 (3 slight, 4 intermediate, 2 marked), the subcutaneous test was positive

in ten: 9 cases responding to 1 mg. and 1 to 3 mg.; focal reaction in 1; symptoms in 8; average rise of temperature after the injection, 1.5 F.; average dose of tuberculin used, 1.4 mg., still showing that regardless of the doubtful conjunctival reaction in these cases, the subcutaneous test was positive with approximately the same dose of tuberculin as in the first group of cases; reinflammation of 6 conjunctival reactions (6+) and 9 cutaneous (average diameter 42 mm.).

3. In 24 cases of the same class, with the conjunctival trace in 24, the cutaneous slight (average diameter 7.5 mm.), the percutaneous positive in 2 out of 7 (one trace, one slight), the subcutaneous test was positive in 21 cases (6 responding to 1 mg., 6 to 3 mg., 6 to 5 mg. and 3 to 10 mg.); average dose of tuberculin, 4 mg.; average rise of temperature after the injection, 0.6 F.; focal reaction in one, symptoms in 15; reinflammation of 8 conjunctival reactions (3 traces, 5+) and 13 cutaneous (average diameter, 12.5 mm.).

4. In 12 cases of the same class, with the conjunctival positive in all (7+ and 5++), the cutaneous positive in 6 (average diameter 6.3 mm.) and negative in 6 (positive on repetition; average diameter 9.5 mm.), the percutaneous applied to 3 (3 traces), the subcutaneous test was positive in 9 cases (one responding to 0.1 mg., 2 to 0.5 mg., 2 to 3 mg. and 4 cases to 5 mg.); average rise of temperature after the injection, 1.5; average dose of tuberculin used, 3 mg.; no focal reactions observed; symptoms in 7; reinflammation of 6 conjunctival (3+, 3++) and 4 cutaneous (average diameter, 25.4 mm.).

5. In 9 cases of the same class, with the conjunctival test negative (6+ on repetition in the other eye), the cutaneous rapid and marked (average diameter 16.9 mm.), the percutaneous applied to 3 (3 slight), the subcutaneous was positive in 9 (3 cases to 1 mg. and 6 to 3 mg.); focal reaction in 2; symptoms in 9; average rise of temperature after the injection, 0.9 F.; average dose of tuberculin, 2.3 mg.; reinflammation of 4 conjunctival reactions (3+, 1++) and 6 cutaneous (average diameter, 25.4 mm.).

6. In 12 cases, with the conjunctival negative in 9, trace in 3 (6 of the negative+ on repetition); the cutaneous negative in 9, trace in 3 (5 of the negative became positive on repetition, with 9.5 mm. as the average diameter); the percutaneous positive in one out of 4, the subcutaneous test was negative in 6 (to 5 mg.) and positive in 6 (one to 1/5 mg. and 5 to 5 mg.). The average rise of temperature after the injection was 1.6 F.; average dose of tuberculin, 4.7 mg.; symptoms in 4; focal reaction in one (with 1/5 mg.); reinflammation of 5 conjunctival (2 trace, 3+) and 4 cutaneous (average diameter, 9.5 mm.).

An analysis of these cases points to the high probability of positive subcutaneous reaction with correspondingly smaller doses of tuberculin in a large number of cases reacting promptly and distinctly to the cutaneous test; hence the relative value of the marked cutaneous reaction as a positive test in cases in which the subcutaneous test cannot be applied for various reasons.

The focal reaction occurred in only 10 per cent. of cases tested subcutaneously; adding to this number an experience with thirty more positive hypodermic tests in incipient pulmonary cases, we get in all 12 per cent. of focal reactions under the average conditions of observation.

In the light of the autopsy experience of von Pirquet, Wolff-Eisner, Calmette and others, the cutaneous tuberculin reaction in adults discloses tuberculosis only in the anatomic sense; the test, with its present method of application, sheds little or no light on the active or latent character of the tuberculous lesion.

Where a focal reaction is desired (and that can be obtained in only a certain percentage of cases) the cutaneous test cannot supplant the hypodermic. It can be used, however, as a preliminary diagnostic measure, being absolutely harmless, compared with the conjunc-

tival test, and more reliable than the percutaneous reaction, which fails in a large number of cases.

CONCLUSIONS

1. A vast amount of clinical experience, gathered by numerous observers and substantiated in a proportion of cases by post-mortem findings, points to specificity of the local tuberculin reactions.

2. The verdict of to-day is that a positive reaction, following the local application of tuberculin (conjunctival or cutaneous) signifies the existence of a tuberculous focus somewhere in the organism, without giving a definite idea of the active or latent character of the process.

3. Reactions occurring on application of tuberculin differ in their degree according to various sites of the body selected as points of inoculation; a comparative study of the results obtained by numerous observers is possible only with a clear description in each individual case of the site practiced on.

4. The results of cutaneous tests performed with various dilutions of tuberculin contribute to the belief that the actual amount of absorbed tuberculin is a factor of importance in determining the degree of the reaction.

Sufficient evidence has not been produced so far to substantiate the claim that a positive conjunctival reaction signifies active tuberculous disease. The possibility, however, exists, that activity of a tuberculous process may be a factor in causing a positive local reaction with a minimal dose of tuberculin, under certain conditions of the power of response. Hence the failure of the conjunctival test in the clinically healthy and its uniform occurrence in the clinically tuberculous (barring the very advanced cases, etc.).

If this contention has any foundation, a positive cutaneous reaction ought to be possible in active cases of tuberculosis, with minimal doses of tuberculin (greater dilutions).

Further experience with the cutaneous test, with various dilutions of tuberculin, applied to various groups of cases, with a perfected technic, assuring thorough absorption of a definite quantity, may possibly lead to some method of differentiation of active and latent cases.

5. Cases of suspected tuberculosis, in which the cutaneous reaction is rapid in development and marked in degree, generally respond readily to the subcutaneous injections of minimal doses of tuberculin; hence the relative value of the cutaneous tuberculin test in cases in which the employment of the subcutaneous test is for some reason contraindicated.

6. The subcutaneous test remains the decisive diagnostic procedure in doubtful cases of tuberculosis, particularly if a focal reaction is desired. The possible unfavorable effects of this test in some cases may be avoided by the use of small doses of tuberculin (initial 1/5 or even 1/10 mg.), according to the age and condition of the patient.

7. The work of von Pirquet, Wolff-Eisner and Calmette opened a new field for further clinical and laboratory research, out of which may be evolved a safe, reliable method of diagnosis of the obscure and the very incipient cases of tuberculosis.

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Chancre.—The syphilitic chancre should never be cauterized. The destruction is often extensive and the result frequently undesirable.—A. G. Nadler, in *Yale Medical Journal*.

THE MODERN TREATMENT OF SYPHILIS, WITH REFERENCE TO THE RECENT SYNTHETIC PREPARATIONS*

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The enormous number of cases of late syphilis and parasyphilis prove that the classical treatment of lues by the old remedies, as usually employed, is inadequate. This cannot altogether be attributed to a lack of potency on the part of the drugs, but rather to a combination of factors referable to the physician or the patient, or both. It is not my desire to discuss the shortcomings of my colleagues, but rather to call attention to some of the causes which contribute to the failure to control this disease. Of these, there are two which should be especially emphasized, namely, the tendency to regard syphilis as a mild infection with laxity in carrying out its treatment, and secondly, the lack of familiarity with the possibilities of the specific drugs.

For years it was taught in one of our large institutions that the malady is an insignificant one. The dissemination of such teaching among hundreds of students certainly was not in the interest of luetic patients. Views on the benign nature of syphilis are often promulgated by men who are familiar with only one side of the affection. They encounter, for example, chronic ulcerative processes of the skin in patients otherwise in good health and parents of healthy children, and entirely forget that there is a more serious side. An observation of a large number of cases in private and hospital practice from various parts of the country has impressed me with the want of familiarity of the general practitioner with the manifestations of the disease. This is emphasized by the surgical operations frequently performed for luetic affections of the joints, tongue, larynx, testicle, etc., under the mistaken diagnosis of tuberculosis, malignant disease or some other infection. Again, ulcerating and destructive lesions are permitted to proceed to extensive deformity or loss of function before the nature of the trouble is even suspected. This is perhaps due to the fact that we do not give students in our medical schools a comprehensive knowledge of syphilis. Its teaching is scattered through so many departments that when the graduate leaves his school he is possessed, it is true, of a fragmentary knowledge of the cutaneous, nervous, surgical and visceral manifestations he has been taught by the respective chairs, but he has altogether failed to appreciate its significance or to obtain a grasp of the subject. It would seem that the establishment of a chair in syphilology, which would enable one to teach in a comprehensive manner what the infection may do, would be a decided advance in our pedagogic methods.

In seeking to account for the vast amount of uncured syphilis, we must remember, too, that the patient often is culpable in his lack of cooperation. He either fails to carry out properly directions as to treatment and hygiene, falls a prey to the various quacks, pathies, etc., or after outward manifestations disappear neglects all treatment and reverts to his old habits and indulgences.

In addition, there is the fairly large group of so-called unrecognized syphilis, which, according to Fournier's

* Read before the Society of the Alumni of St. Luke's Hospital, New York City, Dec. 17, 1910.

statistics, forms 3.1 per cent. of the men and 17.9 per cent. of all women infected. This is due to the possible absence or insignificance of the primary sore, the absence of induration, multiform and atypical lesions simulating other conditions, chancres in unusual or out-of-the-way localities, and to syphilis acquired in pregnancy, in which cases the initial lesion, and often the secondary symptoms, are wanting. In these cases, in which the primary stage is ignored, the secondary stage may be so mild that it is entirely overlooked and the diagnosis of infection is not made until years after when some lesion of the nervous system or ulcerative lesions of the skin develop.

After eliminating all the foregoing factors ranged on the negative side of treatment, there still remains a percentage of patients who develop these so-called parasymphilitic manifestations and obstinate cutaneous and mucous membrane lesions in spite of treatment extending over a period of years. The treatment of syphilis, however, is not a matter of years or the administration of a certain quantity of mercury and potassium iodid, but is one of controlling the lesions and serum reaction until after the cessation of all treatment, a persistent negative Wassermann reaction is obtained. The old method of administering mercury internally in small doses over long periods of time is not only inefficient, but, in the light of recent developments, is harmful in the possible cultivation of mercury-fast strains of spirochetes. This may account for the failure, in many old cases, to respond to this drug, and for a large proportion of the nervous and other affections in subjects who claim to have taken the remedy over intervals of years.

It is impossible from its course in the early part of the infection to predict the outcome of this disease. It was for a long time thought that severe late symptoms often followed mild early attacks, but from an analysis of a large number of cases it is seen that all forms antedate the severe nervous affections. The so-called benign type has probably been overlooked in the early stages or had inadequate treatment or none at all. In those cases which develop, even after vigorous specific treatment, early lesions of the nervous system, there may be a predisposition on the part of the individual or a congenital lack of resistance referable to the tissue. It is rare, in acquired syphilis, to see the severe involvement of more than one system. In the individual with extensive cutaneous or osseous lesions the nervous system usually escapes and the converse is equally true. Whether the symptoms are benign or malignant, it should be borne in mind that we are dealing with one of the gravest infections, the ramifications of which extend to every branch of medicine, and affect not only the original sufferer, but the family and state. The expense to the state alone for its institutional care of subjects suffering from one form or another of this disease is enormous, while personal and business loss are incalculable. The immense number of mental, physical, and moral defectives, the issue of luetic parents, are a reflection on the diagnostic powers and therapeutic skill of the medical profession.

Fortunately, with such aids to diagnosis as the dark-field illumination and the Wassermann test, the time has gone by when we wait for the development of secondary symptoms to establish the true nature of the affection. The Wassermann reaction in some cases becomes positive as early as three weeks after primary

infection, and Hoffmann has demonstrated the spirochetes in the blood three weeks before the outbreak of the constitutional disease. It is, however, simpler to demonstrate the organism in the lesion itself either by means of the dark field or the Burri (India ink) stain. The intensity of treatment in the first six months determines probably the future outcome of the infection. We find that the Wassermann becomes negative much more quickly in patients treated from the very beginning than in those seen later.

Numerous attempts have been made to abort syphilis either by local treatment or by the injection of arsenical compounds. With the former method French investigators have been successful in several instances, but the results have not been sufficiently uniform to warrant its general practice. In 1907 Metchnikoff stated that three injections of atoxyl of 10 grains each would prevent the further development of chancre. To verify this, Lambkin, of the British Army, injected every second man who was infected, with atoxyl or soamin, but failed to control the development of the disease. Greater, although not constant, success has been obtained from the use of the Ehrlich-Hata preparation, but this will be dealt with later.

In the treatment of syphilis with mercury, a vast number of practitioners still rely on the ingestion method, giving bichlorid or protoiodid pills, gray powder, or even mixed treatment in the early stage. Experience has proved that this method is wholly inadequate and that the best results are obtained when the drug is administered by intramuscular injection or by inunction or a combination of both. As a rule, when a rapid effect is desired, it may be obtained by injections of bichlorid of mercury given every other day, but when this is not imperative, it is of advantage to the patient to use the insoluble salt. In my opinion success in treatment depends on a knowledge of the possibilities of the preparation one is using. Every physician should become familiar with some one of the products of mercury, whether it be the salicylate, bichlorid, calomel or gray oil. Practitioners are so besieged by agents of new preparations that before they have learned the use of one they abandon it for another and never become familiar with any. Mercury having been in use for about four hundred years, syphilologists know its possibilities and limitations. It is, therefore, a little premature to depose it from its rank of first specific, notwithstanding recent therapeutic advances and the almost magical effects produced by some of the arsenical compounds, especially salvarsan. Without discrediting Ehrlich's discovery we must not, in our anxiety for a remedy which shall fulfill his ideal, ignore the fact that mercury, too, yields clinical results which sometimes border on the marvelous. Its action on the *Spirochæta pallida* is beyond question, and its rapidity is illustrated by Lambkin's observation that the organisms, which were very numerous before, disappeared from the lesion in about two days after an intramuscular injection of one grain of metallic mercury. In addition to this direct action, mercury is believed to increase the defenses of the body by the formation of alexins to neutralize the specific virus. This influence of the drug on the disease is seen when treatment is begun early, not only in its control but in its preventive action. The important thing to determine is the degree of intensity in the treatment of each individual. In some patients one grain of salicylate of mercury given at weekly intervals

will cause a rapid disappearance of the lesions, while others will yield only when two grains or more are administered. We must learn the dose for each individual without the production of bad effects.

Although it has been taught for years that potassium iodid is not a specific in the true sense of the word, and that it has no indications in the early stage except in malignant forms, one sees it given only too frequently alone or in mixed treatment for early cutaneous and mucous membrane lesions which would disappear under a properly directed course of mercury. Potassium iodid is a valuable adjunct to mercury, by virtue of its power to bring about absorption of the specific infiltrate, and is indicated in those lesions of the late secondary and tertiary stages which do not yield to mercury alone. This refractoriness may be explained on a histologic basis, for under the microscope we find in these syphilomas many giant cells, the result of vascular changes, as well as simple thrombosis of the vessels. The assumption, then, is that the iodid brings about a resolution of the partially organized tissue and infiltrate, the vessels again become pervious and the mercury is able to penetrate to the spirochetes. As the same organisms are present in both early and late syphilis, there is no logical reason why mercury, if it gains access to the organism, should not prove as efficacious in one stage as in another.

Before the introduction of the arylarsonates, arsenic was for years given by dermatologists and syphilologists in syphilis, not only for its supposed specific action on certain obstinate cutaneous manifestations, as the scaling syphilid of the palm, but because of its tonic and alterative effect. In these cases it was given in the form of Fowler's solution, Donovan's solution and arsenious acid. With the discovery of atoxyl by Béchamp and its successful employment in sleeping-sickness by Thomas and Kopke, the use of arsenic in syphilis received a renewed stimulus. This preparation, incorrectly asserted to be a meta-arsenic-anilid, containing about 25.7 per cent. arsenic, was successful in the cure of syphilis in animals, and in the human subject had a marked effect on some of the lesions. It was soon found, however, that the remedy was unsafe and that severe toxic symptoms might follow its administration, such as nausea, vomiting, gastro-intestinal pains, neuritic pains in the limbs, and, chief and most serious of all, optic neuritis followed by blindness. Of 1,633 patients with sleeping-sickness treated by Koch, twenty-two became blind—a percentage of 1.5. Steindorff has collected from the literature reports of ninety-five cases of blindness which followed the use of this drug. The toxic symptoms have been ascribed to impurities in the drug and to the large amount of arsenic introduced into the system. Salmon, who reported very favorable results, advised 0.75 gm., two days later 0.6 gm., three days after 0.5 gm., and then a period of rest. Kurdener gave as much as 50 gm. in seven weeks. Schlect administered 2.4 gm. to a patient in one week; severe toxic symptoms developed on the eighth day, followed by death. The eye symptoms usually appear early; that is, within a few weeks of treatment; exceptionally after a number of months. Nonne treated a woman, aged 37, the subject of general carcinosis, with slowly increasing doses of only 0.06 to 0.35 gm. After four weeks visual disturbances set in which quickly led to blindness; the patient suffered also from headache, vertigo and nausea. When necropsy was performed, a short time afterward, a parenchymatous degeneration of the optic fibers was

found. In another patient, a hereditary syphilitic, aged 54, with arteriosclerosis, nephritis and disseminated chorioiditis, treated by Coppez, amblyopia developed after a single injection of 0.05 gm., five injections culminating in complete blindness.

The first ocular symptoms appear to be a scintillation, cloudiness and diminished vision; the visual field becomes concentrically contracted, often more on the nasal than on the temporal side. With the appearance of the first subjective symptoms the ophthalmoscopic examination is negative or the retinal arteries may be more or less narrowed; the veins may be hyperemic or contracted; after a few weeks the papillæ become pale and with amazing rapidity complete atrophy sets in. The pupils, which react for a long time, become dilated and then rigid.

From the observations of Nicolle, Mesnil and Nicrenstein, the arsenical compounds owe their efficacy not to the arsenic but to the amido group, which is also present in various dyes as trypan red, parafuchsin, etc., which do not contain arsenic but have a similar action on trypanosomes as atoxyl. According to Ehrlich, atoxyl owes its action to a reduction substance in the body, which he called para-amido-phenyl-arsen-oxid. A preparation, chemically identical with atoxyl, sodium amino-phenyl-arsenate, was placed on the market under the name of soamin. It contains 22.8 per cent. of organic arsenic and its toxicity is believed to be one-fortieth that of arsenious acid. A fresh solution of this preparation is made before use and given intramuscularly every other day in doses of 10 grains each until 100 grains are administered. Lambkin reported that he treated seventy patients, all of whom did well and immediately gained in weight. He found the most beneficial effects of the drug in ulcerations of the mouth, tongue, throat and vegetating condylomas, and said there had been a noticeable absence of sore throat since this treatment was begun. While he had no accidents, blindness, as in the case of atoxyl, is reported from other sources. Lane mentions four supervening after this treatment. Other by-effects are intestinal cramps, nausea and vomiting. I was advised, in a personal communication from a physician in New York, that in a patient who was given daily doses of 1 to 10 grains for rheumatism until a series of 100 grains was administered, blindness resulted, which was, however, only transient. This same physician also treated ten patients with syphilis with a dosage varying from 5 to 9 grains until the course of 100 grains was given, which was then repeated after a period of rest. Except in the case cited, he had noted no other ocular disturbances.

The substitution product arsacetin, introduced by Ehrlich, under the chemical name of sodium-acetyl-phenyl-arsenate, was also employed in solution, in a dosage of 8 to 10 grains every other day until a total of 100 grains was reached. It was superseded by arsenophenyl-glycin, which was found to be very effective in the atoxyl resistant trypanosomes in mice. From Alt we learn of its effects in syphilis, as he used the drug most extensively. The sequel to this in the attainment, as it was believed, of Ehrlich's ideal in a *therapia sterilisans magna*, is now so well-known that a repetition of the history of arsenobenzol or salvarsan, its commercial name, will be omitted.

Experience in the treatment of syphilis with the Ehrlich-Hata preparation has now been sufficiently extensive to enable us to draw certain conclusions

regarding the effects of the drug and to cause us to modify some of the very enthusiastic early reports as to its curative properties. The impression so widely prevalent when Ehrlich first announced his discovery, that it would be possible with one dose thoroughly to eradicate the infection, may be true in a limited number of cases, but the relapses which have taken place in a certain percentage have proved that this opinion was premature. Furthermore, the opinion that patients might acquire a susceptibility to the drug is likewise erroneous, since it has been repeated in some cases as many as seven times, not with an increased intolerance, but on the contrary with a diminished reaction to each dose.

Including the first series treated by Dr. Nichols and me at the City Hospital, the drug has been administered in eighty-four cases. Of these there were:

Two patients with initial lesion only, seven with chancre and secondaries, eighteen with early secondaries, nine with late secondaries, seventeen with tertiaries, eighteen cases of tabes, two cases of cerebral endarteritis, three cases of optic neuritis, one case of paresis, three cases of hereditary lues, four latent cases with a positive Wassermann reaction.

The dose employed has varied from 0.3 to 0.6 gm. In the early cases treated at the City Hospital the minimum dose was administered, in some, with brilliant results. These cases were treated with the alkaline solution injected into the gluteal muscles; the next twenty-seven patients were treated with the neutral suspension according to Wechsellmann. Objections to the latter mode of administration, such as the persistence of the swelling for weeks, the slow absorption and less rapid effects, turned the scales again in favor of the original method of giving the remedy in alkaline solution. In the majority of cases the injection is followed by pain, which is usually severe enough to require morphin for its control. After twelve hours, however, patients are quite comfortable, although in some instances the pain may persist for three or four days or longer. The pain is especially severe in tabetics and is often generalized; in some cases it is absent, probably on account of anesthesia. The general reaction is manifested by a rise of temperature from normal to 101 F., and a corresponding increase in the pulse-rate. The cases in which the local and general reaction are unusually severe have been attributed by Wechsellmann to a tissue or general susceptibility to the drug. An illustration of the latter was met in a woman who was treated with 0.6 gm. Her temperature on the first and second days followed the typical curve, but on the sixth day it suddenly rose from 99 to 102.4 F., and continued until the next day, when it reached 102.8 F., and she developed a generalized scarlatiniform eruption. A patient admitted to the hospital who had taken rough-on-rats developed at the same time a similar eruption with a temperature running about the same course. The suspicion of intercurrent scarlatina in both cases was so strong that a representative of the health board was called in for a diagnosis. Both cases were interpreted as toxic erythemas due to arsenic. Similar ones have been reported by other observers.

Within the last two weeks I have administered the drug intravenously and have been much impressed by the entire absence of pain following this method. In some of the cases the reaction has been very slight, the temperature not going above 100.5 F., and gastro-intestinal symptoms were absent. In one case, within two hours after the administration of the remedy in this

manner, a severe chill developed, followed by a rise of temperature of 105 F. and vomiting which persisted for several hours. On the following day, however, the temperature was normal and no further symptoms were noted. A comparison of the intravenous with the intramuscular method shows the superiority of the former, not only in the comfort of the patient, but in the rapidity of its action; and I believe that this mode of administration will have the preference in future.

The effects of salvarsan on primary lesions are very striking. In a young man with three labial chancres, treated on June 2 with 0.3 gm., the lesions disappeared in ten days and his Wassermann reaction is still negative. The only other treatment he had had was two injections of salicylate of mercury. A physician who had infected both hands while operating showed little trace of the lesions one week after the injection. In another physician with a fungating chancre of the finger, a communicating lymphangitis and an enormous mass of lymph-nodes in the axilla, together with a maculopapular eruption of the body, all manifestations disappeared in about two weeks. If the drug is administered early in the primary stage it may be possible to abort the disease. This is illustrated by a patient who received an injection of 0.6 gm. for a primary sore one week old. The erosion healed in two or three days, no secondaries have appeared and his Wassermann reaction is negative.

The most brilliant results with salvarsan, however, are seen in mucous membrane lesions, which show an effect as early as twenty-four to forty-eight hours. In a patient with papules on the tongue, tonsils and pillars of the fauces, rendering deglutition very painful and requiring the use of a local anesthetic, relief was obtained in forty-eight hours, and in a week the mucous patches had all disappeared. This patient had taken mercury for months, under which the lesions would heal temporarily, but if it was omitted for two or three days they would return. Since the use of salvarsan they have remained away up to the present time. Of the cutaneous manifestations, a marked macular eruption was seen to disappear in one week and papular lesions to flatten down in a few days. Scaling syphilids of the palm and sole, which are notoriously obstinate to mercury, respond very quickly to salvarsan. These are the cases in which the combined use of arsenic and mercury is more beneficial than the old treatment. The action of the drug on gummatous lesions is equally impressive, healing often taking place in a week. In one patient with an ulcerating nodular lesion of the leg, of the size of a hand, cicatrization was practically complete at the end of three weeks. In another patient with a gummatous infiltration of the leg of six years' duration and pseudo-elephantiasis of the foot and ankle, after a single injection of 0.5 gm. the infiltration was absorbed in two weeks and the leg returned practically to its normal size.

Bone lesions also undergo resolution very quickly, but as they also disappear rapidly under mixed treatment, it is difficult to draw a fair comparison between the two remedies. The comparison is more apt in the case of malignant syphilis with multiple bone involvement, which did not yield to mercury but was markedly influenced by the arsenical preparation.

The treatment of eighteen cases of tabes has not been very encouraging. The majority of these were, however, of the degenerative type, and the drug was given only at the urgent solicitation of the patient. In several there was a marked improvement in the pains, which

had been very distressing before. It is not at all improbable that in certain tabetic cases in which benefit was reported, a combination of active specific process and secondary degeneration, as suggested by Nonne, was present. In these the meningeal infiltration would be affected, but the degenerative changes would remain uninfluenced. In a case of gumma of the meninges involving the lateral columns, coming on within two years after infection, with marked spastic gait, sensory disturbances on the left side, motor disturbances on the right and atrophy of the muscles of the right lower extremity, betterment in his station, gait and strength was very considerable, but as only two weeks have elapsed since the drug was administered, there is strong hope that his improvement will continue. A similar result in these cases is often observed after bichlorid injections.

In two cases of optic neuritis a temporary arrest in the progress of the affection was noted, but subsequently the disease pursued its course to complete blindness. A very satisfactory result, however, was obtained in a case of acute development within the first year of infection. The patient had been treated with injections of mercury every other day, with intermissions, for nine months. November 16 he developed sudden loss of vision in the left eye. Ophthalmoscopic examination made by Dr. Holzapfel, November 19, was as follows:

"Left eye: Vision equals fingers at one foot; central scotoma about 20 degrees, striated hemorrhages above macular region between macula and disk; nerve-head swollen, edematous, and outlines indistinct; retinal arteries small, veins large and tortuous; in other words, choked disk." November 23 the patient was injected with 0.6 gm. arseno-benzol. December 8 Dr. Holzapfel's report reads: "Left eye: Vision 20/60, fundus normal; total absence of scotoma; circulation in nerve normal; usual sequel, namely, optic atrophy, seems impossible; no evidence at present of previous hemorrhage or of eye having been affected in any way. Normal vision in a short time will not be a surprise."

In view of the fact that the organic arsenical compounds may lead to the production of optic atrophy, an observation of the development of that condition in the early stage of lues is a matter of exceeding interest. It is difficult to obtain from text-books on the eye or on syphilis any very definite data as to the time after infection when these cases develop. The optic atrophies which occur in the late stages of syphilis and usually precede tabetic manifestations by years, probably belong to the parasyphilitic group, while those which occur in the early stage are the result of an acute inflammatory process.

Mott noted a commencing optic neuritis as early as ten weeks after infection, and Wilbrand and Saenger relate the case of a man, aged 20, who suffered with severe headache five months after infection; a month later he became blind in the left eye, and ten days later blind in the right eye.

In this connection I wish to report the case of a physician who was treated on October 7 for a digital initial lesion and secondary eruption with 0.6 gm. of the Ehrlich-Hata preparation. Prompt regression of his symptoms took place, but in the latter part of November he suddenly developed a choked disk, closely simulating the condition in the man cited above who had been on mercurial treatment for nine months. It would be just as fair to assume in the latter case that the neuritis was due to the mercury as that the arsenic was at fault in the former. Still, the suspicion that it may have been responsible cannot wholly be allayed in

view of visual disturbances reported from Finger's clinic. As this is a very important and perhaps the only dangerous phase of the treatment, the following cases, reports of which have already been published, will be quoted in detail:

CASE 1.—A robust peasant girl of 19; infection 8 weeks old; multiple scleroses and beginning roseola. August 2 she received 0.45 gm. neutral suspension intragluteally. The clinical manifestations disappeared quickly and by September 30 the Wassermann reaction was negative. October 5 she returned with headache, vertigo, visual disturbances, right-sided oculomotor paresis, beginning optic neuritis of the left eye; Wassermann again positive. Her condition was considered a recurrence, for which she was given October 12, 0.45 gm. in acid solution subcutaneously. October 28 she was placed on mercury and potassium iodid but without result, and neuritis of the right optic nerve set in.

CASE 2.—Girl, aged 19; infection of two and one-half months' duration, for which she received, July 20, 0.4 gm. neutral suspension. By August 5 all clinical manifestations had regressed, but she returned October 18 with visual disturbances and abducens paresis.

CASE 3.—Man, aged 22; infection two years. He had been treated with mercury and potassium iodid, thirty injections of arsacetin and 18 of enesol. July 6 he was given 0.4 gm. for gummata of the nose and pharynx. September 5 he had a recurrence; October 5 visual disturbances, sluggish pupils, bilateral concentrically contracted field and beginning atrophy.

CASE 4.—Man aged 28; lues five months. He was given an injection of 0.45 gm. August 8; October 3 the Wassermann reaction was negative. November 10 he developed chorioiditis of the right eye.

As he has not noted similar manifestations after the use of mercury, Finger is very much puzzled as to the interpretation of these cases. He believes there is either a direct relationship between the arseno-benzol and the eye symptoms or possibly a combination of lues and action of the drug.

Fehr, according to Wechselmann, examined a large number of patients with syphilis during the early secondary period and found in 2 to 3 per cent. of them neuritis, without any subjective visual disturbance. An incomplete cure of these specific changes it is thought later lead to degenerative processes of the nerve. Wechselmann is inclined to look on the ocular conditions developing after the administration of salvarsan as recurrences of the disease, as it has been suggested that after such treatment relapses show a predilection for the eye. Kowalewski reports the case of a woman treated with the Ehrlich-Hata remedy in May; in July she developed severe headache and ten days later ocular disturbances. A month later the ophthalmoscope showed a typical descending perineuritis. This he regarded as a recurrence of the disease, and under injections her vision was restored to practically normal. It has just come to my knowledge that a patient treated by me October 24 for an early secondary eruption developed an iritis about a week ago, which is now yielding to injections of bichlorid.

A number of ophthalmologists with whom I have discussed the effects of the arsenical preparations on the eye have expressed the opinion, almost unanimously, that one would expect rather a primary degeneration of the optic nerve, similar to that which follows after methyl alcohol, than an acute inflammatory process. When choked disk and retinal hemorrhage are present the condition would favor the diagnosis of a luetic process. It was thought that the serious objection to the other arsenical products in their action on the optic or vestibular nerves had been entirely removed in salvarsan,

as no degenerative changes were found in any of the animals experimented on. It is not unusual in cases of syphilis to see active manifestations develop during the administration of mercury. I have noted in a patient who was treated with large doses of mercury by injection the development of iritis in one eye, and in spite of its continued use, as much as 3 drams being rubbed in, the other eye became affected in a similar manner. The use of a specific drug, therefore, does not always safeguard the patient against relapse during its administration.

With the publicity that has recently been given to twenty thousand or more cases of syphilis, as closely observed as these have been, it would not be surprising if a good many more cases of optic neuritis or other ocular affections were brought to light than after the older methods of observation and treatment. The predilection of the syphilitic virus for the various structures of the eye should always be borne in mind, and the results of the disease not confused with those of the drug.

In hereditary syphilis, the remarkable therapeutic effect of the remedy is, perhaps, best illustrated by citing the following case of a little girl, aged 11. From the history, when she was 11 months old she had a bullous eruption of the feet; when 2 years old apoplexy of the right side which lasted ten months; she recovered and had a second attack. Epileptiform seizures began one year previously to being seen. In March, 1910, she developed a keratitis and her hearing became affected. She had a marked osteochondritis of the wrists and dactylitis of the left index and right middle and ring fingers. Her teeth were of the Hutchinson type; knee-jerks slightly exaggerated; Babinski present, more marked on the right side; Wassermann reaction strongly positive. An acute attack of keratitis developed just before the injection was given. On December 16 she received 0.35 gm. On the seventeenth there was a marked improvement in her eye and pain was absent from her fingers and wrists, which had been exquisitely tender before. When she returned home on the twenty-third her eye had practically cleared up, her hearing was improved and the swelling of the joints was reduced one-half.

In a hereditary syphilitic, aged 23, with an old keratitis and positive Wassermann reaction, no objective improvement occurred, although the patient maintained that her vision had materially increased.

In a cachectic infant with scaling syphilids of the palms and soles, the lesions disappeared and the nutrition was considerably improved with a dose of 0.06 gm.

The results with the Wassermann reaction have varied within very wide limits. As the majority of patients treated have been out-of-town patients, it has been impossible to follow them carefully serologically, and therefore a satisfactory estimate cannot be given. In general, a change took place in four to five weeks. Six days is the earliest period recorded for a patient who had had mercurial treatment before. Another case, although two injections had been given, did not become negative until the end of fifty-two days; a second case with two injections was still positive after seventy-four days, and in a third with a second dose 102 days have elapsed without obtaining a negative reaction. A reaction that became negative in twenty-six days, later was positive again. A patient with an early initial lesion with a weakly positive reaction before treatment,

became strongly positive after, but is now negative and no secondary symptoms have developed. Several cases showed alternating negative and positive phases.

SUMMARY

Except in a limited number of cases, salvarsan in a single dose has not fulfilled its promise of a specific in human syphilis. It is, however, a most efficient agent in controlling the early manifestations of the disease and in limiting the contagious stage. As mucous patches and condylomata are the active carriers of the contagion, and most of the cases of infection occur through them, the value of the drug in cutting short this period cannot be overestimated. A therapeutic blow struck in the early stage when the spirochetes are numerous must have a marked effect on the subsequent development of the disease.

The result of one injection is fully equal to that of a prolonged course of mercury in the early stage and to a combination of mercury and potassium iodid in the later stage, with the advantage that we avoid the unpleasant by-effects of mercury, such as salivation. It is especially valuable in combating emergencies, as illustrated in the case of choked disk; in malignant syphilis; in hereditary syphilis; and in those cases which are refractory to mercury.

The objections to its use are the pain which immediately follows the injection, the hospital care necessitated, and the present uncertainty in regard to its possible injury to the eye. Administration by the intravenous method entirely obviates the first objection and it will doubtless be the method of choice in the future. It is, however, more difficult and requires more technical skill.

Where an intensive treatment of syphilis is indicated some authorities are advocating two intravenous injections of salvarsan at intervals of a week followed by an intramuscular injection of an oil suspension.

There is an impression among physicians that it is desirable to avoid mercury for a period before and after the administration of salvarsan. This is without foundation, as in the majority of cases patients who have been treated with mercury do better than when the remedy is given alone. A previous or subsequent mercurial treatment also influences the Wassermann reaction more favorably. This supports Ehrlich's contention that the organisms have more than one chemoreceptor and that the contagion can be attacked from more than one side. In cases in which the Wassermann reaction does not become negative at the end of four or five weeks, and it is not practicable to give a second dose of salvarsan, I am now advising a course of mercury.

If, by combining the mercurial treatment with salvarsan, we can accomplish a cure of this infection in six months and obtain repeated negative serum reactions, our views regarding the length of time that must intervene between the onset of this disease and marriage may be materially modified. We are not yet, however, in a position to issue any dogmatic rules regarding this very vital question.

Until we know more of the possibilities of the drug with regard to the eye, an attitude of conservatism should be preserved. It would be better, therefore, for the present not to employ it as routine treatment, but only in cases in which it is especially indicated, observing carefully the precautions laid down by Professor Ehrlich. Every patient should be examined by an ophthalmologist before the drug is administered, and

patients should have hospital care for four days to a week after. In the light of cases recently reported from Lesser's clinic, in which the general reaction did not appear until the ninth and twelfth day, it would be safer to lengthen the interval of hospital observation rather than to shorten it.

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TREATMENT OF THE PAINS OF ACUTE ANTERIOR POLIOMYELITIS

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Formerly, pain was not considered an important symptom of infantile paralysis; but in the recent epidemics in Europe and America it has been a prominent feature in many cases. The New York committee reported that it was marked in 50 per cent. of the cases they analyzed, and that it was sometimes excruciating, and often lasted for weeks.

As meningitis is emphasized in the report of this committee as a feature of the morbid invasion, it might be inferred that the sole cause of the pain manifested is irritation of the meninges. It is to be regretted that the committee is not explicit on this point; but it may be inferred from the emphatic recommendation of suspension in a warm bath in order to remove the pain, that meningitis cannot be the explanation of certain of the pains at least, for no mechanical measures are capable of allaying the irritations of inflamed meninges.

My observations during the present epidemic in Washington have shown me that there are two distinct types of pain resulting from poliomyelitis. The first is that due to meningitis, of which I have nothing further to say. The second is due to the nutritional and mechanical effects which follow destruction and interference with the neurons which govern the muscles. It finds its analogy in the normal pain and tire which result from cramped positions or prolonged exertion. It is due to stretching and sagging of muscles and joints, and can be experimentally produced very easily in shoulder, elbow and wrist by holding in the hand a heavy weight while the muscles are relaxed. The atony of the muscles is further favored by this passive stretching which, too, increases the pain.

The best proof that this is the real nature of the majority of the prolonged pains after poliomyelitis is afforded by the methods which most readily relieve them. These all depend on the principle of relieving stretching and sagging of muscles, tendons and joints with their fasciæ.

The methods used are galvanic electricity, suspension and support. Of these galvanic electricity is the most efficacious because it responds to the most insistent physiologic need, that for exercise of paralyzed muscles. The passive exercise afforded by massage does not excite the contractile function of the muscle fibers, and when this function is in abeyance, atrophy of the muscle cells occurs. Galvanic electricity is the only means by which it can be prevented when there is degeneration of the motor nerves; no other therapeutic measure excites contractility.

I am aware that many text-books and electrotherapists advise the postponement of electricity for two months. This is an error due to a misconception of the pathology of the disease from a vague idea that electricity should not be applied in inflammatory states. But there is no inflammation either of muscle or nerve in this disease:

these structures are affected by a degeneration secondary to an inflammation which implicates their cells of origin and which itself is interstitial, the cells being involved only on account of their contiguity to the diseased process. The pathology is unlike that of multiple neuritis, in which a toxin causes an active inflammation of the nerves themselves, which is of course aggravated by the functional activity excited by electrical currents or other stimuli.

To these considerations, I wish to add my experience in the application of galvanic electricity in the first week of the disease. So far from irritating, as inexact thinkers would have us believe on *a priori* grounds, it has afforded great relief, enabling the patient to pass into a tranquil sleep from a condition in which his most imperative desire is frequent change of position. After the paralyzed muscles of the limb have been made to contract by galvanism, positions which before were intolerable can be maintained with ease. In this way the prevention of contractures is much facilitated. The reason of this should be obvious enough; for contractures not due to weight of the parts are caused by the overcoming of a paralyzed muscle group by the tonicity of its antagonists.

Suspension in water also acts by relieving the torsions, stretchings and involuntary tightenings which are the accompaniments of even the best-devised supports in the most comfortable bed. Indeed the excess of these tensions has been invoked by some observers as a factor in neurasthenic states, and much benefit has accrued some patients through the adoption of a method of intentional relaxation during repose. But in no way can this be attained so completely as by the even pressure exerted by a surrounding fluid medium. So that, as it is not often expedient to galvanize the muscles more than once a day, the value of suspension in a warm bath is not exaggerated in the report of the New York committee. The third means of relief of abnormal tensions of muscles and fibrous tissue is the suspension or support of the trunk and limbs by a jacket, in slings and cradles or by pads and tilting of the bed.

Vibration, massage, passive movements and hydrotherapy, of course, maintain a place in the treatment as aids to nutrition and as imperfect substitutes for exercise and its substitute galvanism; but these measures are subsidiary only.

Remembering that degeneration commences within three days and is decided by the tenth day, and knowing that regeneration is a matter of months, the physician will be prepared for more and more recovery of voluntary movement for a prolonged period. But observers are agreed that the earliest possible utilization of each recovering or unimpaired muscle bundle is of great advantage. To this end, it is most important to encourage the patient to make efforts. In young children muscular control is poorly developed, and a determination to overcome difficulties has not become a characteristic. Hence, it is often the case that when only a few muscle bundles of one group are spared, the child will cease to innervate that from which he receives no result. To overcome this tendency the child's limb must be placed in the best possible position to manifest a movement visible to himself. The best of all situations is suspension in water; and this re-educational measure is the second advantage of systematic use of the warm bath.

But there is another factor in this re-education. A child will soon cease to engage himself in what he conceives to be an imposed task. But if it is made interesting for him, it will become a game; and he will per-

severe in it without an irksome supervision or, what is even worse, a compulsory exaction of a task which would render the whole matter distasteful. Hence, all kinds of games must be devised and taught to the child; and these should be adapted to the needs imposed by the distribution of the paralysis.

Psychologic considerations are of great importance also in the after-care of a patient who remains paralyzed. A tendency to reticence and diffidence may have to be counteracted by providing active interests demanding social adjustments, the opportunity for which is apt to be curtailed in the case of a disabled child. On the other hand selfishness and the desire for unreasonable exactions may have to be overcome. Contact with the social environment must be fostered in every possible way. A small country town perhaps affords the best opportunity for these cases. The stagnating tendency which sometimes rules these patients may be neutralized by stories of men who have overcome physical infirmities; for, after all, the range of opportunity for a cripple in good health is not so limited as may appear at first sight. Of course, when a sedentary life has to be led every possible means must be used to obtain physical exercise and to avoid the cramped attitudes which favor poor oxidation and tuberculosis.

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SIMPLE COMPLETE TONSILLECTOMY

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That complete removal of the faucial tonsil with its investing capsule is the most satisfactory procedure, is the teaching of our best operators to-day. It is not my purpose or my pleasure to depart from this teaching, but on the other hand, after fourteen years of experience and the performance of almost every tonsil operation that seemed at all rational, I commend it the more.

This being the case, it is my intention only to emphasize the simplicity with which this operation can be performed with a vertical snare, and at the same time accomplish the desired results.

In using the word "complete," I mean all the term implies, viz., freeing the tonsillar space by removing all the tonsil with its investing capsule intact. Anything short of this is bad surgery and should not be practiced, as clinical observations have clearly shown it to be of little or no permanent benefit.

The first thing to do is to ground oneself in the anatomic relations of those special parts of the throat, and the second, to keep inside the tonsillar space. The most prolific cause of hemorrhage is failing to get all of a fibrous tonsil, cutting the muscles with sharp instruments, or lacerating them with the finger or some dull instrument. A clear knowledge of the possible sources of hemorrhage will enable the operator to largely prevent its occurrence. Therefore note the following blood-supply:

The tonsillar artery, a branch of the facial, is the chief vessel to the tonsil, though the ascending palatine, a branch of the lingual, sometimes takes its place. The tonsillar artery passes upward on the outer side of the superior constrictor muscle to the tonsil and soft palate. The palatine artery also sends branches through the superior constrictor muscle to the tonsil. The ascending pharyngeal passes upward outside of the superior constrictor and gives off a correspondingly larger branch when the palatine artery is small.

The dorsalis linguae, a branch of the lingual artery, ascends to the base of the tongue and sends branches to the tonsil and pillars of the fauces. The descending or posterior palatine artery, a branch of the inferior maxillary, supplies the tonsil and soft palate from above, forming anastomoses with the ascending palatine. The small meningeal artery sends branches to the tonsil, though they are of minor importance.

The fact, then, that the three principal arteries, viz., tonsillar ascending pharyngeal and ascending palatine, which supply the tonsil and pillars, pierce the superior constrictor muscle in their ramification to these parts, makes it important that the technic should be such as not to injure those muscles bounding the sinus tonsillar by pulling them through the instrument and by cutting out sections with instruments cutting on the horizontal, by piercing them with sharp instruments, such as knives or scissors, or by lacerating them with blunt or dull instruments as previously stated. Hemorrhage, the dread of tonsil surgery, will be thus avoided.

There are a few, a very few, who can dextrously use the finger to dissect or divide the tonsil from the muscles without injury to the muscular structures, but I should advise, if you do not already know how, not to take it up, as too many throats will be sacrificed, at least to some extent, in learning.

In my judgment, tonsillectomy is a hospital, an office or a home operation, and I have had equally as good results when it was performed in office or home as when performed in the hospital. I certainly have no objections to the hospital, but have never deemed it necessary to impose this extra expense on patients unless I was fearful of their not receiving the proper care and attention at home.

Anesthesia may be local or general. I prefer local anesthesia, except for obvious reasons, to be decided by each surgeon, as personal elements enter largely into its consideration. For general anesthesia, I use ether exclusively, and for local use a 10 per cent. solution of cocaine applied once or twice is sufficient, as too frequently applied, some toxic effect may result.

For injecting the tissue around the tonsil, solution of epinephrin and codein has given me good satisfaction. It should be injected at the upper, middle and lower portions of the anterior and posterior pillars respectively, and also in the supratonsillar fossa, one or two minims at each point, with an ordinary hypodermic syringe having an extension.

I generally prepare one tonsil and while it is becoming anesthetized, prepare the other, and by the time the second is prepared, the first is ready to be removed.

TECHNIC

Antiseptic precautions having previously been employed, I grasp the tonsil first prepared with tissue-vulsella forceps of my own design, one blade in the supratonsillar fossa and the other under the tonsil proper, and then by pressing the handles together a firm hold is secured on the tonsil. This special forceps gives a double hold and a tonsil is rarely, if ever, so friable as to allow the hold to tear out. If the tonsil is fibrous, there is both surface and deep hold which makes it doubly secure. I pull the tonsil inward and forward and if the fibrous bands are not united too densely to the anterior and posterior pillars no dissecting is necessary; but I release and insert the forceps through the tonsil snare, which is also of original design. Then I grasp the tonsil as previously stated, and pull it inward and forward, at the same time pushing the fender, which carries a No. 9 piano wire, backward and outward so as to bring the top of the fender in the supratonsillar fossa; in the meantime, the shaft acts as a tongue depressor and does away with the necessity of an assistant. I grip the handles of the snare, and as soon as

the wire is released its tendency is backward and outward, following the tonsil back and cutting it off at its base, the point of least resistance. At the same time it does no possible injury to the anterior and posterior pillars or superior constrictor muscle, and avoiding the injury of these muscles, alarming hemorrhages need not be feared.

If the uvula, by accident, should have been pressed back by the fender, it will be released before the tension on the wire has become great enough to cut. Should the tonsil be fibrous and densely adherent, I dissect it loose from the borders of the anterior and posterior pillars with a wave-edged knife, so as not to impede too much the circuit of the wire in its course to the base of the tonsil, and proceed as previously stated, thus freeing the tonsillar space of all the tonsillar tissue with scarcely a trace of hemorrhage.

I have found this method most efficient and simple in performing *complete tonsillectomy*.

AFTER-TREATMENT

I swab the throat with a 12 per cent. mixture of phenol (carbolic acid) and glycerin. Ten to fifteen drops of phenol in eight ounces of water, to be used as a gargle as often as patient desires, makes a grateful wash. Ice held in the mouth or applied to the throat also makes a very grateful and beneficial means of allaying the pain and inflammation which naturally follows.

Liquid diet should be ordered for the first three or four days, and quietude observed for the same length of time.

A CASE OF TABES DORSALIS WITHOUT ATAXIA *

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While not, as a rule, an early symptom, motor incoordination, as manifested in ataxia, is one of the most significant and distinctive phenomena of tabes dorsalis. Usually manifesting itself after months or years, it may appear in the course of days or weeks. The disturbance in function is in marked contrast with the preservation of gross muscular power, the strength of any individual movement being retained, at any rate for a considerable length of time, before wasting from disuse sets in. Almost invariably the lower extremities are involved first, exceptionally the upper extremities. The muscles of the trunk also may suffer, and rarely those of the face, lips and tongue. The muscles of the vocal bands are said to be involved not infrequently.

The case to be reported is of interest because of a total absence of ataxia, although the disease of the spinal cord appears to be at least of several years' duration.

A shirt-ironer, aged 30, married five years, came under observation Dec. 18, 1909; complaining of weakness and pain in the lower extremities, present for two and a half years, together with stabbing pain all over the body of only a few weeks' standing. The knee-jerks were absent, even with reinforcement, and the pupils were unequal (the right being the larger), contracting in accommodation, but remaining immobile on exposure to light. Station was steady, gait good, and coordination in the upper extremities was preserved. Sensibility appeared to be unaffected, and sexual desire and vigor were active. No visceral disturbance and no symptoms of mental derangement were present. A lymphatic gland was palpable in the left epitrochlear region and glands in the groin were enlarged. A shallow but extensive scar was visible on the head of the penis. The eye-grounds were normal, the disks oval and slightly pallid, and the balance of the ocular

muscles was preserved. The patient admitted having had an attack of gonorrhea at the age of 23, but he denied knowledge of syphilitic infection. His wife has borne a child, now 4 years old. She had had no miscarriage and she was at the time of examination advanced five months in pregnancy.

Varied treatment had been employed, but without success. The case was considered possibly one of tabes, but the demonstration of the complement serum-reaction by Dr. E. P. Corson-White seemed to remove any diagnostic doubt, and a course of vigorous antisyphilitic treatment was instituted. Whether symptoms of general paresis will develop later cannot, of course, be foreseen.

Apart from the fact that motor incoordination may be due to causes other than disease of the posterior nerve-roots or sclerosis of the posterior columns of the spinal cord, this case exemplifies the wisdom of employing the term "tabes dorsalis" in preference to locomotor ataxia.

1019 Spruce Street.

WHAT BECOMES OF THE SPIROCHETES IN THE SECRETIONS?

A QUERY SUGGESTED BY EHRLICH'S "606" AND OFFERED AS A SUBJECT FOR INVESTIGATION

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This query may properly apply to other diseases and their therapy, but most particularly and by clearer illustration to syphilis: What becomes of the spirochetes on the free surfaces not reached by the remedy, or, perhaps it would be better to say, in the retained secretions and excretions?

Varying with the different stages of the disease, a certain number of the spirochetes will be found throughout the mucous surfaces. This means the mouth, the gastro-intestinal and rectal areas inclusive, and the Eustachian tubes. The vagina and endometrium must carry countless numbers. The seminal vesicles and prostatic follicles are to be borne in mind. Endothelial sacs such as the pericardium, the pleura, it is fair to assume, contain many of these wandering forms.

The spirochete has been demonstrated repeatedly in most of these secretions or excretions. Negative findings have been reported from the spinal fluid alone in the studies published. This does not by any means prove positively that the spirochetes are not present in the spinal fluid. It simply is an illustration of the fact that, if present, they are difficult of demonstration—a fact most easy of acceptance and comprehension to those familiar with the difficulties of such work. It is a perfectly fair and reasonable assumption, and on most points already proved, that the spirochete is in certain numbers present on all of these surfaces.

We know from many reported studies that the milk of a syphilitic mother to whom "606" has been administered, carries an almost imperceptible dose of arsenic to the nursing child. How much arsenic, if any, is to be found in the vaginal or pharyngeal mucus? How much in the seminal vesicles or the pleura? At best, there is not likely to be found more present than in the milk. The serous membranes belonging to the lymphatic circulation are probably theoretically well within the sweep of the *therapia sterilisans magna*, but this can hardly be true of the bronchi or uterine tract.

Now given body heat and moisture in some mucous cul-de-sac, how long may not this spirochete survive? Surely until long after the last of the "606" has been

* Read before the Philadelphia Neurological Society, Nov. 25, 1910.

eliminated, which when given intravenously is in four days; with a longer time when administered intramuscularly.

This, then is the substance of the query. The spirochete does exist in such localities. These localities offer favorable opportunity for shelter and growth. It is not a wild assumption that they may survive in such a cul-de-sac many days after the elimination of their antidote. What then becomes of them? Do they not possibly often reinfect the patient? Perhaps this has been an overlooked point in all the years of our treating syphilis by the old methods as well as new. Or do the increased antibodies meet and dispose of each surviving spirochete? It is a question that I have not seen touched on and one that certainly merits the careful consideration of some of our competent biologists.

TWO APPENDICES IN ONE PERSON

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On Nov. 7, 1910, I was called out of town to see Miss C. D., aged 21. She had been suffering intense abdominal pain accompanied with vomiting for three days. The abdomen was distended and tense; pulse 140; temperature 101. A diagnosis of acute suppurative appendicitis with peritonitis was made, and an operation advised. On opening the abdomen I found pus in the peritoneal cavity with no walling off; there were two appendices containing pus; one was ruptured. One appendix measured 3 by $\frac{3}{4}$ inches, the other one $3\frac{1}{2}$ by $\frac{3}{8}$ inches. Their bases were $1\frac{1}{4}$ inches apart, and each had a meso-appendix. Drainage was instituted, the patient placed in the Fowler position and continuous rectal saline by the drop method was employed for five days. The patient made a slow recovery; at present is able to walk about the room.

Therapeutics

POSTOPERATIVE ROENTGENIZATION IN CANCER

Cancer is the most dreaded disease afflicting humanity to-day, because of its frequency, its resistance to the commonly accepted methods of management, and the pitiable condition to which it inevitably reduces its victims in the majority of cases. Any measure, therefore, which promises to increase our power over cancer is deserving of thorough trial, and when such a promise has been developed into a certainty that curative power is exhibited by such a measure, even if only in an occasional case it has vindicated its claim to be applied in every case, unless positive contra-indications exist.

The fact that the *x*-ray, when skilfully applied, has demonstrated such curative influence, only the most obtuse will deny to-day. Every radiotherapist who has attained sufficient knowledge and had sufficient experience to entitle him to the designation, endorses the above statement and recommends that the *x*-ray be applied, *as a routine measure*, without waiting for recurrence to take place, in conjunction with every operation for the removal of cancer. There is found some difference of opinion as to whether the application should be made before the operation, after the operation, or both before and after, but all agree that it should be made sometime, and that such application should sustain a more or less intimate time relation to the ablative procedure. The doubters of the curative power of the *x*-ray are not found in the ranks of those who know the agent.

But the surgeons are to-day the men who issue the supreme dicta as to how these cases shall be managed, and, unhappily, the vast majority of them are not sufficiently familiar with skilfully applied postoperative roentgenization in cancer to place their judgments above question. As a matter of strict fact, the average surgeon knows vastly less about the beneficent possibilities of this measure than does the roentgenologist or internist about those of ablative surgery. Whether the question involves the management of pneumonia, leukemia, the applicability of physiologic therapy, or the opening of an abscess, the surgeon often assumes a judicial attitude and issues an ultimatum. When an internist or physiologic therapist ventures to assume that he is qualified in any degree to pass on a surgical problem, he is often treated condescendingly or with dignified aloofness. And yet the judicial problems with which the internist is confronted in the average case of pneumonia, typhoid fever, nephritis, etc., require, for their efficient solution, nicer mental poise, greater wisdom and experience, and wider knowledge, than nine-tenths of those involved in the most brilliant surgical procedures. The physiologic therapist spends his life in a field which is practically unknown to the average surgeon. The early training of both, and their experiences and observations, have familiarized them to a large extent with the theory and practical results of surgical operations. In spite of this, however, the surgeon maintains his attitude of gentle but insistent superiority, and many a patient is thereby condemned to death or invalidism who could be restored to useful and happy activity if the therapeutic vision of the surgeon were less circumscribed: if he could but appreciate that the internist and the physiologic therapist are just as capable of sometimes affording him help which is valuable to his patient, as he is of affording them assistance. And with all this, the average surgeon is undeniably entirely honest in his position. He is merely looking through the large end of his telescope.

The foregoing, while apparently more or less irrelevant to the subject, perhaps has a weighty and vital bearing thereon. When the average surgeon is told that every patient who has been operated on for cancer should be roentgenized, as a routine measure, just as soon as the operation wound has healed, he assumes one of three possible attitudes: first, frank skepticism regarding the utility of roentgenization in any but superficial cancerous lesions, an attitude usually provoked by failures which have come under his observation which have discouraged him from seeking further enlightenment from competent sources or from investigating the causes of these failures; second, agnosticism, accompanied by an indifference—sometimes due to his absorption in a large practice—profound enough to prevent him from taking the trouble to look up the therapeutic results of some good roentgenologist; or third, a challenge to discussion opened by such queries as: (1) "Why should a patient be roentgenized before recurrence has manifested itself?" (2) "Why should every patient be subjected to the extra expense involved in routine postoperative roentgenization, when we know that many will be radically cured by extirpation alone, and that recurrence will not take place in such cases?" (3) "Why roentgenize many patients unnecessarily?"

Those who assume the first-mentioned attitude are almost hopeless as far as conversion is concerned; those who assume the second are entirely hopeless; but those

who assume the third are usually open to conviction, and are the men to whom cancer sufferers must look for the realization of their hope for a mitigation of the dismal outlook to which they are doomed by unsupported extirpation. Such queries "put it up" to the roentgenotherapist, and he can satisfy any reasonable person of the propriety of routine roentgenization, if his knowledge and experience are sufficient to justify his assumption of the designation.

1. The reason why roentgenization should not be delayed until recurrence has taken place is that by the time recurrence has manifested itself the malignant process will, in many cases, have progressed so far that neither *x*-rays nor anything else can reach it effectively. The most dangerous recurrences are internal; they frequently take place with terrifying promptness, and without giving any outward and visible sign of their presence until they are well developed. The first visible indication of recurrence may transpire months after the fatal internal lesion has insidiously and firmly established itself. Immediate, routine, postoperative roentgenization, when it is effective, eliminates this danger.

Again, it is a well-established fact that recurrences are frequently far more vicious and resistant to the *x*-ray than the original lesion. It is also a well-established fact that roentgenization is utterly powerless to arrest many recurrences. Why subject any patient, then, to the gloomy chance of developing such a recurrence when the catastrophe could be so easily forestalled in, at least, many cases, by immediate postoperative treatment?

Finally, in a disease so difficult of control as cancer, conditions should, when possible, be manipulated so that only the minimum expenditure of therapeutic force will be required of any agent, however much power it may seem capable of exhibiting, because, in some instances, even all that it can do will not be enough. Immediately after thorough extirpation of a cancerous focus, such malignant elements as may remain are microscopic in size; after recurrence the lesions are relatively large. The destruction of a recurrence, then, demands much more remedial efficiency and activity on the part of the *x*-ray, to say nothing of the greater metabolic, resistive, and eliminative efficiency and activity demanded of the patient's organism, than is required when the lesions are microscopic. Immediate postoperative raying constitutes attack on the menacing factors when they are smallest and weakest, and when, if recurrence is imminent, the resistive power of the healthy tissue surrounding these foci is at its best.

2. As far as the extra expense involved in routine postoperative roentgenization is concerned, a moment's thought will demonstrate how slight is its claim to consideration. The desirability of preventing recurrence is too great for adequate expression; on its prevention depends the success of the whole operative procedure. If it obtains, the original operation might just as well—in most cases much better—not have been performed at all, because recurrence is usually more vicious in its course than the primary lesion. Therefore, the expenditure of the fifty or one hundred dollars involved in postoperative roentgenization assumes such slight relative importance, *per se*, as to become entirely negligible.

Concerning the justifiability of advising the patient to incur the extra expense for a remedy which may not be effective, the same logic applies as in the case of advising the original operation. The *x*-ray has demonstrated that it can prevent recurrence in some cases, and

the ablative procedure has done the same. The *x*-ray has failed in some cases, and so has extirpation. Therefore, if it is justifiable to recommend the operation it is also justifiable to recommend postoperative radiation. In either case the patient is paying his money for the purpose of securing the most effective means of curing his trouble, and he desires to have his cure made complete and dependable, if possible. He knows that he cannot be guaranteed a cure, however much is done, but he wants all possible reasonable precautions taken. Postoperative roentgenization gives him the best chance for obtaining a radical cure. If the combination of measures is not effective, both patient and surgeon are conscious that everything possible has been done, and neither will have occasion to reproach himself, when it is too late, for having omitted a vital point in technic because of hesitation concerning the expenditure of a few dollars at the opportune moment.

3. This procedure should be applied in every case, even though many patients are treated unnecessarily, because it is never possible to determine which are going to need it previous to recurrence; hence, in order to be sure that all of those threatened receive its benefits, all patients must be rayed. The same logic applies again, as in the case of the ablative procedure. We cannot tell which patients will be radically cured by operation until time has demonstrated that recurrence does not obtain. It has, however, become a well-established principle of surgical practice that extirpation is the proper management for cancer, unless the disease has extended so far as to render operation palpably useless.

As a matter of logic, the argument favors the routine postoperative application of the *x*-ray more than it does the routine adoption of extirpation, because unnecessary or unsuccessful roentgenization does the patient no harm, if skilfully applied, whereas unsuccessful extirpation increases the malignancy of the growth, and the last condition of the patient who is operated on and suffers recurrence is usually worse than the first.

The foregoing paragraph suggests another situation in which postoperative roentgenization sometimes enables ablative surgery to overcome otherwise hopeless cancer, and when the application of either alone would probably be ineffective, *viz.*, when the malignant process is so extensive that it cannot be completely extirpated. A lesion of this character offers no prospect whatever of recovery under ablative procedures alone, and but slight prospect under roentgenization alone, probably because the local and general toxemia induced by the breaking down of large cancerous masses by *x*-radiation, is frequently profound enough to depress the patient's local and general resistive and recuperative powers seriously. Indeed, there can be little doubt that many patients have succumbed to such toxemia. And yet, up to very recently, the treatment of this class of cases has constituted about the whole extent of the field that the average surgeon has been willing to allow the roentgenotherapist. The dictum taught and written has been, "use the *x*-ray in inoperable cases," and, for the reason just stated, the *x*-ray did not derive much credit from its use in these cases. It is, indeed, a tremendous tribute to its actual power that it derived any at all. By first extirpating as extensively as possible in such cases, however, the amount of work to be demanded of the *x*-ray, and the amount of contingent toxemia are tremendously lessened, and both measures are given an opportunity to do their utmost under the most favorable conditions obtainable in the given case.

PREOPERATIVE ROENTGENIZATION

This measure cannot properly be considered in this discussion, but just a word in reference thereto will not be out of place, as mention of the postoperative procedure naturally suggests the preoperative application. Its advocates assert that it eliminates the malignant elements from the region surrounding the tissue to be removed, and that this is of great advantage.

This may, of course, be true, but that it actually does so eliminate malignant elements is more or less theoretical and it seems to some roentgenotherapeutists that, even on theoretical grounds, whatever advantage might accrue is more than counterbalanced by the dangers which the measure may precipitate. These are three in number: (1) the danger of depressing the patient's vitality immediately before he is about to need all of his strength for the operation, through the probable induction of more or less toxemia caused by retrogressive changes brought about in the original disease focus by the radiation; (2) the danger of so influencing the trophic functions of the part as to interfere with healing after the operation; and (3) the danger of delaying the operation long enough for sufficient preoperative radiation to be applied.

1. It is, of course, true that in the majority of instances enough toxic depression will not be induced by preoperative radiation to influence seriously the patient's progress. It is just as true, however, that in many cases what little is induced will be sufficient to turn the scale against recovery. In a disease as refractory as cancer no factor should be permitted to enter into the problem which threatens to imperil, in any degree, the therapeutic outcome, unless a positive compensating advantage is secured thereby. That such an advantage is conferred by preoperative roentgenization is yet to be proved.

2. That vigorous x -radiation markedly retards, and sometimes entirely inhibits, reparative processes is so well known as not to require discussion. Under the circumstances we are considering, especially when it is going to be necessary to apply the ray again just as soon as healing has taken place, no measure should be tolerated which tends, in any degree, to impair the promptitude of such healing. It can, of course, be argued that preoperative radiation should not be applied with sufficient intensity to influence the trophic functions to this extent, and, theoretically, this sounds plausible and reasonable at first thought. Experience demonstrates, however, that two insuperable difficulties render such regulation impossible in any given case, viz., individual idiosyncrasy toward x -ray effects, and the fact that no exact, universally efficient, reliable method of measuring x -ray volume is available to-day. The existence of either one, alone, would render it impossible to secure precise adaptation of x -ray volume to the needs of the individual case.

To be of any use at all, preoperative roentgenization should be vigorous enough to inhibit the malignant elements, and as the relative vital resistance capacity of these varies in different cases, what would be a sufficient radiation in one case would not be sufficient in another, would be more than sufficient in still another, and, in an occasional case, would be enough to inflict serious harm. The only efficient method, then, would be to give the maximum radiation always so that every case would be sure of having enough, and, as we have seen, this involves certain injury to many cases. If the

maximum is not always given, however, injury will just as certainly be inflicted on those for whom anything less than the maximum is not enough.

Another fact which tends still further to increase the uncertainty regarding the dose, hence the danger, of preoperative radiation, is that the indication that radiation has been excessive (dermatitis) does not usually appear until two weeks after the injury was actually inflicted. A beautiful course of preoperative radiations, then, might be perpetrated, the operation be performed, and just at the height of the healing process a severe x -ray necrosis develop with all its vicious potentialities for one who has demonstrated his vulnerability to cancerous degeneration.

The same argument applies against postoperative raying before the wound has healed. Gangrene of healthy flaps has been caused by raying too soon. When it is not attempted to secure union, as after curettement, when seizable open wounds are left to heal by granulation, radiation may, in most cases should, be commenced immediately. But when union within a reasonable time is probable the application should be delayed until it is practically complete.

3. If effective preoperative radiation were devoid of danger, the delay of operation involved would not be objectionable, but we have seen that this is not the case. Just so long as the ablative procedure is put off, by just so much will the time period during which sound tissues are threatened, be increased. This factor of delayed operation will not be important in many cases, perhaps, but it will in some; hence, as little, if any, demonstrable advantage accrues therefrom, it would seem as though little could be urged in favor of submitting the patient to the extra risk.

A final word may properly be said regarding the operator who is to be selected to apply the x -ray therapeutically. A good radiographer is by no means necessarily a good radiotherapist, any more than a good house-carpenter is necessarily a good cabinet-maker. The two use the same tools, to be sure, and have to use them with high degrees of skill, but the temperamental requirements and the technic involved in the two callings are vastly different. The efficient radiotherapist needs to be endowed with a fund of clinical knowledge and a faculty for clinical observation, and with a courage, patience, and good judgment that apply in but slight degree in connection with the good radiographer. Then, again, the radiographer, in the city, has so much diagnostic work to do that he cannot devote sufficient time and study to radiotherapy to get the best out of it. The radiotherapist, in the city, is similarly situated as regards radiography. The country districts do not furnish enough material to develop first-rate specialists in either line. As a matter of fact it may be interesting to know that those competent to judge estimate the number of competent radiotherapists in the United States to-day as less than forty.

Great pains, then, should be taken to send patients who are to be roentgenized to some one who is profoundly versed in the technic, and thoroughly experienced in the practice of roentgenotherapy. If any other has been entrusted with its application in a given case and good results have not followed, the method should not be blamed, but the responsibility placed where it belongs and a competent operator selected the next time.

TRANSMISSION OF A MALIGNANT NEW GROWTH BY MEANS OF A CELL-FREE FILTRATE*

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A tumor of the chicken, histologically a spindle-celled sarcoma, has been propagated in this laboratory since October, 1909,¹ and in the past few months has developed extreme malignancy.² From a bit inoculated into the breast muscle of a susceptible fowl there develops rapidly a large, firm growth; metastasis takes place to the viscera; and within four to five weeks often the host dies. The behavior of the new growth has been throughout that of a true neoplasm, for which reason the fact of its transmission by means of a cell-free filtrate assumes exceptional importance.

EXPERIMENTS

For the first experiments on the point use was made of ordinary filter-paper and the ground tumor suspended in Ringer's solution. It was supposed that the slight paper barrier, which allows the passage of a few red blood-cells and lymphocytes, would suffice to hold back the tumor and render the filtrate innocuous. Such has been the experience of other workers with mouse and dog tumors. But in the present instance characteristic growths followed the inoculation of small amounts of the watery filtrate, and followed also the inoculation of the fluid supernatant after centrifugalization of a tumor emulsion.

These results led to more critical experiments, which will be here detailed. Tumors of especially rapid growth and young, well-grown, barred Plymouth Rock fowls were used throughout.

EXPERIMENT 1.—Tumor material from the breast of Chicken 92 (tumor generation 6 A) was ground with sterile sand, suspended in a considerable bulk of Ringer's solution, and shaken for twenty minutes in a machine. The sand and tumor fragments were separated out by centrifugalization in large tubes for five minutes at 2,800 revolutions per minute. Of the supernatant fluid a little was pipetted off, and this centrifuged anew for fifteen minutes at over 3,000 revolutions per minute. From the upper layers sufficient fluid for inoculation was now carefully withdrawn. The pure-bred fowls were injected in one breast with 0.2 c.c. of the fluid, in the other with a small bit of tumor tissue. All developed sarcoma at the site of this latter inoculation, and in seven the same growth slowly appeared at the point where the fluid had been injected.

EXPERIMENT 2.—Tumor from Chicken 90 (tumor generation 6 A) was ground, suspended, and shaken as before. But after one centrifugalization the fluid was passed through a Berkefeld filter No. 2 (coarse). Before filtration, it was pinkish-yellow, cloudy; afterwards, faintly yellow, limpid. Nine fowls were inoculated with 0.2 c.c. of the filtrate in each breast, and twenty-two more received filtrate in one breast, a bit of tumor in the other. Of the nine, one slowly developed a sarcoma in each breast, and later microscopic growths were found in its lungs. Of the twenty-two receiving both filtrate and tumor, five developed sarcoma where the filtrate had been injected, and these five showed especially large growths from the tumor bit.

The Berkefeld filter employed was later found slightly pervious to *Bacillus prodigiosus*.

EXPERIMENT 3.—The filtrate was similarly prepared except that a small Berkefeld filter (No. 5 medium), impermeable to

Bacillus prodigiosus, was used. As before, the filtration was done at room temperature. Fowl 124 (generation 7 A) furnished the material. Twenty chickens were inoculated in each breast with the filtrate, but none have developed tumors.

EXPERIMENT 4.—In this experiment the material was never allowed to cool. About 15 gm. of tumor from Chicken 140 (generation 7 B) was ground in a warm mortar with warm sand, mixed with 200 c.c. of heated Ringer's solution, shaken for thirty minutes within a thermostat room, centrifugalized, and the fluid passed through a filter similar to that used in Experiment 3. Both before and after the experiment, this filter was found to hold back *Bacillus prodigiosus*. The filtration of the fluid was done at 38.5 C., and its injection immediately followed. In four of ten fowls inoculated with the filtrate only (0.2 to 0.5 c.c. in each breast) there has developed a sarcoma in one breast; and though the growths required several weeks for their appearance their enlargement is now fairly rapid. Pieces removed at operation have shown the characteristic tumor structure.

CHARACTERS OF THE TUMOR

As has been pointed out, the special significance of these results lies in the growth's identity as a tumor. The original sarcoma was found as a unique instance in a flock of healthy fowls; and, though susceptible normal chickens and others with the tumor have since been kept together in close quarters for long periods, no instance suggesting a natural infectivity of the growth has occurred. When inoculated, it is at first a local disease, very dependent on the good health of the host. At this time intercurrent illness of the fowl will check the nodule's growth or even cause it transiently to disappear. For long the sarcoma could be transferred only to fowls of the same pure-bred variety in which it arose, and this only in an occasional individual; but like many tumors, it has gained on repeated transplantation a heightened malignancy, and the power to grow in other varieties of the same animal. Yet in these it does not do well; and it has not been successfully transplanted to other species.

Histologically, the growth has always consisted of one type of cells, namely, spindle-cells in bundles, with a slight, supporting, connective tissue framework. The picture does not in the least suggest a granuloma; and cultures from the growth remain sterile as regards bacteria. At the edge of the invading mass there is often practically no cellular reaction, but lymphocytes in small number may be present, as is common with tumors in general. Metastasis takes place early, through the bloodstream, and the secondary nodules have the same character as the primary. Several instances of the sarcoma's direct extension into vessels have been encountered. The secondary growths are distributed especially to the lungs, heart and liver, and in the last organ are sometimes umbilicated. The host becomes emaciated, cold and drowsy, and shortly dies.

Transplantation experiments with the tumors resulting from the filtrate are at present under way. The tumor of Experiment 2, which arose in the fowl that received filtrate alone, has already been successfully transplanted.

Sixty-Sixth Street and Avenue A.

Length of Treatment of Syphilis.—The first two years' treatment is the most important period for the patient and on its thoroughness depends largely his future well-being. Treatment should be actively pursued for at least five years; that is, the treatment should be persistent for three years, less energetic during the next two. The patient should be under observation the next several years. In fact, it is best for the patient to undergo treatment for three or four weeks each year during his lifetime.—A. G. Nadler, in *Yale Medical Journal*.

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Jour. Exper. Med., 1910, xii, 696.

2. Rous, Peyton: Metastasis and Tumor Immunity: Observations with a Transmissible Avian Neoplasm, THE JOURNAL A. M. A., Nov. 19, 1910, p. 1805.

PYELITIS GRAVIDARUM

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Although pyelitis gravidarum is not a very rare disease, it occasionally presents certain difficulties in differential diagnosis, for which reason the following case may be of interest:

History.—Mrs. P., aged 35, a sextipara, had easy and normal pregnancies and labors with the first four children; in the fifth and sixth pregnancies, however, she was severely ill, and to judge from her history the complications of the two pregnancies were identical. The patient came under my observation in the last two months of the sixth pregnancy. She said that she had had pneumonia and brain fever in the fifth month of the preceding or fifth pregnancy, and was confined to her bed until after her delivery, which occurred prematurely about the eighth month. She coughed incessantly throughout that time, and had periodical pains of excruciating character over the left side. She also had severe intestinal symptoms, as vomiting and tympanites. The pain in the left side was remittent and not intermittent. While she had "pneumonia" (?) she stated that she never expectorated blood or rusty sputum. Four weeks before delivery labor pains set in and with the gradual progress of labor there was a corresponding subsidence of her pains and intestinal trouble.

Present Illness.—Concerning the history of her present trouble, all I could learn was that the patient felt perfectly well during the interval and during first five months of pregnancy. In the sixth month the patient commenced to have pains, paroxysmal in character, in left side, occasionally accompanied by chills and fever. Before she came to the German Hospital her main symptoms were vomiting, chills, fever and pain. On admission, patient was greatly emaciated, with a hectic flush, severe, dry cough, and great dyspnea. Cough and dyspnea she had had only a few days. She also had retention of urine, later involuntary urination and defecation, and partial blindness, lasting a week. She asserted that she had the amaurosis in the previous attack also. Headache, and pain in the left hypochondrium, running down along the ureter, were present most of the time.

Examination.—Taking the left kidney between one's hands and making pressure, exquisite tenderness could be found. The same tenderness could be elicited by pressing along the course of the ureter at its lower part, of course intravaginally. Widal proved negative. Of great importance were the urinary findings: specific gravity, 1.010; urea, 0.5 per cent.; there were pus cells, epithelial cells, red blood cells, and almost pure cultures of the *Bacillus coli communis* present. I examined a great many specimens, with the same result. The colon bacillus was so predominating that its pathologic importance with regard to the etiology of this disease seemed obvious. Hemoglobin, 70 per cent.; whites, 14,600; reds, 5,752,000. Unfortunately, a bacteriologic examination of the blood was not made. I should not have been surprised if the colon bacillus had been found in the blood and the scanty sputum.

Treatment.—This was symptomatic; saline enemas, hexamethylenamin (urotropin) with distilled water. Buttermilk was the first article of diet which the patient retained, commencing with small quantities—2 ounces—and gradually increasing to 8 ounces three times daily. As soon as the head of the fetus descended, symptoms abated, and with commencement of labor, lasting twenty-four hours, which also in this instance was premature, the patient improved rapidly, and appeared past the crisis, as it were, as soon as the child was delivered. She was able to nurse her child, which weighed 4¾ pounds at birth, and left the hospital sixteen days after confinement, practically well. The urine was found to be normal soon after labor.

We have two varieties of pyelitis in connection with pregnancy: first, the pyelitis occurring during pregnancy, often of ascending gonorrheal origin, or caused

by cystitis existing before pregnancy, and possibly also caused by the colon bacillus which ascended from the anus, as Scheidemandel pointed out; second, pyelitis of pregnancy, pyelitis gravidarum, having pregnancy as its exciting cause, and with, in the majority of instances, complete recovery after labor.

There are two theories as to the avenue of infection of the kidneys. One is that the infection ascends from the external genitalia through bladder and ureter; the other that the infection is carried in the blood and localizes in the kidney as a *locus minoris resistentiae*.

That the gastro-intestinal disturbances (regular symptoms of this disease, and unusually prominent in this case), are of etiologic importance, is beyond peradventure. A great many observers lay much stress on the mechanical state of affairs during pregnancy as a contributing factor, namely, pressure on the ureter, especially the right, by the head of the child. The fact is that in most cases on record, as also in mine, the symptoms left the patient as the head descended and pressure was relieved.

The terrific cough, lasting two and a half months in the former and one month in last pregnancy, and quickly leaving the patient on delivery, possibly was due to colon bacillus infection of the respiratory tract. In most cases the right kidney was affected, which was explained by the fact that the uterus leans toward the right side, the sigmoid protects the left ureter, and the presentation is mostly occipito-left anterior.

Whether the presentation in my case, occipito-right anterior, had anything to do with the left kidney being affected, I would not venture to say. The diagnosis is, of course, more difficult in dextrolateral pyelitis, the disease being very apt to be mistaken for appendicitis, gall-stones or typhoid. The tenderness over the kidney and along the course of the ureter, especially the pelvic portion, felt through the vagina, and the urinary findings, especially presence of the colon bacillus, ought to be sufficient to clear up the diagnosis.

34 Washington Street.

ABDOMINAL DIPHTHERIA

B. C. EVERALL, M.D., WATERLOO, IOWA

A case of abdominal diphtheria recently reported is of interest because of its rarity; it reminds me of a case of mine which presented similar symptoms.

The patient, a boy, age 6, was in my care for nasopharyngeal diphtheria, from which he was apparently convalescent at the seventeenth day of the disease. At that time his pulse was 96 and his temperature 99.2. On this day he vomited twice. One ounce of castor oil was given and retained, but vomiting returned and became almost constant. The pulse was 158; temperature 103 F. Six hours later the temperature was 104.5 F., and pulse 170. The abdomen was distended and tender, especially below the navel. The patient vomited a dark green material. An enema was given and followed by much gas and only a slight coloring to the returned fluid. At this time, most alarming respiratory and circulatory symptoms appeared. The respirations were hurried and regular, and then suddenly ceased, while the pulse and heart-sounds became imperceptible and the face cyanotic, the whole attack lasting one to two minutes. Two doses of antitoxin were given, followed by rapid abatement of symptoms. Two days after the last dose of antitoxin, following a dose of calomel and an enema, the patient passed a large amount of foul and bloody feces, containing a necrotic membrane, 3 inches long, having the appearance of a cast of some part of the gastro-intestinal tract below the pharynx. The patient made a slow recovery, developing an extensive paralysis with a persistent high pulse-rate and obstinate constipation.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JANUARY 21, 1911

EXPERIMENTAL CIRRHOSIS OF THE LIVER

Perhaps no disease presents more difficult problems in its etiology and pathogenesis than does cirrhosis of the liver. Experiments have shown that various toxic substances administered to animals produce degenerative changes in the liver, and that when this administration is prolonged for a considerable period, increase of the interstitial tissue follows. Nevertheless, the results of such experiments have been inconstant, and the lesion which has been obtained has rarely possessed the clinical and anatomic characters of the cirrhosis common in man. Alcohol, particularly, although its abuse has been recognized clinically as a cause of cirrhosis in man, has not been found to produce experimentally in animals the pathologic condition of the liver found in human cirrhosis.

E. L. Opie¹ in his experiments has shown that bacteria in association with toxic substances having a special affinity for the liver, such as chloroform and phosphorus, may produce changes which neither the poison nor the bacteria can cause when acting alone. The possibility that disturbances of metabolism in man may produce changes in the liver similar to those caused by such poisons is well illustrated by the toxemia of pregnancy, in which persistent vomiting is associated with central necrosis of the hepatic lobule similar to that caused by chloroform. The experiments show that the activity of a hepatic poison may be so intensified by bacterial infection that a quantity of the poison which alone produces little change, may, in combination with *Bacillus coli* and *Streptococcus pyogenes*, cause destruction of almost the entire hepatic parenchyma. Some bacteria (*e. g.*, colon bacilli), which have little pathogenicity for the normal animal are virulent for the animal whose liver has been injured by chloroform or phosphorus. It is possible that those instances of acute yellow atrophy which accompany infection with *Streptococcus pyogenes* are dependent on some disturbance of metabolism or other form of intoxication which has rendered the liver unusually susceptible.

The experiments, furthermore, show that bacterial infection can influence and even determine the development of cirrhosis of the liver. Degenerative changes which usually undergo rapid repair may cause sclerosis when combined with bacterial infection. Whereas cirrhosis may be caused by chloroform without bacterial inoculation, the introduction of bacteria hastens the progress of the chronic change. The poison in large quantity rapidly causes death, but a much smaller quantity in association with a relatively non-pathogenic microorganism produces a lesion from which recovery is possible. Such insults repeated at intervals produce the chronic changes of cirrhosis. By the administration of chloroform, accompanied by intravenous inoculation with *Bacillus coli*, it has been possible to produce advanced hepatic cirrhosis accompanied by active new formation of bile-ducts within a period of twenty-three days. The experiments have shown that in this way it is possible to produce a portal obstruction comparable to that which occurs in the atrophic cirrhosis of man.

This experimental work suggests the explanation of the fact that some alcoholics escape cirrhosis, while temperate persons and even total abstainers sometimes develop the disease. In the latter cases we may assume that the toxic element of the etiologic combination arises from the production of poisons inside the body.

PASTEURIZATION OF MILK

The present wide-spread campaign for a clean milk-supply has brought about a more or less heated controversy between those favoring and those opposing the pasteurization of milk. The former contend (1) that there is protection from pathogenic bacteria; (2) that the reduction of numbers lessens infantile mortality; and (3) that the keeping qualities of the milk are thereby enhanced. The opponents contend that (1) pasteurization kills all acid-forming bacteria, which would, according to their view, protect the milk from pathogenic changes; (2) that bacterial toxins are not destroyed by pasteurization temperature; (3) that careless methods of handling milk are encouraged and dirt in milk is covered up; (4) that bacteria increase more rapidly in pasteurized milk than in raw milk; and (5) that undesirable changes take place by pasteurization.

Bulletin 126 of the U. S. Agricultural Experiment Station, Bureau of Animal Industry, recently published, reports a mass of work which throws new light on many phases of pasteurization and overthrows many prejudices against it. The samples for the experiments were collected from commercial pasteurized milk, and the results, therefore, are of eminently practical value. The bacteria in pasteurized and raw milk were studied by grouping them into three classes: (1) acid-forming bacteria; (2) peptonizing or liquefying (putrefactive) bacteria; (3) inert bacteria.

1. Opie, Eugene L.: Proc. Path. Soc. Philadelphia, September, 1910.

It was found that many acid-forming bacteria are not destroyed below 75.6 C. (168 F.), so that pasteurized milk turns sour the same as raw milk, although the process is somewhat delayed. Liquefying bacteria, which form spores and therefore survive pasteurization, have been believed by some to produce toxins detrimental to health. The bulletin shows that there are fewer bacteria of this kind in pasteurized milk than in raw milk, and that they do not multiply rapidly. The numerical relation of the three groups is practically the same as in raw milk, and the cleaner the milk the more closely does this relation resemble that in pasteurized milk. Acid-forming bacteria are scarce in certified milk and can be found only by special methods. The same condition is found in pasteurized milk. The acid development in an efficiently pasteurized milk is about the same as in clean raw milk, but in less efficiently pasteurized milk the position of the groups is more like the relation in dirty milk.

No investigation is reported on the influence of pasteurization temperature on toxins, but it is not known that toxins are formed under ordinary conditions; many toxins are destroyed at relatively low temperatures. Careless methods need not be encouraged by pasteurization, if an adequate dairy inspection is provided for. No milk should be used under any conditions if it comes from a dairy with a score of less than fifty points, according to the method of rating dairies adopted by the government.

The objection that bacteria multiply more rapidly in pasteurized milk than in raw milk is shown to be erroneous. Comparisons between both kinds of milk with approximately the same numbers of bacteria show an equal rate of multiplication. It seems that the smaller the number of bacteria present the more rapid the multiplication, whether it be in raw or pasteurized milk. As to the objectionable changes taking place during pasteurization, there is no evidence of such changes, unless the milk is heated far beyond the temperature necessary for pasteurization. The authors conclude that pasteurization which holds the milk at a temperature of 145 F. for thirty minutes is the most practical method. This is known as the holding process, in distinction from the flash process, which heats the milk momentarily to 185 F. The latter method has many disadvantages and is not so effective as the former.

Considering the low counts of bottled pasteurized milk, and the similarity of the bacterial group proportions to those of clean raw milk, the authors think that the former not only cannot be classed, from a bacteriologic point of view, as inferior to commercial raw milk, but that it presents distinct advantages over the raw product in the keeping qualities of the milk, in the protection from pathogenic bacteria and consequently in the lessening of infant mortality. The last of these considerations, of course, is the most important, since it represents the object to be attained.

THE CRIMINAL CLASS AND THE SO-CALLED CRIMINAL TYPE

It is scarcely more than a year since Lombroso died. Within a week or two of the anniversary of his death, the International Prison Commission sitting in Washington listened to a sweeping repudiation of the theory that criminals are members of a distinct class, marked with certain atavistic physical characteristics, and endowed with an innate tendency toward crime. Sir Evelyn Ruggles-Brise,¹ president of the British Prison Commission and president-elect of the International Prison Commission, says that examinations of three thousand of the worst convicts in England, including measurements, family history and mental and physical characteristics, have failed to confirm the existence of a criminal type; "and in fact," he says, "both with regard to measurements and the presence of physical anomalies in criminals, these statistics present a startling conformity with similar statistics of the law-abiding classes."

The disagreement between penologists like Ruggles-Brise and the Italian school of criminal anthropology seems to be in part a matter of nomenclature and definition. The "criminal anthropologists" are trying to cram a new concept, scientific *ex hypothesi*—but not yet so defined that he who runs may read—into the word "criminal," meanwhile unceremoniously ignoring its accepted legal definition and meaning. When Lombroso says² that crime among savages is not the exception but the rule, and that in its origins crime is mingled with the least criminal actions, those who have the accepted legal concept of crime in mind at once reject the statement as false; and the cautious non-partisan, lacking an authoritative statement of the Lombrosan criterion of crime, is reluctant to draw any conclusion more final than that Lombroso certainly did not intend the legal definition. The current non-legal meaning, of course, is too vague and unscientific to be of use.

According to the only precise accepted definition, the word "criminal" denotes a person who has committed a public offense, or crime. The word thus makes no pretension to being scientific, but it is practical and indispensable. But nothing is a crime in any exact sense except what the law declares to be such; and therefore the content of the word "crime," while roughly constant along certain main lines, varies in detail according to the age in which and the people by whom it is applied. As Wines says,³ "that which is permanent and abiding in human nature constitutes its larger part; but there is enough that is evanescent to impart a transitory character to many alleged crimes." At the period when it was a crime for an English laborer to

1. Ruggles-Brise, E.: The New World and Crime, Survey, Nov. 5, 1910, p. 181.

2. Lombroso, C.: L'homme criminel, second French edition, Paris, 1895, Félix Alcan, i, 35.

3. Wines, F. H.: Punishment and Reformation, New York, Thomas Y. Crowell & Co., p. 23.

catch fish in preserved waters, and for an English tradesman to attempt to corner the market, piracy might be legalized by letters of marque issued by any civilized state, and therefore was not necessarily a crime. These instances, extreme as they seem, are drawn from a not very remote past; and probably few would assert that even now our criminal laws present anything like scientific consistency. The law is a bludgeon of defense, rather than an instrument of scientific precision.

Penologists, however, deal, not with criminals as such, but with convicted criminals—that is, with prisoners. For them, the word “criminal” practically means a person to whom twelve totally unskilled persons have applied that somewhat arbitrary and altogether unscientific definition. One might naturally expect prisoners to exhibit points of inferiority when compared with useful members of society; but, since the accepted definition of the criminal is no more scientific than the definition of the butcher, the baker or the candlestick-maker, and since prisoners are selected from among criminals by a process scarcely more scientific than that by which jurors are selected from among law-abiding citizens, *a priori*, why should we expect the inmates of prisons to present common biologic characteristics even if they do present common social characteristics? The relief with which Ruggles-Brise greets evidence tending to overthrow what he calls the “vulgar superstition” that the criminal is a being of a special type may therefore be appreciated, even by those who still reserve judgment on the question of hereditary defect as one cause of antisocial conduct.

Lombroso, it will be remembered, never asserted that born or atavistic criminals constituted the mass or even the majority of lawbreakers; he admitted the existence of criminals who were developed by opportunity. He claimed to find the “criminal type” in 40 per cent of criminals; but, we believe, he reduced this percentage still further before his death. The question which he assumed to answer in the affirmative may be formulated, for lack of a more authoritative statement, in some such words as these: Is there a definite type of individual in whom exists, correlated with certain atavistic physical characteristics, a tendency to revert to types of conduct once usual and normal, but now generally reprobated as antisocial? Individuals of such type might be expected naturally, though not necessarily or inevitably, to come into conflict with the law; and similarly the law-breaking classes might be expected to comprise more of such retrograde individuals than do the law-abiding classes; but the problem presented by such degenerates is not identical with the problem of the criminal in the legal sense. Confusion between the material and the terms of the scientific problem of the “criminal anthropologist,” on the one hand, and the material and the terms of the practical problem of the penologist, on the other, is a misfortune for which the former is apparently responsible through his unrightful appropriation of the term “criminal.”

Ruggles-Brise asserts that the idea that the criminal is the product of heredity—of the remote past—has paralyzed efforts at reform. On this account especially, the disentanglement of the two problems—the practical problem of the lawbreaker and the scientific problem of the degenerate—seems desirable and important. Whether Ruggles-Brise is right in his rather harsh and peremptory denial of the whole of Lombroso's theory is a question for the anthropologists to settle. Meanwhile, it is to be hoped that the adoption of the more fruitful and hopeful conception of criminality (in the non-Lombrosan sense) as the product mainly of environment, and hence of forces within reach here and now, may give an impetus both to reform of the criminal and to prevention of crime.

Current Comment

CENTRIFUGAL EDUCATION

A recent address by Professor Osborn¹ contains truths which are quite as equally applicable to medical education as to any other department of learning. Professor Osborn uses the term “centrifugal” education in speaking of the training of students to give out, to construct or to develop new ideas, as compared with the mere learning and memorizing of facts, which he designates as “centripetal” education. The real object of education is certainly better fulfilled by the former method. The value of education, a genuine culture, does not depend on what one takes in, but on the use one makes of what he learns, on what he gives out. “One little idea of your own well expressed has a greater culture than one hundred ideas you absorb.” So the man of true culture will always be the man who is using his learning, his reason and his observations in an effort “to add something of his own to the stock of the world's ideas.” Clearly the chief object of education should be to develop productive thinking, to get the student to make practical use of what he has learned. Such constructive thinking should be encouraged at the very beginning of the student's career and not postponed until after his graduation. Instead of interfering with the student's learning and memorizing of facts, centrifugal education will lead him on to greater effort and, by an inductive process, enable him better to grasp other related facts. Not only will the student better appreciate the value of knowledge, but he will also be able more easily to memorize what he reads if at the same time he is taught to make use of that knowledge. To stimulate this constructive thinking different methods have been employed. Some teachers, like the great embryologist, Francis Blair of Cambridge, England, write joint papers with their students. Others urge their students to do original research and to write original articles, the best of which are read before some special society and published in its transactions. Following the method of Langdell in teaching law, Professor Osborn has his students in turn give the lectures

1. Huxley on Education, Columbia Univ. Quart., December, 1910.

while he listens and makes comments. After all, "the measure of a teacher's success is the degree in which ideas come, not from him, but from his pupils." In no profession is the possession of fully developed powers of observation and of prompt, logical and productive thinking more important than in the practice of medicine. A centrifugal education for everyone who enters the medical profession would insure, not only more prompt and accurate diagnosis, but also the selection and use of the most rational and beneficial means of treatment.

THE "FITTING" OF GLASSES

The author of a recent article¹ describes her experience in visiting fifteen five-and-ten-cent stores in a large city where a pretense is made of fitting glasses by means of test cards. The card contains type of different sizes, the largest at the top, each line numbered. The customer was directed to hold the card about fourteen inches from the eye and to read down until she reached the finest type that could be read without glasses. Then the glasses corresponding to the number opposite the line were the ones said to be required. The author describes her case as one of "unsymmetrical myopic astigmatism with subnormal accommodation," for which she had already been given the proper correction by an ophthalmologist. The glasses purchased varied from a + 6.75 to + .50 and were, of course, the same for both eyes, except in one instance, in which the pieces of glass were so badly ground that "they represented one thing in one spot and something quite different in another." It is needless to say that this patient could see nothing with any of the glasses; all of them were for far-sighted eyes, whereas her eyes were myopic. She concludes that perhaps she is not a fit subject to buy ten-cent-store glasses. Investigation showed that large numbers of people were "fitted" with these glasses. One store reported selling as many as six dozens a day. Though we may not subscribe to the long list of ailments which some ascribe to eye-strain, the positive injury done and perpetuated by allowing such absurd methods to be employed on so important an organ as the eye is a rather serious matter.

THE PREVARICATOR'S PREDICAMENT

Physicians the country over are familiar with a little publication that is sent to them at more or less regular intervals called "*La Tribune Médicale* (American Edition)." The only apparent mission this "journal" has is that of advertising the products of Fougere & Co. from which house, presumably, it emanates. In its January, 1911, issue, which contains no other advertisements than Fougere's, is an editorial discussing the federal Food and Drugs Act. The remarkable attitude is taken that, since the pure food law will not permit lying statements to be made (on the label) about medicinal preparations, therefore, therapeutic progress is

greatly hampered. A case is described of a firm which is alleged to have put out a preparation "in an ultra-ethical manner." "No exaggerated statements were made, its chemical formula and its properties were given," etc. But, alas, the conservatism and moderation—for, of course, it could not be lack of merit—were such as to prevent the preparation becoming a success. As a result "the firm in question, therefore, withdrew their product from the market in disgust." The moral of all this is summed up by the editorial writer in the following peroration:

"This shows, we think, that, much as we must deplore it, it is necessary, even with such trained men as physicians, to make dogmatic statements and actually to magnify claims in order to get attention, and if this is so with the medical profession, how much more will it be necessary with the public? Mild, reasonable and modest statements fall flat, and since no exaggerated statements will be tolerated in the future on account of the 'misbranding clause' of the Food and Drugs Act, it looks very much as if enterprise and progress in this direction must cease."

It seems then, that, in the United States, "enterprise and progress" are incompatible with truth and honesty. Prevarication is the price of progress! Honesty is the worst policy! Now we understand, perhaps, why in the past Fougere & Co. advertised that Santal Midy "cures in 48 hours" and that diabetes is "surely and rapidly cured by Vin Uranè Pesqui." Evidently this firm's desire to aid ailing humanity—and incidentally increase the box receipts—was strong enough to overcome any scruples it may have had against lying. It was a case of choosing the less of two evils. We are glad to say that we have sufficient confidence in the ultimate status of drug therapy to hold the opinion that any remedy of real merit may safely count on coming into its own without being introduced by means of the persuasive fiction of the prevaricating press agent. That many a worthless product has enjoyed a vogue and helped swell the profits of its manufacturers simply because an artificial demand was created by the use of printer's ink, we must sorrowfully admit. In fact, it is a sorry commentary on modern methods of introducing medicinal products that it should be thought necessary not only to apologize for untruthfulness in exploitation but also to insist that only by falsehood can success be assured. The outlook for therapeutics must seem very black to the editor of this advertising periodical, for, in spite of the cramping restrictions put on pharmaceutical houses by making it actually illegal to lie about their products (on the label), we believe that the Food and Drugs Act meets with pretty general approval and that it is here to stay. We are optimistic enough to believe that pharmaceutical manufacturers generally will meet the exigencies of this case in the true American spirit which always finds a way around or over obstacles. To such firms as feel hampered by the requirements of the pure food law we respectfully suggest a remedy: Tell the truth about your products and let therapeutic progress take care of itself. The results, we venture to say, will be as much a surprise to the firms themselves as their change of attitude will be to the medical profession. Great is truth and it shall prevail!

1. Greene, Lilla A.: Eye-Strain and the Ten-Cent Store, *The Survey*, Nov. 19, 1910, p. 299.

Medical News

ILLINOIS

Personal.—Dr. Charles L. Patton, Springfield, has succeeded the late Dr. John A. Prince as a member of the staff of the David Prince Sanitarium.—Dr. Robert H. Bell, Carlinville, has been chosen physician of Macoupin County.—Dr. James L. Funkhouser, Chrisman, sustained painful bruises in a runaway accident, January 5.

Occupational Poisons.—The report of the Occupational Diseases Commission, which has been sent to the general assembly, states that thirty distinct poisons constantly menace the life and health of factory workmen of Illinois. Lead is by far the most important industrial poison, but risk from this cause may be almost entirely eradicated by the prevention of dust, by prohibiting eating with unwashed face and hands, and by preventing workmen from going home with lead on their clothing and bodies. Reports are also included on the effects of brass fumes and carbon monoxid gas.

The Governor's Message.—The governor, in his biennial message, suggests that the legislature give the matter of a state sanatorium for consumptives careful consideration; recommends that a law be enacted providing for better methods of registration of vital statistics to be in conformity with those adopted by the leading states and the provisions of the census bureau of the United States government; calls the attention of the general assembly to the need of the revision of that section of the medical practice act of Illinois which enables the board to revoke certificates of physicians for unprofessional or dishonorable conduct, recommending that an amendment be now enacted empowering the board to revoke licenses of any practitioner whether licensed prior to or subsequently to July 1, 1899. He also repeats the recommendation made to the previous general assembly that appropriations for the free distribution of diphtheria antitoxin be continued.

KANSAS

Hospital Cornerstone Laid.—The cornerstone of the new Bethany Hospital, Kansas City, was laid recently with appropriate ceremonies. The building is to cost \$160,000, will be five stories and basement in height, and will accommodate 153 patients.

Personal.—In a fire at Moline, January 11, which destroyed property valued at \$50,000, Dr. John W. Farrow suffered the total loss of his office.—Dr. A. L. Shelton and family, formerly of Anthony, have returned after a seven years' sojourn in West China and Thibet.—A fire, January 2, in Wichita, caused damage of \$135,000, and destroyed the office and equipment of Drs. Ernest E. Hamilton and Harry A. Johnson.—Dr. George W. Davis, Ottawa, is reported to be seriously ill.—Dr. Lincoln W. Griffin, Fort Scott, sustained serious injuries in a runaway accident, December 26.—Dr. George M. Covert, Arkansas City, is reported to be seriously ill.

KENTUCKY

Hookworm in Kentucky.—To ascertain whether the hookworm thrives in Kentucky, the State Board of Health has decided to extend the Rockefeller Commission an invitation to send a representative to the state.

Physician Secures Verdict Against Physician.—Dr. Robert E. Gatz, Louisville, is said to have secured a verdict of \$777 against Dr. Clarence H. Harris, Louisville, whom he sued for \$25,027. The plaintiff claimed that he had him arrested for malice in a dispute over a street car case.

Favors Milk Fund.—An ordinance introduced at the meeting of the Louisville City Council, January 4, appropriating \$1,500 to the Babies' Milk Fund Association was referred to the health committee, which reported favorably at a meeting, January 10, but so amended it as to increase the appropriation to \$2,000.

Personal.—Dr. William A. Jenkins, Louisville, has been elected visiting physician to the School of Reform, vice Dr. William Bailey, resigned.—Dr. J. Rowan Morrison has been appointed a member of the Louisville Milk Commission, vice Dr. John W. Blanton, deceased.—Dr. Thomas W. Gardiner, Hopkinsville, has been reappointed a member of the State Board of Control of Charitable Institutions.

The Distillery Slop Question.—The State Board of Health has issued an order that all distilleries feeding slop to cattle must so regulate it that none of the pollution can run into a stream of even the smallest size, provided that stream finally reaches a river or other stream from which water is taken for drinking purposes. A committee from the board has been

appointed to decide how long a time constitutes a reasonable time in which to comply with the rules of the board. Frankfort is the city most vitally interested in the enforcement of this rule as the water from the Kentucky river is contaminated by distilleries located above the city.

MARYLAND

Scarlet Fever Prevalent.—Dr. Warren P. Morrill, Baltimore, superintendent of the Sydenham Hospital for Infectious Diseases, reports that the institution is full and that further cases must be refused. Scarlet fever has been exceedingly prevalent since the first of December and cases of that disease only have been admitted to the institution.—A second outbreak of scarlet fever is reported at Western Maryland College, with six cases. The college was closed on account of the first outbreak, December 1.

Personal.—Among physicians recently elected bank directors are the following: Drs. Charles S. McCauley, J. McPherson Scott, Edward A. Wareham and O. H. William Ragan, Hagerstown.—Dr. Thomas R. Boggs, formerly chief resident physician at Johns Hopkins Hospital, Baltimore, has assumed the duties as physician-in-chief at Bayview Asylum; Dr. Gordon Wilson, as physician-in-chief of the Tuberculosis Hospital; Dr. H. D. Purdon, as physician-in-chief of the Insane Hospital, and Dr. Milton C. Winternitz, as pathologist-in-chief.—Dr. Henry M. Baxley has been appointed assistant house physician, and Drs. Edward E. Mackenzie and Edmund A. Munoz, assistant physicians on the staff of the Baltimore General Dispensary.—Dr. John M. T. Finney has been appointed a member of the Baltimore school board.

MICHIGAN

Honor Dr. Burr.—A dinner was given by the Genesee County Medical Society, December 20, in honor of Dr. Colonel B. Burr, Flint, president of the state medical society, in honor of his recent election and in recognition of his labors in the local organization. About fifty physicians were present.

To Save Medical Building.—The alumni of the University of Michigan are endeavoring to raise \$50,000 to preserve the old medical building, one of the oldest on the campus, as a memorial to the medical department. The amount required will practically reconstruct the building from the inside without changing the outside appearance. The intention is to make the building a medical library and museum.

The Governor's Message.—Governor Osborn, in his inaugural address, notes the multiplication of state boards. There are eight boards whose titles, at least, relate to the public health, and most of these could be incorporated in the State Board of Health. The Board of Examiners of Barbers should, he believes, be abolished, and its work put in the hands of the State Board of Health. He approves of state legislation holding publishers accountable for printing palpably dishonest and fraudulent announcements.

Personal.—Dr. Ross U. Adams, Kalamazoo, was accidentally shot in the left arm in a restaurant in Kalamazoo, December 30.—Dr. Louis Barth, Grand Rapids, was the guest of honor at a birthday dinner, January 3, at which a silver loving-cup, on which the autographs of the donors had been engraved, was presented him.—Drs. James F. Rumer, Davison, and Rowland H. Conner, Saginaw, have resigned from the State Pardon Board.—Dr. Oliver B. Campbell is about to open a private hospital in Ovid.—Dr. William P. Scott, Houghton, has been appointed local physician for the Duluth, South Shore and Atlantic Railroad, vice Dr. Henry W. Jones, resigned.—Dr. James L. Passmore, Saginaw, who has been ill with septicemia, is reported to be convalescent.—Dr. Thaddeus H. Ames, Kalamazoo, has sailed for Europe.

MINNESOTA

Goldthwait in Minnesota.—Dr. Joel E. Goldthwait, Boston, made a short visit to Minnesota last month, delivered a lecture before a union meeting of the Ramsay and Hennepin County Medical Associations on "Our Present Conceptions of Rheumatoid Disease;" gave a clinic at the City Hospital, and was given a supper at the Town and Country Club by Dr. Alexander R. Colvin, St. Paul, the next evening.

Personal.—Dr. Howard Lankester has been appointed health officer of St. Paul, vice Dr. Gustav A. Renz. Dr. Lankester will assume office in March.—Dr. John E. Campbell has been reelected health commissioner of South St. Paul, and Drs. Llewellyn D. Peck, Hastings; James A. Sanford, Farmington; Thomas J. Gaffney, Lakeville, and Ernest W. Hammes, Hampton, physicians for Dakota County.—Dr. James Hynes, Minneapolis, has been appointed physician of Hen-

nepin County, vice Dr. Thomas T. Warham.—Dr. F. F. Westbrook, dean of the faculty of medicine of the University of Minnesota, has resigned as director of laboratories for the State Board of Health.

Health Board Election.—At the annual meeting of the State Board of Health, held in St. Paul, January 10, Dr. William A. Jones, Minneapolis, was elected president, vice Dr. Henry Hutchinson, St. Paul, deceased.—Dr. Burton J. Merrill, Stillwater, vice-president; and Dr. Robert H. Mullen, Minneapolis, head of the state laboratory, vice Dr. Frank F. Westbrook, resigned.—Dr. Henry M. Bracken, the secretary, in an address delivered before the Woman's Club of Minneapolis, January 3, gave an outline of the legislation which the board endorses. This includes a list of proposed legislative acts as follows: "Medical inspection in the public schools of the state; power to condemn unsanitary school buildings; compulsory reporting of tuberculosis; state aid for county sanatoria; clean bill of health required for children from homes where there is tuberculosis; segregation of tuberculous persons living in almshouses; to permit county commissioners to employ visiting nurses; increased salaries for superintendents of state institutions; state dog license law; and control of water and sewerage system."

MISSISSIPPI

Personal.—Dr. Hyman M. Folkes, Biloxi, has leased the Gulf Coast Health Resort on the Gulf of Mexico to Dr. William R. Card, his former associate, for three years. Dr. Folkes will continue to have a surgical service in the institution.—Dr. Robert L. Turner, Meridian, was shot and seriously wounded, December 3, by a nurse who had applied for, and had been refused, the position of superintendent of the institution.—Dr. George H. McNeill has been elected a member of the city council of Newton.

Society Meetings.—The Newton-Neshoba-Winston County Medical Society at its meeting in Newton, elected the following officers: president, Dr. Joseph N. Whittle, Union; secretary-treasurer, Dr. Sidney A. Majure, Dixon, and delegates to the state association, Drs. Inman W. Cooper, Newton; Daniel J. Rush, Philadelphia, and William W. Hickman, Noxapater.—Harrison County Medical Society met at Gulfport and elected the following officers: Dr. George F. Carroll, Biloxi, president; Dr. Duke G. Mohler, Gulfport, vice-president; Dr. Benton Z. Welch, Wool Market, secretary-treasurer; Dr. Hyman M. Folkes, Biloxi, censor; and Drs. Edward C. Parker, Gulfport, and Walter H. Rowan, Wiggins, delegates to the state medical association.—At the annual meeting of Jefferson County Medical Society, held in Fayette, Dr. John C. McNair, Fayette, was elected president; Dr. Colon L. Simmons, McBride, vice-president, and Dr. John H. Carradine, Fayette, secretary-treasurer.—Warren County Medical Association, at its meeting in Vicksburg, January 10, elected the following officers: president, Dr. Hollie B. Wilson; vice-president, Dr. Charles E. Edwards, Jr.; secretary-treasurer, Dr. Ewing F. Howard; censor, Dr. George Y. Hicks, and delegate to the state association, Dr. William B. Dougherty, all of Vicksburg.

MISSOURI

Building for Physicians.—A thirteen-story building is being constructed in Kansas City at a cost of \$600,000. The building is intended especially for the use of physicians and dentists, and will be ready for occupancy in the summer.

Antituberculosis Society Election.—At the annual meeting of the Buchanan County Society for the Relief and Prevention of Tuberculosis, held in St. Joseph, Dr. Oliver C. Gebhart was reelected secretary-treasurer, and Drs. Daniel Morton and Emmett S. Ballard, directors, all of St. Joseph.

Personal.—Dr. Addison M. Harrison, Lees Summit, has been appointed superintendent and physician of the Jackson County Home, vice Dr. G. Cleveland Hall, Lees Summit.—Dr. Alice Graham, Kansas City, superintendent of Mercy Hospital for Crippled Children, has taken a vacation for one year on account of ill health and has started for California.—Dr. Justin W. Lampson, superintendent of State Hospital No. 3, Nevada, has resigned on account of ill health and will return to his home in Neosho.—Dr. Michael R. Balliet, Pleasant Hill, was run over by a passenger train, January 10, sustaining injuries to the legs which necessitated amputation at the ankles.

Half a Million for Charity Hospital.—At a meeting of the congregation of the Independence Boulevard Christian Church, Kansas City, January 9, \$519,000 was donated for a non-sectarian charity hospital. Of this, \$400,000 is a conditional gift of R. A. Long, distributed as follows: \$200,000 for

grounds and initial buildings, provided \$150,000 for endowment is raised on or before April 1; for years 1914 to 1917, inclusive, investment of \$50,000 a year in additional improvements and equipment, provided there is raised from other sources an average of \$62,500 a year. Among the principal contributors to the fund are Dr. William E. Minor, Kansas City, \$20,000; Dr. John Bryant, Independence, \$5,000; Dr. Harry H. Temple, Kansas City, \$2,500, and Dr. Jabez N. Jackson, Kansas City, \$1,000.

St. Louis

Alumni Dine.—The annual banquet of the Medical Society of the City Hospital Alumni was held January 5, at which the following officers, elected at the annual meeting, December 1, were installed: president, Dr. William H. Luedde; vice-president, Dr. Louis J. Oatman; secretary, Dr. Frederick C. Simon, and treasurer, Dr. Percy H. Swahlen.

Physicians Charged with Withholding Reports.—Suit has been entered against six physicians charged with failing to report cases of contagious disease.—For failure to report an alleged case of chicken-pox, Dr. Allie B. Wilburn is reported to have been fined \$25 and costs, December 30. Dr. Wilburn declared the case one of urticaria and filed an appeal.

Personal.—Dr. Paul Y. Tupper, while attempting to cross the Mississippi River at Elsberry, broke through the ice and narrowly escaped drowning.—Dr. Edgar M. Senseney drove his automobile over a 40-foot sloping embankment into a ditch, December 25, but fortunately escaped injury.—Dr. F. E. Guibor, mayor of Maplewood, is ill with diphtheria.

Dr. Hare in St. Louis.—The Jefferson Medical College Alumni Society of St. Louis will hold its annual banquet January 28. Dr. Hobart Amory Hare, Philadelphia, will be the principal speaker. Dr. Hare will also address the St. Louis Medical Society on the same evening on "The Bearing of Old and New Facts on Our Conceptions of Cardiovascular Disease."—The Pennsylvania Society of St. Louis will hold its annual dinner, January 27, at which Dr. Hare will be present.

NEW YORK

In Memory of MacDonald.—In honor of the late Dr. Willis Goss MacDonald, Albany, it has been decided to erect a permanent memorial in the form of a laboratory building for scientific research to be a part of the equipment of the Albany Medical College in its new location.

Infantile Paralysis.—In the investigation of this disease in the state the State Health Department has secured the aid of the federal government and Passed Assistant Surgeon W. H. Frost of Washington has been detailed to investigate and make a report. Dr. Frost recently conducted the investigation of this disease for the government in Iowa.

In Memory of Pioneer Women Physicians.—The Woman's Medical Association of New York will meet on January 25 at 8:30 p. m. at the Academy of Medicine to honor the memory of Dr. Elizabeth Blackwell and Dr. Emily Blackwell. Addresses will be delivered by Drs. Stephen Smith, Abraham Jacobi, William H. Welch, William M. Polk, Dr. Emma B. Cuthbertson and Miss Alice Stone Blackwell.

Personal.—At a meeting of the managers of the New York State Hospital for the Care of Crippled and Deformed Children, West Haverstraw, January 10, Dr. John Joseph Nutt, New York City, was elected surgeon-in-chief of the hospital, vice Dr. Newton M. Shaffer, New York City, resigned, to become chairman of the executive committee of the board of managers.—Dr. William B. May, Buffalo, has been appointed director of the division of communicable diseases of the State Board of Health.—Dr. Theodore C. Janeway, for eight years physician of the City Hospital, Blackwell's Island, has resigned.

Carnegie Laboratory Anniversary.—New York University celebrated the completion of the first twenty-five years of the work of the Carnegie Laboratory and the formal opening of the Carnegie Laboratory extension to which Mr. Carnegie contributed \$75,000. Among the speakers were Drs. William H. Welch, Hermann M. Biggs and Jerome D. Greene. Dr. Egbert Lefevre, dean of the University and Bellevue Medical College, on behalf of the college, presented Mr. Carnegie with four volumes containing researches which have been published by members of the staff during the last few years. Mr. Carnegie intimated that an additional benefaction might be had for the asking. The new laboratory is six stories high and occupies a lot 25 by 100 feet.

OHIO

For Study of Bacteria.—The city council of Toledo has appropriated \$1,000 for a bacteriologic outfit for the city health department.

Medical College Building Burns.—Fire, caused by an overheated furnace, completely destroyed the Toledo Medical College building, January 8. The loss is estimated at \$25,000.

Personal.—Dr. James S. Berry, Peebles, is reported to be critically ill.—Dr. Edward W. Misamore, Cygnet, has been appointed coroner of Wood County, vice Dr. Dwight R. Canfield, Perrysburg.—Dr. Joseph W. Chetwynd, for four years an assistant physician at the Massillon State Hospital, has resigned and will practice in East Liverpool.—Dr. Ada Ford has resigned as assistant physician in the Athens State Hospital and will locate in Mansfield.

State Board Election.—At the annual meeting of the Ohio State Board of Medical Registration and Examination, held in Columbus, January 3, Dr. Sylvester M. Sherman, Columbus, was reelected president and treasurer; Dr. James A. Duncan, Toledo, vice-president, and Dr. George H. Matson, Columbus, secretary. A resolution was adopted that all applicants for reciprocity certificates must be bona fide residents or recent graduates of colleges in states from which the applicants come, and that they must make declaration of their intention to become residents of Ohio.

Medical Teachers Convene.—At the sixth annual meeting of the Ohio Association of Medical Teachers, held in Columbus, December 27, a number of interesting papers were read and discussed. At the evening session the association adopted a resolution that the State Board of Medical Examination and Registration be requested to join with the Ohio State Medical Teachers Association and the Ohio College Association in petitioning the state legislature to pass a law requiring two years of work in a college of liberal arts as preliminary to entrance into a medical college. Starling-Ohio Medical College gave a banquet in honor of the association, following which President William Oxley Thompson, of the Ohio State University, delivered an address on "Ethics of the Profession." The following officers were elected: president, Dr. Kennon Dunham, University of Cincinnati, Medical Department; vice-president, Dr. William D. Inglis, Starling-Ohio Medical College, Columbus; secretary, Dr. Elmer I. McKesson, Toledo University Medical College; treasurer, Dr. Charles W. McGavran, Starling-Ohio Medical College, Columbus, and executive committee, Drs. F. C. Waite, Western Reserve University Medical Department, Cleveland; Lyman Watkins, Eclectic Medical College, Cincinnati; F. H. Staples, Cleveland-Pulte Homeopathic Medical College, Cleveland; James U. Barnhill, Starling-Ohio Medical College, Columbus, and E. Otis Smith, University of Cincinnati Medical Department.

Cincinnati

Playground for Children's Hospital.—The Episcopal Hospital for Children has been presented by Mrs. Lars Anderson with a lot 65 by 250 feet, adjoining the hospital property, and this will be used as a playground for the children.

Personal.—Dr. William M. Withrow has been appointed a member of the Union Board of High Schools and trustee of the Woodward High School.—Dr. William G. Strietmann has been appointed assistant health officer.—Dr. Stephen B. Marvin has been reelected president of the board of education.—Dr. Daniel M. Denman has been elected district physician, vice Dr. William T. Lindsay, resigned.—Dr. William W. Bailey has been appointed district physician, vice Dr. Arthur Vos, resigned.—Dr. Christian R. Holmes has been called on to act as advisory expert in the preparation of plans for the new Louisville Hospital.

Academy Election.—At the annual meeting of the Cincinnati Academy of Medicine, January 9, the following officers were elected: president, Dr. William D. Haines; vice-presidents, Drs. J. Ambrose Johnson and Robert C. Jones; secretary, Dr. E. Otis Smith; treasurer, Dr. Alexander G. Drury; librarian, Dr. Arch I. Carson; trustee, Dr. E. Gustav Zinke; censor, Dr. Albert H. Freiberg; delegates to the state association, Drs. George Strohbach and William Gillespie; alternates, Drs. Samuel Iglauer and John H. Landis, and member of auxiliary committee on public policy and legislation, Dr. Charles A. L. Reed.

PENNSYLVANIA

Philadelphia

Memorial to Founder of the University Medical Department.—The school of medicine, founded in this city by Dr. John Morgan, eventually became the Medical Department of the University of Pennsylvania, known to be the first medical

school in this country. It has been proposed to erect a memorial to Dr. Morgan in which his remains may be laid. A meeting was held at the office of Provost Smith, January 13, at which a circular was framed which will be sent out in a short time.

Antitoxin Reduces Diphtheria Mortality.—According to statistics prepared by Dr. Andrew A. Cairns, chief medical inspector of the Bureau of Health, it is shown that prior to 1896, the death-rate from diphtheria was more than 30 per cent., but that since the use of the antitoxin became general, the death-rate has never exceeded 20 per cent. In 1909, it was 13.2 per cent. and in the year just closed it was 12.93 per cent. The figures for 1910, which have just been completed show 3,804 cases of diphtheria reported with 492 deaths. In 1909, there were 2,329 patients in the Municipal Hospital, of whom 243 died, a percentage of 10.43, while last year 2,235 patients were taken to the city institution, where 203, or 9.08 per cent, died.

FOREIGN NEWS

International Congress for Psychiatry.—The next international congress for psychiatry is to be held at Moscow, Russia, in 1912.

Professional X-Ray Injury.—Dr. Fischer, chief of the Roentgenologic service at the general hospital at Copenhagen, has had two fingers of his left hand amputated on account of Roentgen-ray ulceration.

Industrial Diseases.—Italy has taken the lead in inaugurating a clinic especially for study and treatment of occupational affections, as already mentioned. It is at Milan, but five other Italian cities are giving courses of lectures on industrial diseases and are training specialists in this new branch of medical science. The third international congress on prevention and treatment of industrial diseases is to be held at Vienna in 1914.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 7, 1911.

Lead Poisoning from Soda Water

An inquest has been held on a physician's wife who died at Scarborough, Yorkshire, from lead poisoning due to drinking contaminated sodawater; she had been in the habit of drinking the contents of about two syphons weekly. Evidence was given that the Scarborough water-supply contained no trace of lead, but that the contents of three syphons of sodawater supplied to the deceased, of which she had partly used one, contained lead in the following proportions: In the last there was lead in the proportion of 1/16 grain per gallon, in another the same amount, and in the third 1/20 grain per gallon. The taps of the syphon were made of block tin and contained lead. Drinking water which contains lead in the proportion of more than 1/50 grain per gallon is not considered fit for use. On the other hand, the saloon proprietor who supplied the syphons gave evidence that he supplied many families and used three syphons a week himself and had never known of any ill effects.

Schools for Mothers

A most useful institution of recent development is the school for mothers. Most schools have been established within the last three years. They have arisen mainly for the purpose of diminishing the high infant mortality which prevails, a purpose intensified by disquiet at the declining birth-rate. Ignorance of infant needs is prevalent among a large proportion of the mothers of the working class, who during adolescence have been engaged in industrial work and therefore have had little experience of domestic life. The essential of a school for mothers is a physician, or at least a nurse, from whom instruction and advice are obtainable and to whom the infant is regularly taken for inspection. Around this central notion may cluster many other activities—home visiting, classes in hygiene, cookery, dress-cutting, provision of dinners for expectant and nursing mothers, provident clubs, etc. The treatment of sick infants is beyond the scope of the school; the mother is referred to a physician, dispensary, or other agency, according to the circumstances of the case. Many schools are administered by societies specially formed for the purpose. In several cases existing health societies have taken up this branch of work. Thus at Birmingham the work is carried on by a maternity hospital among the women who live near enough to attend with their infants. A well-conducted school endeavors to secure the attendance of its members once in two weeks, at least for the inspection of the

infants. This "consultation" gives opportunity for pointed instruction. In addition there are at many places regular classes for cookery, hygiene, infant care, sewing, knitting, etc. The benefit of the instruction is diffused beyond the members of the school, for mothers who have been instructed become centers of enlightenment for their neighbors. Leaflets of instruction are also frequently distributed. Some schools have a large number of members. Thus 765 mothers attend the Birmingham school, 600 the Kensington, 400 the Leeds. Systematic home visiting is always combined with class-room instruction. Much that is taught in a class-room seems unreal to the poorer and sometimes the well-to-do classes, and it is necessary to apply it in the actual conditions of home life to make it a vital subject for them. There is also systematic provision for looking up mothers who fail to attend regularly at consultations. At a few places, in all cases of childbirth in the district in other than the well-to-do classes the mothers are visited for some time. In some cases the school is run by the municipality; in others, by private philanthropic societies, which occasionally are assisted by municipal grants. In some places the school is practically a branch of the public health work and is superintended by the health officer and the municipal health visitor. In other places voluntary helpers visit under the oversight of public health authority. The salaried officers employed by the schools are few, several schools have no paid officials at all; few have paid superintendents or health visitors. Excluding municipal schools, in only two instances are payments made to physicians. In some cases private schools have the services of health visitors in the employ of the local health authority. Voluntary workers are numerous, there are twenty or more in as many institutions. As many as 300 give their services to the Glasgow Corporation Infant Consultations, a number which is not approached at any other place. Records are kept by the schools showing the weight and general condition of the child, and a card is given to the mother containing directions. Most schools restrict their work to children under the age of 12 months. Adequate data do not yet exist to show the results achieved, but in many reports reference is made to improved conditions in the neighborhood in which the work is carried on, and to a lower death-rate among the infants who are brought to the school than among infants in the district generally.

The Journal of Meat, Milk and Hygiene

Specialization in medical journalism has shown a new development in the appearance this month of a periodical with the above title, which is also described as "A Monthly Review Devoted to Securing an Efficient Supply of Meat and Milk." The first number gives promise of a high standard. There are three original articles: "Meat Poisoning; Its Nature, Causation and Prevention," by Professor McWeeney of Dublin; "Actinomycosis in Cows' Udders," by J. H. Patterson, bacteriologist; "The Public Slaughterhouse System in Scotland," by Dr. Dittmar, Medical Inspector. Notes and abstracts follow on such subjects as "Phlegmatous Inflammation of the Stomach of a Pig," "Cysticercus Bovis," "Worm Nests in Cattle Due to the *Filaria Gibsoni*" and "Microbes Isolated from an Egg." Under Annotations "A Uniform System of Meat Inspection," "Foreign Meat Regulations" and other topics are discussed.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 6, 1911.

Salvarsan (606) In Syphilitic and Parasyphilitic Nervous Disease

On January 3, at the Académie de médecine, Dr. Weiss read a communication from Dr. Ehlers of Copenhagen, reporting the case of a general paralytic, who on August 10 received an injection of 0.05 cc. of salvarsan. Some days afterward, trembling and crises of perspiration, loss of strength and fever occurred. Five days after the injection the patient died of cardiac paralysis. Autopsy revealed only parenchymatous degeneration of all organs. Dr. Ehlers does not hesitate to attribute the death to arsenical poisoning. [This fatality was mentioned in THE JOURNAL, Nov. 26, 1910, p. 1941.]

Following Ehrlich's directions, Dr. Ehlers treated with salvarsan seven syphilitics who had malignant tertiary lesions which were refractory to mercury. These seven cases were followed up after the injection and it was ascertained that the often miraculous improvement obtained in most of these patients is sustained only from eight to fifteen days in severe cases, and as long as a month in others. Among these seven

patients there were relapses, the condition of most being as serious as before the treatment.

Moreover, Dr. Sicard, *agrégé* professor at the Paris medical college, communicated to the Société médicale des hôpitaux the results that he, with Dr. Marcel Bloch, obtained by means of salvarsan on forty-three patients affected with syphilitic or parasyphilitic diseases, such as tabes, general paralysis, cerebrospinal syphilis and syphilitic hemiplegia and paraplegia. From these results, it may be inferred that salvarsan is efficacious in syphilitic nervous diseases, including tabes, only when these are of recent date. In these cases the action of Ehrlich's remedy is superior to that of mercury, not only from the specific point of view, but also because arsenic medication, even in heavy dosage, has not the depressive effect of mercurial medication. On the contrary, among general paralytics treated with salvarsan, even at the first appearance of the signs of the disease, the result was nil, and likewise in long-standing cases of syphilitic hemiplegia and paraplegia.

The technic of choice appears to be intravenous injection, which permits the passage of salvarsan into the cerebrospinal fluid, followed some days later by injections of salvarsan in an oil medium into the gluteal muscles according to the method of Lévy-Bing and Lafay (THE JOURNAL, Dec. 3, 1910, p. 1994).

The Wassermann reaction, contrary to observations in the course of cutaneous and muscular syphilids, is only exceptionally modified after the treatment, even in patients who have received benefit from it.

Limitation of the Number of Liquor Licenses

The Senate has passed, by 156 votes against 59, the first clause of the bill to limit the number of liquor licenses. According to this clause the number of cafés, etc., selling alcoholic liquors or *apéritifs* other than those with a base of wine titrating at less than 23 degrees, to be consumed on the spot, is fixed at three for a commune of 600 inhabitants and under and at one for each 200 inhabitants above this number. A necessary distinction has thereby been established between hygienic and other drinks; the vendors of wine, beer, cider, coffee and tea are not limited; a restriction is placed only on establishments for the sale of alcohol, alcoholic drinks and beverages containing poisonous essences. At present there are in France more than 500,000 places licensed to sell drinks, that is to say, one for each eighty inhabitants or one for each thirty adults.

Glycosuria and Surgical Intervention

At the Académie de Médecine, on December 20, Dr. Bazy read a paper tending to show that glycosuria, even if it does not disappear completely under appropriate treatment, is not a contraindication to operation. Dr. Bazy reports observations on several patients affected with more or less intense glycosuria, who successfully underwent serious operations, such as excision of the tongue, internal urethrotomy, transvesical prostatectomy, exploratory laparotomy, total abdominal hysterectomy. Moreover, an increase in the quantity of sugar in the urine after the operation has been decided on, instead of being a contra-indication, may be really an indication for operation.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 23, 1910.

German Physicians in 1910

According to the medical directory (*Reichsmedizinalkalender*) published by Professor Schwalbe, the number of physicians in Germany last year was 32,294. As according to official statistics Germany has a population of 64,775,000, there are 5.01 physicians to 10,000 inhabitants. The number has increased by 480 over the previous year and the increase in the number of physicians slightly exceeds the increase in population. That in the next few years a relative increase is to be expected, is shown by the fact that the number of medical students has rapidly risen. In the summer of 1905, 6,032; 1906, 6,570; 1907, 7,574; 1908, 8,250; 1909, 9,239; 1910, 11,125. Foreign students are included in these figures and their number has also slowly risen. Also the number of physicians licensed in the last three years has increased. In 1906-07 it was the lowest, 553; the following year it had grown to 829, and in 1908-09, 942 physicians were licensed (*approbiert*). As usual the increase in physicians is most notable in the large cities. Relatively to the population, however, the number of physicians in the large cities has receded somewhat.

The number of licensed women physicians in Germany has undergone a remarkable relative increase. In 1908 there were only 55, in 1909, 69, while at present there are 102; in Berlin alone, there are now 32. The number of women medical students has also remarkably increased. In the winter of 1909-10 there were 371, in the summer of 1910, 512, including the foreigners. The number of specialists is still increasing. In 1906, 6.952=20.2 per cent. of all physicians; in 1910, 7.272=22.40 per cent. The most of these are gynecologists, principally in the large cities; in the second place come the oculists, and, third, specialists in ear, nose and throat. The largest percentage of specialists, is found as in former years in Dresden, 44.2 per cent. The following have over 40 per cent.: Stuttgart, Leipsic, Frankfort a. M., Plauen and Nuremberg; Greater Berlin has only 32.8 per cent. The smallest percentage, 18.5 per cent., is found in Kiel.

Reduction of the Birth-Rate in Prussia

For the entire state of Prussia there has occurred a reduction in the ratio of fertility, that is, in the number of births per 1,000 women capable of child-bearing, between the ages of 15 and 45. This ratio has declined from 174.60, in the quinquennium from 1876-80, to 161.85 for 1896-1900, and 154.83 in the period from 1901-1905. In the cities the ratio has declined from 160.64 to 129.12. In the rural districts, the ratio of fertility for 1876-80 was 182.93, which figure was even exceeded by the rate of 183.06 for 1896-1900 and even the figure for 1901-1905 remained at 178.72, only a little behind the initial ratio. It is the falling birth-rate in the cities which occasions the marked diminution of the general fertility. This phenomenon is especially notable in Berlin and the cities of the province of Brandenburg. The fertility ratio in Berlin sank from 149.21 in 1876-80 to 88.78 in 1901-05, a reduction of more than 40 per cent.

At the same time the ratio in the cities of the province of Brandenburg fell from 169.06 to 109.21. In the cities of Posen, West Prussia and Westphalia, the ratio has been well maintained. The lowest fertility outside of Brandenburg is exhibited by cities in Hesse-Nassau in which the ratio has fallen from 134.27 to 106.23. The country district of Brandenburg shows a marked reduction, from 174.87 to 137.61. Also in Pomerania the ratio has sunk from 185.85 to 171.09, in Saxony from 183.03 to 162.36, and in Hesse-Nassau from 177.67 to 153.60. Schleswig-Holstein and Hanover have lost from 2 to 3 per cent. The other six provinces, however, show a rise of the country fertility, most marked in Westphalia (190.29 to 205.10) and Silesia (181.66 to 192.23).

Marriages

JOHN WILLIAM EKBLAD, M.D., to Miss Elda Downing, both of Scandia, Kan., January 4.

JAMES HAMSON WOLVERTON, M.D., to Miss Ruth Grant, at Balmorhea, Tex., December 25.

WILL DANA SHELBY, M.D., to Miss Elizabeth Carter, both of Canton, China, November, 1910.

CARL C. VOGEL, M.D., Elroy, Wis., to Miss Delia M. Droshos of Milwaukee, Wis., December 24.

JOHN HERR MUSSEY, JR., M.D., to Miss Marguerite Hopkinson, both of Philadelphia, January 7.

SAMUEL PILGRAM GERHARD, M.D., to Miss Laura May Kaufmann, both of Philadelphia, January 12.

HENRY GLOVER LANGWORTHY, M.D., Dubuque, Ia., to Miss Bertha Schmidt, in Chicago, December 29.

GEORGE WASHINGTON MITCHELL, M.D., Peoria, Ill., to Miss Myrtle McKee of South Dakota, January 3.

EDWARD WARWICK PINKHAM, M.D., New York City, to Miss Bessie Leverett Ray of Alton, Ill., January 3.

JAMES ELMER DONNELL, M.D., Cuba City, Wis., to Miss Aruba A. Blades of Dubuque, Ia., December 28.

CHARLES E. RAGAN, M.D., Clinton, Ind., to Miss Evangeline Trotter of Danville, Ind., in Chicago, December 25.

ANDREW LEONARD SKOOG, M.D., Kansas City, Mo., to Miss Anna Belle Gordon of Pueblo, Colo., December 21.

THOMAS VAUGHAN CRANDALL, M.D., Philadelphia, to Miss Clara L. Dorr of Dorchester, Mass., December 31.

HENRY ARTHUR GEITZ, M.D., to Mrs. Helen Marie Steer, both of St. Louis, at Rockaway Park, Long Island, N. Y., January 2.

Deaths

Charles John Kipp, one of the most prominent specialists on diseases of the eye and ear of the United States, died at his home in Newark, N. J., January 13, aged 72. He was a native of Germany, graduated from the College of Physicians, New York City, in 1861; entered the army a year later as acting assistant surgeon; in 1863, he became an assistant surgeon, U. S. V., major and surgeon in 1864, and was brevetted lieutenant colonel in 1865, resigning from the medical corps of the army in 1868. He was a member of the American Medical Association, and second vice-president in 1909; formerly president, and later chairman of the board of trustees of the Medical Society of New Jersey; president of the American Ophthalmological Society in 1907, and of the American Otological Society in 1908. He had served as surgeon to the Newark Eye and Ear Infirmary since 1880, as president of the board of managers of the New Jersey Sanatorium for Tuberculous Diseases from 1901 to 1906, and as consulting surgeon to many hospitals. Dr. Kipp was the author of numerous articles in medical journals and of sections in medical encyclopedias on subjects connected with his specialty.

Horace Smith Fuller, M.D. College of Physicians and Surgeons, New York City, 1865; for many years medical examiner of Hartford, Conn.; died suddenly in that city, December 30, from heart disease, aged 75. Immediately after graduation, Dr. Fuller became an acting assistant surgeon in the United States Army and continued on duty until August, 1865. He was for many years a member of the American Medical Association. From 1877 to 1884 he served as coroner and chairman of the health committee of Hartford and thereafter as medical examiner under the new law. For more than twenty-five years he was visiting physician and surgeon at the Hartford Hospital and later consulting physician and surgeon to the hospital. He was a member of the State Board of Medical Examiners since its inception, and for four years its president. In 1879 and 1880 he was surgeon-general of the state, and from 1873 to 1885 a member of the local board of pension examiners. On January 3, 1910, at the annual meeting of the Hartford Medical Society, Dr. Fuller was presented with the Gurdon W. Russell loving-cup which is retained by the dean of the profession in the city.

Darwin Colvin, M.D. Geneva (N. Y.) Medical College, 1844; a member of the American Medical Association, and second vice-president in 1887; one of the founders of the New York State Medical Association and its president in 1896; president of the Wayne County Medical Society, and Medical Association of Central New York in 1878; president of the village of Clyde from 1865 to 1867, and 1877; health officer and member of the board of education; a surgeon of volunteers during the Civil War; surgeon in the National Guard in 1866 and 1867; died at his home in Clyde, January 9, aged 88.

John Spottswood Wellford, M.D. University of Pennsylvania, 1846; one of the oldest members of the Richmond Academy of Medicine; a surgeon in the Confederate service during the Civil War; for nearly half a century professor of diseases of women and children in the Medical College of Virginia, Richmond, and later emeritus professor; died at his home in Richmond, January 1, aged 85. At a meeting of the faculty of the college of which he was so long a member, resolutions of sorrow and sympathy were unanimously adopted.

Charles James Curran, M.D. New York University, New York City, 1882; a member of the North Berkshire Medical Society; a member of the Board of Health of North Adams, Mass., from 1881 to 1887; town physician in 1887 and 1888; for several years a member of the local pension board; from 1891 to 1896, a member of the State Board of Lunacy and Charity; city physician in 1905 and 1906; a member of the staff of the North Adams Hospital; died at his home December 30, from cerebral hemorrhage, aged 49.

John Bartley Fleming, M.D. Washington University, St. Louis, 1899; a member of the Missouri State Medical Association; secretary of the Lawrence-Stone County Medical Society; local surgeon at Aurora for the Missouri Pacific Railway; consulting physician to the Missouri State Sanatorium for Incipient Tuberculosis; died in the Deaconess Hospital, St. Louis, January 6, a week after an operation for appendicitis, aged 34.

Oliver A. Rea, M.D. Hospital College of Medicine, Louisville, Ky., 1883; a member of the American Medical Association, and for three years president of the Marshall County Medical Society; surgeon to the Culver (Ind.) Military

Academy, and formerly president of the Plymouth (Ind.) Pension Board; a veteran of the Civil War; died in Rochester, Ind., recently, after a surgical operation, and was buried January 9, aged 67.

Oscar Samuel Roberts, M.D. Medical College of Vermont, Burlington, 1864; University of Pennsylvania, Philadelphia, 1869; medical cadet during the Civil War; a member of the American Medical Association; consulting physician to the House of Mercy Hospital, Pittsfield, Mass.; secretary of the local pension board since 1884, and for several years a member of the Pittsfield Board of Health; died at his home, January 4, aged 73.

Rufus Chambers, M.D. University of Louisville, Ky., 1882; Washington University, St. Louis, 1884; a member of the American Medical Association; lecturer on principles of surgery in the Medical Department of Fort Worth University; city physician of Fort Worth from 1901 to 1905, and thereafter physician of Tarrant County; died in St. Joseph's Infirmary, Fort Worth, December 29, from pneumonia, aged 50.

Cornelius Cole Bradley, M.D. College of Physicians and Surgeons, New York City, 1885; a member of the American Medical Association; attending ophthalmologist to St. Joseph's Orphan Asylum and St. Joseph's Institute, and consulting ophthalmologist to the Home for Incurables, New York City; died at his home in New Rochelle, N. Y., December 30, from septic endocarditis, aged 48.

Edward Hamilton Trickle, M.D. Miami Medical College, Cincinnati, 1870; a member of the Ohio State Medical Association, and formerly president of the Washington County Medical Society; a veteran of the Civil War; for twenty years local pension examining surgeon; local surgeon of the M. C. and C. Railroad; died at his home in Cutler, January 8, from pneumonia, aged 74.

George Roberts Moore (years of practice); of Three Rivers, Mich.; a member of the Michigan State Association of Railway Surgeons; at one time division surgeon for the Chicago, Milwaukee and St. Paul Railway at Oxford Junction, Ia.; died at a hospital in Omaha, December 21, from pneumonia, following a compound fracture of the tibia caused by a runaway accident, aged 75.

William H. Krause, M.D. New York Homeopathic Medical College, New York City, 1873; consulting physician to the Hahnemann Hospital, New York City; a surgeon in the German service during the Austro-Prussian and Franco-Prussian wars; attending physician to the Bond Street Dispensary and examiner in lunacy; died at his home, January 7, from nephritis, aged 69.

William F. Davis, M.D. Jefferson Medical College, 1876; a member of the American Medical Association; for three years resident physician of the Charity Hospital, Philadelphia; a member of the local pension examining board of Dover, Del.; died in Jefferson Hospital, Philadelphia, December 31, aged 65, as the result of injuries received nine days before by the kick of a horse.

Edwin Lacy Gibson, M.D. University of Maryland, Baltimore, 1894; a member of the American Medical Association; physician to the Staunton (Va.) Military Academy; a member of the city council and local surgeon to the Baltimore and Ohio Railroad; died at his home, January 6, from typhoid fever, aged 41.

James Preston Watkins, M.D. College of Physicians and Surgeons, Baltimore, 1897; a member of the American Medical Association, and president of the council of the Chatahoochee Valley Medical and Surgical Association; died at his home in Opelika, Ala., August 18, from nephritis, aged 41.

James B. Tennell, M.D. Eclectic College of Physicians and Surgeons, Indianapolis, 1893; of Piqua, O.; a practitioner for fifty-two years; and a member of the Ohio State Medical Association; died in the Cass County Infirmary, Logansport, Ind., December 31, from mental disease, aged 77.

John Abbott Prince, M.D. University of Michigan, Ann Arbor, 1887; a member of the American Medical Association; one of the proprietors of the David Prince Sanitarium, Springfield, Ill.; died suddenly at his home, January 1, from heart disease, aged 47.

Martin Van Buren Lonergan, M.D. College of Medicine and Surgery, Keokuk, Ia., 1877; a member of the Illinois State Medical Society; of Decatur; died from suffocation in a fire that destroyed the St. James Hotel, Pana, December 31, aged 58.

Walter C. Fulkerson, M.D. Kansas City (Mo.) Medical College, 1891; a member of the American Medical Association; for five years surgeon of the Denver, Enid and Gulf Railway

at Marshall, Okla.; died in Guthrie, Okla., November 2, from dysentery, aged 41.

Charles Heil Hunsicker, M.D. Jefferson Medical College, 1900; a member of the American Medical Association; and associate in genito-urinary surgery Jefferson Medical College; died in Philadelphia, January 8, from carcinoma of the intestines, aged 34.

Robert J. R. Tilton (license, thirty-nine years practice, 1893); a member of the Kentucky State Medical Association, and for several years president of the Nicholas County Medical Society; died at his home in Carlisle, January 6, aged 79.

William J. Hodges, M.D. University of Louisville, Ky., 1890; a member of the American Medical Association; of Pineville, Ky.; died January 4, aged 43, as the result of injuries sustained by being struck by an L. and N. train a week before.

Willis Hall Vittum, M.D. Tulane University, New Orleans, 1875; a member of the American Medical Association; a nose and throat specialist of St. Paul; died suddenly in his office in that city, December 29, from cerebral hemorrhage, aged 61.

Monmonier Rowe, M.D. College of Physicians and Surgeons, Baltimore, 1881; major of the First Battalion of the Fourth Infantry, Maryland National Guard; died suddenly at his home in Baltimore, December 31, from nephritis, aged 51.

James Cutler, M.D. Starling Medical College, Columbus, O., 1857; a veteran of the Mexican and Civil wars; local U. S. pension examining surgeon; died at his home in Richwood, O., December 19, from cancer of the stomach, aged 79.

Horace J. McDonald, M.D. American University of Pennsylvania, Philadelphia, 1876; a veteran of the Civil War; at one time pension examining surgeon; died at his home in LaCrosse, Wis., December 31, from cerebral hemorrhage, aged 71.

Frank Avery Coates, M.D. College of Physicians and Surgeons, New York City, 1875; a member of the American Medical Association; died at his home in Mystic, Conn., September 11, from cancer of the throat, aged 59.

Jefferson B. Searce, M.D. Jefferson Medical College, 1858; a member of the Ohio State Medical Association and Chillicothe Academy of Medicine; died at his home in Chillicothe, January 8, from angina pectoris, aged 73.

Harold D. Fitch, M.D. Miami Medical College, Cincinnati, 1908; of Cincinnati; a member of the Ohio State Medical Association; died in the Good Samaritan Hospital, Cincinnati, January 3, from pneumonia, aged 26.

George Valentine Hann, M.D. New York University, New York City, 1851; a member of the Medical Society of the State of New York; died at his home in New York City, September 20, from diabetes, aged 65.

Samuel Alonzo Davis, M.D. Harvard Medical School, 1862; a member of the Massachusetts Medical Society; a veteran of the Civil War; died at his home, Winter Hill, Boston, January 3, from pneumonia, aged 73.

Frank Henry Haskins, M.D. Harvard Medical School, 1899; a member of the Massachusetts Medical Society; died at the home of his mother in Springfield, December 30, from carcinoma of the liver, aged 39.

Albini Joseph W. Dufault, M.D. Laval University, Quebec, 1905; a member of the Union Médicale of Fall River, Mass.; died at his home in Fall River, September 23, from multiple infectious arthritis, aged 28.

George Harvey Doane, M.D. College of Physicians and Surgeons, Chicago, 1908; a member of the American Medical Association; died at his home in O'Fallon, Ill., January 6, from pneumonia, aged 27.

Frederick Larkin, M.D. Central Medical College of New York, Syracuse (Hon.); for more than sixty-two years a practitioner; died at his home in Randolph, N. Y., November 21, from paralysis, aged 97.

Edward Emmitt Haworth, M.D. Kentucky School of Medicine, Louisville, 1894; a member of the Indiana State Medical Association; died at his home in Claypool, January 2, from anemia, aged 44.

Benjamin Bently Bacon, M.D. Eclectic Medical Institute, Cincinnati, 1858; for nearly sixty years a practitioner; died at the home of his son in Leavenworth, December 9, from heart disease, aged 85.

John L. Hale (license, thirty years of practice, Kentucky, 1896); of Wickliffe, Ky.; formerly a member of the American Medical Association; died in Cairo, Ill., December 30, from cancer, aged 75.

Alfred M. Critz, M.D. Indiana Medical College, Indianapolis, 1877; a resident of Ballard, Wash., for eighteen years; died in that city, December 19, from cerebral hemorrhage, aged 58.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

FORMUROL

Report of the Council on Pharmacy and Chemistry

Formurol, Citrocoll and Aspirophen were submitted to the Council by the Cellarius Company of San Francisco. The manufacturers having failed to substantiate the claims they make for these products, the Council has voted that the preparations be refused recognition. The Council also authorized the publication of the following report, which deals particularly with one of the preparations—Formurol.

W. A. PUCKNER, Secretary.

Formurol is the product of the Chemische Fabrik Falkenberg, Falkenberg-Gruenau, near Berlin, Germany. The Cellarius Company, San Francisco, acting as selling agents for the United States, submitted Formurol (along with Aspirophen and Citrocoll, also made by the same firm) to the Council, with the statement that it is "hexamethylenetetramin-sodium-citrate," and that it has the following composition: " $C_6H_{12}O_7Na.C_6H_{12}N_4$."

Zernik,¹ who examined these products, reported that Aspirophen, Citrocoll and Formurol do not have the composition that is claimed for them by the Fabrik Falkenberg. Formurol, he states, is not a definite chemical compound, but a mixture of hexamethylenamin and sodium citrate. The agents were advised of this fact by the Council and were asked to submit evidence to substantiate their claims. No such evidence was submitted.

Since a compound having the composition that is claimed for Formurol is theoretically possible, the Council requested that the product be examined in the Association Laboratory to determine whether it still was the simple mixture reported by Zernik, or whether, perhaps, it now possessed the formula claimed for it. The following report was made by the Association chemists:

Formurol, as submitted to the Council, was in the form of tablets weighing about 1 gm. each and appeared to be composed of a fine white substance interspersed with some transparent particles. The tablets were readily soluble in water, were odorless and possessed a slightly acid taste. The aqueous solution responded to tests for hexamethylenamin, citrate and sodium. To determine whether hexamethylenamin was present in the free or the combined state, the method of Zernik was employed. This consists in the extraction of Formurol with chloroform, which dissolves out hexamethylenamin, leaving insoluble sodium citrate. As the use of the solvent, chloroform, would seem to preclude decomposition of such a hypothetical compound as "hexamethylenamin-sodium-citrate," the extraction of hexamethylenamin from Formurol may be taken to demonstrate its presence in the free state.

That Formurol is not a compound of hexamethylenamin, but a mixture of hexamethylenamin and sodium citrate, was further indicated by the appearance of the crushed tablets described above. Further, under the low-power microscope the powder was found to be composed of transparent crystals and white opaque particles which appeared to be masses of minute crystals. When treated with chloroform the transparent crystals dissolved, leaving the white masses intact, demonstrating the presence of two distinct substances, one soluble and the other insoluble in chloroform. It having been demonstrated that the residue obtained by evaporation of chloroform could not be weighed as hexamethylenamin, due to enclosed chloroform, the amount of this substance in the residue was determined.

The method used has been described in the Report of the Chemical Laboratory of the American Medical Association, Vol. I, p. 55, and depends on the decomposition of hexamethylenamin by means of sulphuric acid to form ammonium sulphate and formaldehyd. From this solution the ammonia is liberated, distilled and determined² by titration and from the ammonia found the amount of hexamethylenamin is calculated. By this method Formurol was found to contain (a) 35.42 per cent. and (b) 35.32 per cent., or an average of 35.37 per cent. hexamethylenamin. The residue insoluble in chloroform was shown to consist essentially of disodium hydrogen citrate by determining³ the amount of sodium (Na) contained in Formurol. The percentage of sodium calculated from the amount of sodium sulphate found was (a) 11.38 per cent. and (b) 11.20 per cent., or an average of 11.29 per cent., equivalent to 62.50 per cent. disodium hydrogen citrate.

As a check on this determination, the amount of material contained in Formurol which is insoluble in chloroform was determined.⁴ It was found to be (a) 63.23 per cent. and (b) 63.49 per cent., making an average of 63.36 per cent., and thus agreeing fairly well with the results obtained when the sodium content was assumed to be disodium hydrogen citrate. From this analysis it appears that Formurol is not a definite compound of hexamethylenamin and sodium citrate, but instead is a mixture of these substances consisting approximately of hexamethylenamin 35.37 per cent. and sodium acid citrate (disodium hydrogen citrate) 63.36 per cent., practically a mixture of 1 part hexamethylenamin and 2 parts sodium acid citrate. These results agree with those reported by Zernik and show that the product now, as then, is not true to claims.

In view of the findings of the laboratory, it is recommended that Formurol be refused recognition. As the exploitation of well-known remedies under false and misleading names is detrimental to the progress of medicine, it is recommended that publication of this report be authorized.

EDITORIAL NOTE: This report illustrates once more the value of the Council on Pharmacy and Chemistry and the Chemical Laboratory to the medical profession. Before the Council was organized there was no agency to protect the physician's interests in the matter of pharmaceuticals. Under the old régime Formurol would have been heralded as a new "synthetic" of the most approved made-in-Germany type—and the claims would have gone unchallenged. To-day its status is made clear and the profession is informed. Only those who have closely studied the question can realize what a wonderful power for commercial probity the Council has proved. Under the *laissez faire* system of the past, many large pharmaceutical firms gave little attention to the accuracy of the claims made for their products. If the advertising gave good "pulling" results, that was all that was asked or expected. Within the past five years a wonderful change has taken place in this regard, and firms of the better class have so modified their advertising as to make it not only conservative in tone, but to approximate scientific accuracy.

2. Determinations were made, following the details of the method described in the report of the Chemical Laboratory of the American Medical Association, Vol. I, p. 55, with the following results: (a) 1.0769 gm. Formurol yielded an amount of ammonia requiring 10.96 c.c. normal sulphuric acid for neutralization, indicating the presence of 0.3815 gm. or 35.42 per cent. hexamethylenamin. (b) 1.1178 gm. Formurol required 11.36 c.c. normal sulphuric acid, equivalent to 0.3952 gm. or 35.32 per cent. hexamethylenamin, making an average of 35.37 per cent.

3. Sodium was estimated by converting to sodium sulphate in the usual way, with the following results: (a) 1.0319 gm. Formurol yielded 0.3621 gm. sodium sulphate, equivalent to 11.38 per cent. sodium. (b) 0.8783 gm. Formurol yielded 0.3035 gm. sodium sulphate, equivalent to 11.20 per cent. sodium; average, 11.29 per cent., equivalent to 62.50 per cent. disodium citrate ($C_6H_6O_7Na_2 + H_2O$).

4. The matter insoluble in chloroform was determined by weighing Formurol to a tared filter, which had been washed with chloroform and dried at 100 degrees, and percolating with chloroform till the dried filter and contents became constant in weight. By this method (a) 1.0769 gm. Formurol yielded 0.6826 gm. or 63.23 per cent. matter insoluble in chloroform; and (b) 1.1178 gm. Formurol yielded 0.7079 gm. or 63.49 per cent. insoluble matter; average, 63.36 per cent.

5. Therap. d. Gegenw., February, 1909.

¹ Zernik: Arb. a. d. Pharmazeut. Inst. d. Univ. Berlin, 1907, 17 46.

Correspondence

Niemeyer's Pill

To the Editor:—I have long felt certain that the term "Niemeyer's pill" was being erroneously applied to the well-known pill of calomel, squill and digitalis, but while I have availed myself of frequent opportunities to correct students regarding its use I did not think that the matter was sufficiently important to demand public notice until several months ago I found THE JOURNAL of the American Medical Association, I think in its therapeutic department, making the same error. Then it seemed to me time to speak out.

The true Niemeyer's pill was suggested by Felix von Niemeyer about 1886 and 1867 with a view to combating the pyrexia of pulmonary consumption. The following is the language on page 68 of his little classic brochure entitled "Clinical Lectures on Pulmonary Consumption," translated by the New Sydenham Society in 1870:

"Among the remedies which are in many cases successful in reducing the increased production of heat and the temperature of the body, although the original disease continues, digitalis and quinin justly enjoy a great reputation.

"We employ them very frequently in phthisical patients, if we have not succeeded in subduing the pyrexia by the means above alluded to; and pills which contain 1 grain of quinin, $\frac{1}{2}$ grain of digitalis and $\frac{1}{4}$ grain of opium, and of which one is taken four times a day, are one of the most frequent prescriptions of our clinic."

Niemeyer says further:

"At times, when I am much consulted by phthisical patients, I often prescribe these pills three or four times on the same day. In the hospital we discontinue the pills as soon as a marked decrease of the temperature and of the frequency of the pulse is noticeable, and we return to their use as soon as their effect has again disappeared. In my consulting practice I have repeatedly seen that patients quickly learn to judge by their own experience when it is time to discontinue the pills and when to return to their use."

Not every one has made this mistake. Thus, Osler in the seventh edition of his "Practice," section on syphilis, p. 281 says: "If there is ascites, Addison's pill (as it is often called) of calomel, digitalis and squills will be found very useful. Again in the section on diseases of the valves of the heart by Osler and Gibson, vol. 4, p. 268, of "Modern Medicine," we read: "Powdered digitalis is of great service in combination with squills and mercury, 1 grain of each, in the form of the Addison's or Guy's pill." Dr. A. O. J. Kelly in his new book on the "Practice of Medicine," p. 477, also refers to it as Addison's, Guy's or Niemeyer's pill. It is evident that the pill of calomel, squills and digitalis far antedates the time of Niemeyer.

The author who comes nearest to identifying the Niemeyer pill is Clifford Allbutt, who refers to a pill of powdered digitalis leaves and quinin. Dr. Kelly tells me also that Allbutt refers to it as the Leipsic pill.

Let us not forget, the Niemeyer pill is composed of 1 grain of quinin, $\frac{1}{2}$ grain of digitalis and $\frac{1}{4}$ grain of opium, and was prescribed by v. Niemeyer for the fever of pulmonary tuberculosis, and if any name is applied to the pill of calomel, digitalis and squills it should be that of Addison or of Guy.

JAMES TYSON, Philadelphia.

Medical Milk Commissions

To the Editor:—Permit me to congratulate you on the publication of the editorial "Clean Milk Production" (THE JOURNAL, January 7, p. 48).

I have one regret—that the excellent summary of the subject did not mention the American Association of Medical Milk Commissions, what it stands for and the good work it is doing in spreading this gospel of clean milk throughout the country. Largely through the efforts of this organization, the number of component milk commissions has increased in number threefold in three years, and now number more than sixty in widely scattered parts of the United States and Canada.

The work of members of milk commissions and of the American Association is altruistic in its best meaning. The national body needs financial assistance to spread this gospel of clean milk broadcast, to have a competent representative in the field constantly to present the cause before medical associations and assist in the formation of medical milk commissions; for it is the "moral influence of milk commissions that has been a large factor in bringing about an improved general supply."

The Association of Milk Commissions feels that this work should receive the active support of the American Medical Association, and it is hoped that eventually its active cooperation can be secured. In no way can the conservation of the infant population of the country be secured so effectually as by making clean milk a possibility in every community.

HENRY ENOS TULEY, Louisville, Ky.

Chairman of the Council.

Sodium Cacodylate in Syphilis

To the Editor:—Dr. A. T. Caffrey becomes enthusiastic over sodium cacodylate in syphilis (THE JOURNAL, Dec. 24, 1910, p. 2211), because by this drug he has healed (?) a syphilitic lesion of the lip in twenty days, though the patient still possesses evidences of a hard chancre and is still under treatment.

In our cases at Dr. F. Bierhoff's clinic, luetic sores on lip and elsewhere heal very rapidly under the action of the soluble salts of mercury (oxycyanid), rarely consuming a larger period than two weeks, intramuscular injections being used in ascending dosage and patient seen every other day.

It is inconceivable that a patient with such a strong arsenical breath as described by Dr. Caffrey should display no disagreeable symptoms. To my mind, it is a classical symptom of poisoning—it is well to remember that arsenical poisoning is a very insidious process and a persistence of arsenic under the circumstances may lead to unpleasant results. It is respectfully suggested that the healing over of an initial lesion (and this in reality is the only apparent result of the treatment), is no evidence of a cure of the syphilis, and that it might be of scientific interest to give the result of an ophthalmoscopic examination, a test of renal functions, and a Wassermann blood examination, which last might disappoint Dr. Caffrey keenly. In conclusion, I ask: Wherein lie the advantages over the mercurial treatment, as compared by scientific investigation, in view of the apparent dangers of cacodylate of sodium?

L. L. MICHEL, New York City.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CENTIGRADE AND FAHRENHEIT SCALES

To the Editor:—In THE JOURNAL, Jan. 7, 1911, p. 81, is an abstract of an article by Japha in which "Rhythmic Compression of the Heart for Apparently Moribund Children" is treated and "temperature of 43.3° C." is given as corresponding to 110° F. This is incorrect, and should read approximately 107.19° F. I feel sure that this temperature is incorrectly reported and I send this protest only from the belief that THE JOURNAL would not wish to report a mistaken observation.

ALBERT N. BLODGETT, Boston.

ANSWER.—We are gratified to see that the columns of THE JOURNAL are scanned so closely for possible mistakes. THE JOURNAL is glad to have its attention called to any mistakes and will promptly correct them.

In this case, however, the figures given were entirely correct and our correspondent has fallen into error. The rule for transposing temperature from Centigrade to Fahrenheit is based on the fact that a degree of Centigrade equals 1.8 degrees Fahrenheit and that the zero point of the Centigrade scale is at 32° F. Hence, if we multiply the figures of the Centigrade by $\frac{9}{5}$ and add 32, we obtain the figures on the Fahrenheit scale. In the present example $43.3 \times \frac{9}{5} = 389.7$; $389.7 \div 5 = 77.94$; $77.94 + 32 = 109.94$. A very convenient

method for obtaining these figures is to get nine-tenths of the number, multiply the result by 2 and then add the 32. Thus, 43.3 minus 4.33 (one-tenth of the same) equals 38.97. This multiplied by 2 equals 77.94; adding 32 gives 109.94.

ARTICLES ON MEDICINE IN THE PHILIPPINES

To the Editor:—Medical matters in the Philippines are constantly becoming of greater interest to the practitioner in the United States. Doubtless you have published articles on the subject. Can you give me a list of recent ones? H. D.

ANSWER.—The following articles on the subject have appeared within the last few years:

- Ashburn, P. M., and Craig, Charles F.: Study of Tropical Diseases in the Philippine Islands, *THE JOURNAL*, Feb. 27, 1907, p. 691.
- Dudley, F. W.: Prevalence of Cancer in the Philippine Islands, *THE JOURNAL*, May 23, 1908, p. 1663.
- Dudley, F. W.: Prevalence of Hydrophobia in the Philippine Islands, *THE JOURNAL*, Dec. 19, 1908, p. 2143.
- Heiser, V. G.: Sanitation in the Philippine Islands Since the American Occupation, *THE JOURNAL*, Jan. 9, 1909, p. 97.
- McLaughlin, A.: The Suppression of a Cholera Epidemic in Manila, *THE JOURNAL*, April 10, 1909, p. 1153.
- Musgrave, W. E.: Ten Years of American Sanitation in the Philippine Islands, *THE JOURNAL*, Feb. 6, 1909, p. 442.
- Rochester, A. S.: The Care and Treatment of Opium Smokers in the Philippine Islands, *THE JOURNAL*, Jan. 30, 1909, p. 351.
- Strong, R. P.: Combating Tropical Diseases in the Philippine Islands by Scientific Methods, *THE JOURNAL*, Feb. 13, 1909, p. 524.

TREATMENT OF SOLITARY CASEOUS LYMPH-GLAND

To the Editor:—What is the recognized treatment for a solitary caseous lymph-gland of the anterior cervical region, in a woman with a family history of tuberculosis, but without other signs of the disease? The patient is pregnant. SHELBY.

ANSWER:—Our correspondent does not state the size of the lymph-gland, how long the condition has been present, whether it is active or latent, or whether it is giving rise at present to any trouble. If the condition is latent or inactive it should be let alone for the present. If it is active, the gland should be removed notwithstanding the fact that the patient is pregnant.

AUTOMOBILE DATA WANTED

To the Editor:—Will the readers of *THE JOURNAL* who have had any experience with the Brush runabout, now selling at \$450.00, and with the Dayton Airless Clincher Tire, please write me whether or not they give satisfaction. Any one interested, who may want to know the reports from this inquiry, may have same by writing and enclosing stamp. L. C. OYSTER, Lumberport, W. Va.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Jan. 14, 1911.

Arthur, William H., lieutenant-col., granted three months' leave of absence about April 20, 1911.

Fisk, Owen C., lieutenant, Dec. 31, leave of absence extended ten days.

Birmingham, Henry P., lieutenant-col.; Kean, Jefferson R., major; Winter, Francis A., major; appointed members of a board of officers to meet at the Army Medical Museum Building, Washington, D. C., for the examination of such officers of the Medical Corps as may be ordered before it for examination and promotion.

Miller, Albert L., M.R.C., January 9, relieved from Fort Meade, S. D., about February 1, and ordered to his home, and on expiration of leave of absence for one month, to take effect about February 1, will stand relieved from active duty in the Medical Reserve Corps.

Thearle, William H., lieutenant, ordered to Jefferson Barracks, Mo., for temporary duty.

Van Horn, James B., M.R.C., relieved from further treatment at Army General Hospital, San Francisco, and ordered to the Army General Hospital, Fort Bayard, N. Mex., for observation and treatment.

Lyster, William J. L., major, on expiration of leave is assigned to temporary duty as attending surgeon in Philadelphia until June 1, 1911.

Church, James R., major, sick leave of absence extended twenty days.

Crum, Wayne H., lieutenant, granted twenty days' leave of absence, to terminate at such time as will enable him to report at Fort McKinley, Me., for duty with troops to Philippine Islands.

Scott, H. O., D.S., left Fort Hamilton, N. Y., en route to San Francisco, on one month and ten days' leave, and for annulment of contract.

Winter, Francis A., major, ordered to New York City on business connected with the purchase of medical supplies.

Lyon, William C., M.R.C., resignation accepted by the President to take effect January 14.

Hammond, William G., D.S., contract annulled January 14.

Medical Corps, U. S. Navy

Changes during the week ended Jan. 14, 1911.

Dunbar, A. W., surgeon, detached from the naval dispensary, Washington, D. C., and ordered to continue other duties.

Fitzsimmons, P., medical director, detached from duty as a member of the naval retiring board, navy yard, Washington, D. C., and ordered to continue other duties.

Field, J. G., medical inspector, ordered to the navy yard, Norfolk, Va.

Von Wedeking, L. L., surgeon, detached from command of the naval hospital, Annapolis, Md., and ordered to special duty in connection with the marine recruiting rendezvous, Chicago.

Pickrell, G., medical inspector, ordered to command the naval hospital, Annapolis, Md.

Guest, M. S., surgeon, transferred to the retired list from Jan. 6, 1911.

Strite, C. E., P. A. surgeon, ordered to the Naval Medical School Hospital, Washington, D. C., for observation.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Jan. 11, 1911.

White, J. H., surgeon, granted one month's leave of absence, without pay, from Jan. 5, 1911.

Irwin, Fairfax, surgeon, granted one month and ten days' leave of absence from Feb. 18, 1911.

Fricks, L. D., P. A. surgeon, granted fourteen days' leave of absence from Dec. 27, 1910.

Rucker, W. C., P. A. surgeon, detailed to join the "Mine Rescuing Car" and proceed to the several mines in West Virginia for special temporary duty. Granted three days' leave of absence en route.

Herring, R. A., asst.-surg., directed to proceed to Stapleton, N. Y., and report to the chairman of board of medical examiners, to determine his fitness for promotion to the grade of passed assistant surgeon.

Coffee, J. H., A. A. surgeon, granted seven days' leave of absence from Jan. 15, 1911, under paragraph 210, Service Regulations.

DeForest, C. M., A. A. surgeon, granted thirty days' leave of absence from Jan. 24, 1911, and a further period, without pay, of two months from Feb. 25, 1911.

Moncure, J. A., A. A. surgeon, granted fourteen days' extension of leave of absence from Dec. 17, 1910, on account of sickness.

White, R. C., A. A. surgeon, granted twenty-two days' extension of leave of absence from Dec. 10, 1910, on account of sickness.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Jan. 16, 1911, to conduct a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed-Assistant Surgeon M. K. Gwyn, recorder.

Board of medical officers convened to meet at the Marine Hospital, Port Townsend, Wash., Feb. 6, 1911, to conduct physical examinations of officers of the Revenue-Cutter Service. Detail for the board: Surgeon P. M. Carrington, chairman; Passed-Assistant Surgeon B. H. Earle, recorder.

Board of medical officers convened to meet at the Marine Hospital, Stapleton, N. Y., Jan. 16, 1911, for the examination of Assistant-Surgeon R. A. Herring, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Surgeon Hiram W. Austin, chairman; Passed-Assistant Surgeon W. A. Korn; Passed-Assistant Surgeon George L. Collins, recorder.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Third Weekly Meeting

LOCAL ANESTHESIA—COCAIN

PHYSIOLOGIC ACTIONS: Applied locally to mucous surfaces, to skin.

HYPODERMICALLY: Strength and dose of solution, indications, dangers.

INFILTRATION METHOD: Schleich's solution, combination with epinephrin, Braun's method. Indications, disadvantages.

SPINAL ANESTHESIA: Corning, Bier, Jonnesco. Technic in detail. Indications, dangers and after effects.

NEURAL ANESTHESIA: Corning, Oberst, Crile. Technic of nerve-blocking, solutions, advantages, difficulties.

SUBSTITUTES FOR COCAIN: Eucain, tropacocain, stovain, novocain, holocain, acocain.

ANESTHESIA BY FREEZING: Agents used, indications, disadvantages.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: State House, Des Moines, February 14-16. Sec., Dr. Gullford H. Sumner.

KANSAS: Topeka, February 14. Sec., Dr. H. A. Dykes, Lebanon.

NEBRASKA: State House, Lincoln, February 8-9. Sec., Dr. E. Arthur Carr.

NEW YORK: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr. Charles F. Wheelock, Albany.

Washington July Report

Dr. F. P. Witter, secretary of the Washington State Board of Medical Examiners, reports the written examination held at Seattle, July 5-7, 1910. The number of questions examined in was 11; total number of questions asked, 110; percentage required to pass, not less than 60 in any one subject. The total number of candidates examined was 104, of whom 79 passed, including 4 osteopaths, and 25 failed, including 1 osteopath. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Cooper Medical College.....	(1905)		1
University of Southern California.....	(1907)		1
Howard University, Washington, D. C.....	(1907)		1
Gross Medical College.....	(1898)		1
Denver and Gross College of Medicine..	(1907) (1909)		2
Rush Medical College.....	(1897) (1906)		2
College of Physicians and Surgeons, Chicago	(1893) (1900) (1901) (1905)	(1910)	5
Northwestern University Medical School (1888)	(1898) (1902) (2, 1907) (3, 1909)	(1910)	9
Chicago College of Medicine and Surgery.....	(1909)		1
Hahnemann Med. College and Hospital, Chicago.	(1910)		1
State University of Iowa, College of Medicine	(1901) (1906) (1907)	(1910)	4
State Univ. of Iowa, Coll. of Homeo. Medicine..	(1905)		1
Keokuk Medical College.....	(1897)		1
Hospital College of Medicine, Louisville.....	(1905)		1
Johns Hopkins University.....	(1902)		1
Tufts College Medical School.....	(1904) (1908)		2
Harvard Medical School.....	(1905)		1
Boston University.....	(1909)		1
Michigan College of Med. and Surgery. (1896)	(1905)		2
Detroit College of Medicine.....	(1901)		1
Univ. of Mich., Coll. of Med. and Surg. (3, 1908)	(1909)		4
Saginaw Valley Medical College.....	(1902)		1
Hamline University.....	(1902)		1
Univ. of Minn., Coll. of Med. and Surg. (1902)	(1909)		2
University of Minn., Homeopathic College.....	(1897)		1
Marion Sims College of Medicine.....	(1897)		1
Kansas City Hahnemann Medical College.....	(1909)		1
Barnes Medical College.....	(1910)		1
Washington University, St. Louis.....	(1907)		1
Creighton Medical College.....	(1907)		1
Columbia University, College of Physicians and Surgeons	(1906) (1908)	(1909)	3
New York University Medical College.....	(1896)		1
Long Island College Hospital.....	(1897)		1
Medical College of Ohio.....	(1871)		1
Miami Medical College.....	(1881)		1
University of Oregon.....	(1910)		2
Willamette University.....	(1910)		1
Western Pennsylvania Medical College.....	(1901)		1
Medico-Chirurgical College, Philadelphia.....	(1903)		1
Jefferson Medical College.....	(1900) (1908) (1910)		3
University of Pennsylvania.....	(1903) (1910)		2
University of Manitoba, Winnipeg.....	(1897)		1
Trinity Medical College, Canada.....	(1902) (1903)		2
Western University, London, Ontario.....	(1910)		1
Owen's College, Manchester, England.....	(1904)		1

FAILED

Bennett Medical College, Chicago.....	(1909)	1
Rush Medical College.....	(1899) (1901) (1903)	3
Northwestern Univ. Woman's Medical School...	(1887)	1
Chicago Homeopathic Medical College.....	(1883)	1
College of Physicians and Surgeons, Chicago..	(1910)	1
Indiana Medical College.....	(1898)	1
State University of Iowa, College of Medicine..	(1884)	1
Kansas Medical College.....	(1896)	1
Kentucky School of Medicine.....	(1904)	1
Medical School of Maine.....	(1910)	1
College of Physicians and Surgeons, Baltimore.	(1893)	1
Baltimore Medical College.....	(1907)	1
Saginaw Valley Medical College.....	(1899)	1
Barnes Medical College.....	(1907)	1
Missouri Medical College.....	(1883)	1
St. Louis University.....	(1904)	1
Jefferson Medical College.....	(1895)	1
University of Pennsylvania.....	(1907)	1
University of Nashville.....	(1902)	1
College of Physicians and Surgeons, Dallas....	(1908)	1
Marquette University, Milwaukee.....	(1909) (1910)	2

Missouri September Report

Dr. Frank B. Hiller, secretary of the Missouri State Board of Health, reports the written examination held at Jefferson City, September 20-22, 1910. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 58, of whom 38 passed and 20 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.....	(1907)		84
Chicago College of Medicine and Surgery.....	(1910)		77.8
Northwestern University Medical School.....	(1909)		81.2
Rush Medical College.....	(1910)		82.4
Drake University.....	(1910)		77.9
University of Kansas.....	(1910)	77.2, 80.4	
Kansas Medical College.....	(1908)		81.2
Louisville Medical College.....	(1903)		75.3
University of Louisville (1902) 75; (1910) 75, 80.6, 82.4, 84.1, 84.2, 86.9.			
Johns Hopkins University.....	(1910)	84.5, 88.2	
Ensworth Medical College, St. Joseph. (1908) 75.3; (1910) 75			
St. Louis College of Physicians and Surgeons (1899) 75; (1908) 75, 78.3; (1910) 75.2, 75.8, 76.9, 78.4, 83.5, 85.1, 86.2.			
University Medical College, Kansas City.....	(1910)		75
Kansas City Hahnemann Medical College.....	(1910)		75
Barnes Medical College.....	(1910)		75
St. Louis University.....	(1910)		80.5
Columbia University, Coll. of Phys. and Surg....	(1907)		89.5
Starling Medical College.....	(1892)		81.2
Vanderbilt University.....	(1910)		78.2
University of Texas.....	(1910)		89.4

FAILED

University of Louisville.....	(1910)	57.2, 65.1
Ensworth Medical College.....	(1909)	37.5; (1910) 63, 66.8
St. Louis College of Physicians and Surgeons (1906) 63.8; (1909) 66.8, 67.1; (1910) 66.7, 68.8.		
Barnes Medical College.....	(1907)	49.3; (1910) 66.2, 68.4, 69.1
Homeopathic Medical College of Missouri.....	(1909)	68.9
American Medical College, St. Louis. (1909) 63.3; (1910) 65.2		
University Medical College, Kansas City.....	(1910)	60, 62.8
Meharry Medical College.....	(1910)	65.3

Michigan October Report

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, October 11-13, 1910. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and not less than 50 in any one subject. The total number of candidates examined was 13, of whom 12 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
American Medical Missionary College.....		(1910)	83.4
Tufts College Medical School.....		(1907)	84.6
Harvard Medical School.....		(1904)	85
Detroit College of Medicine.....		(1910)	75.5, 77.2, 77.9
University of Michigan, Dept. of Med. and Surg. (1893)			87.8; (1910) 77, 85.7.
Detroit Homeopathic College.....		(1910)	75, 78.2
University of Paris		(1899)	88.1

FAILED

Detroit Homeopathic College.....	(1908)	43.4
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Montana October Report

Dr. William C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the written and oral examination held at Helena, October 4-6, 1910. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 52, of whom 36 passed and 16 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Denver and Gross College of Medicine.....	(1910)		78.9
Rush Medical College (1897) 78.4; (1904) 82.9; (1907) 79; (1909) 77.5; (1910) 84.7.			
Hahnemann Medical College and Hospital, Chicago (1883) 78.6; (1895) 75.5.			
Northwestern University Medical School	(1910)	75.1, 77.3	
College of Physicians and Surgeons, Chicago.....	(1909)	75.2, 80	
Bennett Medical College.....	(1906)	75	
Chicago Homeopathic Medical College.....	(1896)	75.1	
University of Kansas.....	(1909)	75.1	
Indiana University	(1910)	79.3	
College of Physicians and Surgeons, Baltimore....	(1910)	77.1	
Johns Hopkins University.....	(1910)	76.7	
Baltimore Medical College.....	(1906)	75.4	

University of Michigan, Dept. of Med. and Surg. (1903)	76.9;
(1910)	76.4, 79.8.
University of Minnesota, College of Med. and Surg. (1902)	75;
(1904)	77.4.
Hamline University	(1902) 75.4
Creighton Medical College	(1910) 75.8, 78.9
Kansas City Hahnemann Medical College (1909)	75.2; (1910) 79.3.
Cornell University Medical College	(1900) 75.1
Albany Medical College	(1906) 75.7
Jefferson Medical College	(1910) 76.2
Memphis Hospital Medical College	(1903) 75
Vanderbilt University	(1908) 75
University of Toronto, Ontario	(1908) 75.2
University of Christiania, Norway	(1906) 76.7

FAILED	
Rush Medical College	(1904) 71.3
Northwestern University Medical School	(1908) 62.4, 65.6
Indiana Medical College	(1896) 51
University of Iowa, College of Medicine	(1910) 65.3
Keokuk Medical College	(1907) 60.4
College of Physicians and Surgeons, Keokuk	(1907) 49.3
Hamline University	(1908) 70.7
University Medical College, Kansas City	(1881) 42.3
Barnes Medical College	(1910) 71
Ensworth Medical College	(1905) 51
Marion-Sims Beaumont College of Medicine	(1903) 50.8
Memphis Hospital Medical College	(1910) 71.1
University of the South	(1905) 64.9
University of Nashville	(1906) 63.2
College of Physicians and Surgeons, Dallas	(1908) 68.1

Connecticut November Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written and oral examination held at New Haven, November 8-9, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 24, of whom 16 passed and 8 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale Medical School	(1910)	80.1, 82.1,	83.4
Louisville and Hospital Medical College	(1908)		83.9
Baltimore Medical College	(1909)	81.2; (1910)	77.8, 79.2
Medical School of Maine	(1903)		78.5
Johns Hopkins University	(1900)		90.6
Dartmouth Medical College	(1910)		88.4
University and Bellevue Hospital Med. College	(1910)		85.7
University of Pennsylvania	(1910)		89.9
Jefferson Medical College	(1903)		77.2
University of Vermont	(1893)		75.5
University of Virginia	(1908)		75.4
Queen's University, Kingston, Ontario	(1908)		80.3

FAILED	
Maryland Medical College	(1910) 73.4
Baltimore Medical College	(1907) 12.2; (1909) 74.2
University of Maryland	(1906) 74.3; (1908) 63.5
College of Physicians and Surgeons, Baltimore	(1910) 72.8
College of Physicians and Surgeons, Boston	(1910) 61.2
University of the South	(1904) 62.8

West Virginia November Report

Dr. H. A. Barbee, secretary of the West Virginia State Board of Health, reports the written examination held at Morgantown, Nov 14-16, 1910. The number of subjects examined in was 9; the total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 29, of whom 24 passed, including 1 osteopath, and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1904) 82; (1910)		83
Georgetown University	(1910)		86
George Washington University	(1908)		92
College of Physicians and Surgeons, Chicago	(1910)		80
University of Louisville	(1910)	80, 81, 82, 83, 85.	
Louisville and Hospital Medical College	(1908)		89
Woman's Medical College of Baltimore	(1910)		88
University of Maryland	(1910)		83, 86
Eclectic Medical College, Cincinnati	(1910)		80
University of Pittsburgh	(1908) 92; (1910)		87
Women's Medical College of Pennsylvania	(1906)		85
Western Pennsylvania Medical College*	(1907)		82
University of Pennsylvania	(1909) 90; (1910)		91
Meharry Medical College	(1910)		81
University of the South	(1908)		86

FAILED	
University of Louisville	(1909) 65
Maryland Medical College	(1909) 76
Baltimore University	(1900) 63
Eclectic Medical College, Cincinnati	(1910) 76, 77

* Name changed to University of Pittsburgh, Medical Department, in 1908

Connecticut Homeopathic November Report

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, November 8-9, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Boston University	(1904) 90; (1906)		80, 88
Hahnemann Med. Coll. and Hosp., Philadelphia	(1910)		84

Book Notices

NEPHROCOLOPTOSIS. A Description of the Nephrocolic Ligament and Its Action in the Causation of Nephroptosis, with the Technic of the Operation of Nephrocolopexy, in Which the Nephrocolic Ligament is Utilized to Immobilize Both Kidney and Bowel. By H. W. Longyear, M.D., Professor of Gynecology and Abdominal Surgery, Detroit Post-Graduate Medical School. Cloth. Price, \$4. Pp. 251, with 86 illustrations. St. Louis: C. V. Mosby Company, 1910.

The author of this work was dominated by a central idea. This idea is that movable kidney is produced by the sagging of the colon drawing on and pulling out of place the kidney, the weight of the colon being transmitted to the kidney through bands of connective tissue which the author calls the nephrocolic ligament. In order to explain the fact that the right kidney alone is affected in the large majority of the cases, the author assumes that the colon, in attempting to move its contents up the ascending colon, pulls down on the right kidney and that no such downward pull on the left kidney is present while the contents are moving down the descending colon. A glance at Figures 4 and 6, showing a long ascending limb of the transverse colon passing up to the splenic flexure, would be sufficient to shake one's belief in the theory, even if there were not many other reasons for hesitating to accept it. Concerning the nephrocolic ligament, on page 29 we find the following: "The last two observers—surgeons of long experience [Reed and Zuckerkandl]—are emphatic in their opinion regarding the strength of the tissue. Both believed its volume and strength to be of inflammatory origin and thus abnormal and adventitious. Billington's observation that this condition is peculiar to cases of nephroptosis coincided with that of the author and seems to cover a valuable point in the anatomic experience of some others who, failing to find the ligament as described, base their opinions on the examination of subjects which have had no displacement of the kidney."

If these bundles of connective tissue or nephrocolic ligament are perceptibly present only in cases of movable kidney and colon it is infinitely more probable that they are the result and not the cause of the abnormal mobility. The author admits on page 37 that "whether this increase of tissue over the average is cause or effect is not known." Yet on page 50 he states that the ligament is the most important factor in the cause of movable kidney as, "by it the prolapsing colon pulls the kidney out of place." There is one more important fact in connection with movable kidney which the author's theory does not explain, and that is that movable kidney is extremely common in women and extremely uncommon in men.

The contents of the colon must be moved up the ascending colon in men just the same as in women, and there must be the same downward pull, yet it does not pull the kidney down in men, so there must be some other factor in the etiology of movable kidney which the author's theory fails to explain. However, that the author appreciates this fact is well shown in his description of the prophylactic treatment which contains much good sense on how to develop strong, healthy bodies in young girls. The key-note is struck on page 81. "Breathing exercises should be conducted in ways to develop the intercostal muscles and diaphragm and cause broadening and increase of capacity of the lower part of the thoracic cavity." (It should read upper abdominal cavity, as that is where the organs are located.) This is not only good prophylactic treatment but good in well-developed cases.

The author is too enthusiastic in regard to the benefits of operative treatment. In the great majority of the cases movable kidney produces no special symptoms and therefore its fixation by operation in those cases relieves none.

The work is a very readable one, and, aside from the fact that the author takes a rather narrow view of the cause of movable kidney, contains many good points.

HANDBUCH DER NEUROLOGIE. Herausgegeben von M. Lewandowsky. Vol. I, Allgemeine Neurologie. Paper. Parts I and II. Price, 68 marks. Pp. 1606, with 322 illustrations and 12 plates. Berlin: Julius Springer, 1910.

This work, dealing with the general principles of neurology, constitutes the first volume of a handbook which, when completed, is to embrace the entire practice of neurology. In its preparation forty-six authors, each an authority on the subject assigned him, have contributed to make this the most exhaustive treatise on practical neurology to be found in any language. The value of each article is greatly enhanced by the good bibliography which accompanies it—a feature not found in any other neurologic text-book. The subject-matter is treated of in five chapters and many subchapters.

Chapter 1, by Bielschowsky, comprises about 90 pages, with 6 colored plates. The histology and histopathology receive masterly treatment by the well-known author of the new fibril-stain, by means of which greater insight has been afforded into the histology of the nervous system. The writer, though a follower of Apathy and Bethe, both of whom have labored hard to overthrow the neuron theory, discusses the neuron doctrine with no rancor and suggests a modification according to the latest research.

Chapter 2, dealing with the anatomy of the nervous system and really a text-book in itself, is up to date and contains in 218 pages and a splendid bibliography the essentials of the entire subject.

Chapter 3, on the experimental physiology of the nervous system, was written in individual articles by R. du Bois-Reymond, Otto Kalischer, M. Lewandowsky and Ernst Weber. The last-named author contributed the article on "Physiologic Accompaniments of Psychic Processes" in 22 pages, and one regrets that not more space was devoted to this interesting and entirely new topic; but what there is of it is excellent. The entire chapter is one of the best in the book.

Chapter 4, the longest, is devoted to general pathology, symptomatology and diagnosis of nervous diseases. Among the many splendid articles the one on the nervous disorders of the cochlea and vestibule by Robert Bárány of Vienna, must be particularly mentioned. In the short space of 40 pages he gives a summary of pioneer work done in this new field, largely his own, which must attract the attention of neurologists and otologists.

Chapter 5, on the general therapy, covers almost everything of importance pertaining to the treatment of this class of disorders. The surgical, orthopedic, electric and mechanical methods are fully discussed by such experts as W. Braum, Osear Vulpius, and Toby Cohn. The subchapter on the treatment by drugs is well handled by S. Kalischer. Though the article on psychotherapy by Fritz Mohr is fairly complete, yet in our opinion disproportionate space is given to hypnotism—more than one-half—when this space could have been profitably devoted to a fuller discussion of modern methods of psychic treatment.

MANUAL OF HUMAN EMBRYOLOGY. By Many Writers. Edited by Frank Keibel, Professor in the University at Freiburg i. Br., and Franklin P. Mall, Professor of Anatomy in the Johns Hopkins University, Baltimore. In Two Volumes. Volume I. Cloth. Price, \$7.50. Pp. 548, with 423 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

As appears from the title, a number of German and American embryologists have collaborated in the production of this important work, which appears simultaneously in Germany and in America. The chapters originally written in German have been translated by Professor McMurrie and the chapters originally written in English have been translated by Professor Keibel. The work is in two imperial octavo volumes. The text is handsomely illustrated.

The chapters in Volume I are as follows: F. Keibel: "Introduction"; "The Germ Cells"; "Fertilization"; "Segmentation"; "Young Human Ova and Embryos up to the Formation

of the Primitive Segment"; "The Formation of the Germinal Vesicle and the Problem of the Gastrula"; "Summary of the Development of the Human Embryo and the Differentiation of its External Form."

F. P. Mall: "Determination of the Age of Human Embryos and Fetuses"; "The Pathology of the Human Ovary."

Otto Grosser: "Development of the Egg Membranes and the Placenta"; "Menstruation."

Felix Pinkus: "Developmental History of the Skin."

Charles R. Bardeen: "Developmental History of the Skeleton, Including the Histogenesis of the Supporting Substances of the Connective Tissue Group."

Warren H. Lewis: "Developmental History of the Muscular System, Including the Histogenesis of the Smooth and Cross-striated Muscle Fibers."

F. P. Mall: "Culom and Diaphragm."

The existing text-books of human embryology, many of them of high excellence, are based, as is well known, for the most part, on other than human material, having been written from the point of view of comparative embryology. In the present work, however, the account of the development of the human body is based mainly on human material. Whenever comparative embryology and anatomy are drawn on in order to render intelligible special developmental processes in man, the considerations are printed in smaller type so that a clear distinction between facts and deductions is apparent. In the introduction Professor Keibel traces the development of human embryology up to the present time when the materials needed for a full exposition are practically available, with the exception of the earlier stages in the development of the germ layers and the first steps of placentation. The authors are all masters of the subject of which they write and the result is a fine example of literary cooperation, the necessary similarity of treatment being secured by the common purpose and by editorial supervision. Greater uniformity in the bibliographic references at the end of many chapters is desirable. This is an authoritative work of great value and of special interest to physicians because it deals with the development of the human body itself.

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Second Edition. Cloth. Price, \$3 net. Pp. 594, with 162 illustrations. Philadelphia: W. B. Saunders Co., 1910.

In our review of the first edition of this work we said: "It is destined to occupy a large field of great usefulness because it meets the needs, not only of the medical student, but also of the general scientific student and reader who is interested in the relations of microbes to disease and in their growing importance to agriculture, to sanitation, and to many industries." That our prophecy has been already fulfilled is evidenced by the appearance of this second edition in such a short space of time.

The subject-matter has been brought fully up to date by inclusion of the most important features of the research of the last few years. While bacteriology, in the narrower sense, must be regarded as an all-important branch of medical science, yet one must not forget that this science has done much for the various industries, in many cases having almost created new industrial conditions. It is, therefore, especially refreshing to find in this work so much more stress laid on the medical aspects than is usually the case in such works; and this, too, without slighting the many other fields in which bacteriology is of great importance.

The subject-matter of this volume leaves little to be desired, either as to content or as to arrangement. The facts, which have been established by many years of earnest research, are marshalled in such an array that even the most casual reader cannot fail to realize the great importance of this branch of science. The style is clear, concise, and, especially, scholarly—characteristics too often sacrificed by the scientific writer on the altar of abstruse statement. The illustrations are numerous and excellent. We heartily commend this work to those who wish to become *en rapport* with the various phases of general bacteriology without being compelled to go over the enormous mass of detail, which is, necessarily, a part of the equipment of the specialist in this great field.

EUTHENICS. THE SCIENCE OF CONTROLLABLE ENVIRONMENT. A Plea for Better Living Conditions as a First Step Toward Higher Human Efficiency. By Ellen H. Richards, author of *Cost of Living Series*, etc. Cloth. Price, \$1 net. Pp. 162. Boston: Whitcomb & Barrows, 1910.

The title of this book explains its motive and defines the new word it introduces. It deals with race improvement through environment, while eugenics, the corresponding term which suggested the present one, deals with race improvement through heredity. Euthenics, therefore, the author says, precedes eugenics, developing better men now and thus inevitably creating better men in the future. While eugenics has to await investigation and see its results in the future, euthenics has present opportunities. The author might have added that eugenics deals with only one form of prophylaxis or evil and is as yet largely tentative in its methods and recommendations, while the proper use of good environment is a means always at hand and corrective as well as preventive. The name is the most original part of the work, which, however, gives a large amount of wholesome advice on sanitation, education, and the relations of science and education to human welfare. There are some omissions: the author seems to steer clear of the ethical side of education; the school, she says, "is not the best place to teach ethics." This may be so, but it is a good place nevertheless, and for some pupils the only one. There is much good counsel given about housing, diet, nutrition, etc., but the abuses of drink, drug habits, etc., which are among the most fruitful causes of human degeneracy, receive hardly any mention. Probably the author thought these matters had received sufficient emphasis elsewhere, but they, as well as some other social problems, are certainly important enough to be considered or at least mentioned under the general head of euthenics, as defined.

A TREATISE ON ORTHOPEDIC SURGERY. By Royal Whitman, M.D., Assistant Professor of Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York. Fourth Edition. Cloth. Price, \$5.50 net. Pp. 908, with 601 illustrations. Philadelphia: Lea & Febiger, 1910.

This edition is a half larger and contains a third more illustrations than the first edition, issued only nine years ago. Comparison of this with the earlier editions shows, in text, bibliography, and pictures, thorough assimilative revision and supplementation. The regional plan (with some general chapters), the conservative orthopedic scope, the inclusion of statistics, the annotation by exact references, the consideration of treatment chiefly by local means—operation, apparatus, and posture and exercise—and the representative rather than the personal attitude are retained. The book, therefore, continues to be peculiarly valuable, and this edition makes it again standard.

PSYCHE. A Concise and Easily Comprehensible Treatise on the Elements of Psychiatry and Psychology. For Students of Medicine and Law. By Dr. Max Talmeier. Cloth. Price, \$2.50. Pp. 282. New York: Medico-Legal Publishing Company, 1910.

Despite the fanciful title, this book contains much of value to the medical student and the general practitioner. The introductory chapter on the psychology of physiology of the mental functions is well written and sufficiently exhaustive for the medical student. The succeeding three chapters are too meager in content and the last chapter, on special pathology of insanity, the most important for the medical reader, is entirely inadequate. There can be no doubt that the author's expectations will be fulfilled with reference to the value of his treatise to the layman and to the attorney.

NORMAL HISTOLOGY, WITH SPECIAL REFERENCE TO THE STRUCTURE OF THE HUMAN BODY. By George A. Piersol, M.D., Professor of Anatomy in the University of Pennsylvania. Eighth Edition. Cloth. Price, \$3.50. Pp. 418, with 438 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

A new edition of this text-book has been prepared on the lines indicated in the original preface. It is intended to be used at the beginning of the medical curriculum, and therefore sufficient information on gross anatomy is included to enable the student to grasp the subject. The book admirably fulfils its purpose. The text is well illustrated, a considerable number of colored pictures being introduced. The present edition is well fitted to sustain the reputation which previous ones have achieved.

THE FAMILY HEALTH. By Myer Solis-Cohen, M.D., Fellow of the College of Physicians of Philadelphia. Cloth. Price, \$1. Pp. 267. Philadelphia: The Penn Publishing Co., 1910.

Cohen covers the field of household medicine, including housing, water, heating, bathing, clothing, exercise, eating, stimulants, childhood, care of sick, accidents, etc. His style is terse and dogmatic, yet not objectionally so. It enables him to cover a great deal of ground and to avoid confusing the reader. Statements that deserve criticism are few and these are not important, as, for instance, "Stoves do not assist at all in ventilation." The book may be recommended as a sensible guide to health and right living.

HYPNOTISM AND SUGGESTION IN DAILY LIFE, EDUCATION AND MEDICAL PRACTICE. By Bernard Hollander, M.D. Cloth. Price, \$1.75. Pp. 295. New York: G. P. Putnam's Sons, 1910.

The book will be interesting reading both to the physician and to the layman. It is an orderly, calm discussion of the subject, but adds nothing new of scientific value. There is no adequate consideration of the questions raised by the school represented by Freud and Jung; these questions are of the greatest importance where suggestion in any way enters into the problem.

Medicolegal

Validity and Construction of Provision in Medical Practice Act for Licensing Itinerant Vendors of Nostrums—Powers of State Board of Health—Advertising Matter Around Bottles as Evidence

The Supreme Court of Illinois, in *People for use State Board of Health vs. Wilson*, interprets and holds constitutional section 8 of the medical practice act of 1899, and holds that said section was not repealed by the pharmacy act of 1901. Said section 8 provides: "That any itinerant vendor of any drug, nostrum, ointment or appliance of any kind intended for the treatment of diseases or injury, who shall, by writing or printing, or by any other method, profess to the public to cure or treat disease or deformity by any drug, nostrum or application, shall pay a license of one hundred dollars (\$100) per month into the treasury of the board, to be collected by the board in the name of the People of the State of Illinois, for the use of said board. And it shall be lawful for the State Board of Health to issue such license on application made to said board * * * but said board may, for sufficient cause, refuse said license. * * *"

It was contended that the section was unconstitutional for the reason that it delegated legislative and judicial powers to the State Board of Health by giving it the right to refuse a license for sufficient cause without laying down any rule for its guidance. And the court says that it is the province of the legislature, alone, to enact law, and that power cannot be delegated to any other body. A law must be complete in all its terms and conditions when it leaves the legislature, so that every one may know, by reading it, what his rights are and how it will operate when put into execution. But this section is complete in all its terms, and it does not confer on the State Board of Health any power to legislate or to make any law. The only powers delegated to the board pertain to the execution of the law. Had this section given the board arbitrary power, in its discretion, to refuse to issue a license in any case it would then be open to the objection urged. As it stands, this section merely confers on the board, by express terms, that power and authority which it would have possessed had the clause complained of been entirely omitted.

This statute is designed to protect the public health and is a proper exercise of the police power of the state. The practice of medicine, which includes the itinerant vending of drugs and nostrums, is subject to legislative regulation and control. Had the clause, "but said board may, for sufficient cause, refuse said license," been omitted from this section of the act, the board would have possessed a discretion, which it might exercise to safeguard the public health, in granting or refusing a license. By the insertion of this clause the board is given no greater power. In the absence of either

express restriction or authority the board would have been vested with a reasonable discretion, which it might exercise, when necessary, to safeguard the public health. If the board would possess such power without express authority it certainly cannot be said that the granting of that power in express terms renders the act void. Should the board abuse the discretion thus vested in it the party aggrieved has his remedy. If such discretionary power is exercised with manifest injustice the courts are not precluded from commanding its due exercise. They will interfere where it is clearly shown that the discretion is abused. Such abuse of discretion will be controlled by mandamus.

Under this act the State Board of Health is not vested with an arbitrary discretion, but on the contrary, is only authorized to refuse a license for sufficient cause. Should the board exercise this discretion unreasonably or unfairly its action would be subject to review by the courts. The act is not subject to the objection that it confers legislative powers on the State Board of Health.

Nor does the court agree with the contention that, even though this act be valid, section 8 was repealed, by implication, by the pharmacy act of 1901, so far as it applies to the itinerant vending of patent or proprietary medicines. The drug or nostrum sold in this case ("Porter's Pain King") was a proprietary preparation and bore a trade-mark. It was sold by the defendant in the original and unbroken package, and it was not claimed that it contained cocaine or any other of the interdicted substances enumerated in the pharmacy act. The second proviso of the first section of the pharmacy act exempts from its provisions the sale of patent or proprietary preparations which do not contain cocaine and other enumerated substances, and, so far as that act is concerned, leaves those preparations free to be sold by any one when sold in original and unbroken packages. The pharmacy act is not in reference to the same subject-matter as section 8 of the medical practice act. The pharmacy act merely provides that one who sells certain patent or proprietary preparations need not be a pharmacist, and that the provisions of that act do not apply to the sales of such preparations. It contains nothing which in any way modifies or repeals the provisions of the medical practice act regulating the vending of drugs and nostrums, whether such drugs and nostrums be patent, proprietary or other preparations.

It was urged, however, that, as by the pharmacy act the legislature removed all restrictions from the sale of certain patent or proprietary preparations, that act must be held to operate to repeal said section 8 in order to prevent unjust discrimination between vendors of the same patent or proprietary preparations, and it was insisted that it cannot be made unlawful, on the ground of regulating the practice of medicine, for a citizen to sell medicine from a wagon or by traveling from house to house when the same medicine can be lawfully sold by the proprietor of a grocery or drug store. This argument was based on the assumption that itinerant vendors of patent and proprietary preparations fall within the same class as vendors of the same preparations who have a fixed and permanent place of business. This assumption is without foundation. A merchant with a permanent place of business deals, as a rule, with his regular customers and sells wares to such as come to buy. He is not a stranger in the community, and his character, reliability and reputation are known. He has a business reputation to maintain and has a fixed abiding place at which he may be found. An itinerant vendor, on the other hand, is not bound by any of the rules which govern the local merchant. He may be an entire stranger to every member of the communities in which he plies his trade. He has no business reputation to sustain. He is bound by no restraint in the representations he may make as to the particular drug or nostrum he offers for sale. He is here to-day and to-morrow is gone, perhaps never to be heard of again. The local dealer and the itinerant vendor of patent medicines are of separate and distinct classes. To regulate the practice of medicine is clearly within the police power of the state, and to discriminate between peddlers or itinerant vendors of medicinal preparations and local dealers in the same preparations is not an abuse of that power. The

pharmacy act in nowise repeals any of the provisions of the medical practice act.

It was finally contended by the defendant that there was no proof that he was an itinerant vendor of any drug, nostrum, ointment or appliance of any kind intended for the treatment of disease or injury, or that he did, by writing or printing or any other method, profess to the public to cure or treat disease or deformity by any drug, nostrum or application. The evidence disclosed that the preparation sold by him was contained in bottles. Around each bottle was wrapped a printed circular, and bottle and circular were inclosed in a pasteboard box. The circular or pamphlet gave specific directions for external and internal use in the treatment of almost every ailment known to science with which man, beast or fowl may be afflicted, representing that "Porter's Pain King" was the best known remedy for all such ailments and guaranteeing satisfaction. The pamphlet also contained copies of a number of testimonials by various persons, in which wonderful cures of various ailments were claimed to have been effected by the use of the preparation. This pamphlet was delivered, with the preparation, to the purchaser. Such professions, although made only to those who purchased the nostrum, come within the clear meaning and intent of the statute. On this question the evidence on the part of the People made out a case against the defendant as an itinerant vendor of a nostrum, in violation of the statute.

Society Proceedings

COMING MEETINGS

American Medical Association. Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.
Assn. of American Medical Colleges, Chicago, February 27-28.
Natl. Confed. of State Med. Exam. and Licng. Bds., Chicago, Feb. 28.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twentieth Annual Meeting, held at Chicago, Dec. 19-20, 1910

(Continued from page 67)

Primary Sarcoma of the Appendix

DR. EVERETT O. JONES, Seattle, Wash.: Primary sarcoma of the appendix is an extremely rare condition. An accurate diagnosis before operation appears to be impossible. In every case the symptoms are those of some type of appendicitis. Pathologically the round-cell sarcoma predominates; next to this, the spindle-cell type. Inflammatory changes, either chronic or acute, very frequently accompany the growth. The immediate prognosis and prospect of freedom from recurrence are very good. The fact that primary sarcoma of the appendix may arise in an inflammatory process forms a very strong additional argument for the removal of all appendices which show evidences of inflammation.

DISCUSSION

DR. A. E. HERTZLER: I have no hesitation in referring to this case as one of desmoid of the appendix, because I do not know what a desmoid is, and I do not know the nature of the appendix removed in this particular case. It is common to have microscopic pictures in these chronic intestinal inflammations which look very much like sarcoma; hence the greatest care possible is necessary to make the differentiation.

DR. S. C. BEEBE, David City, Neb.: In the department of pathology of St. Mary's Hospital, Rochester, Minn., of 5,000 appendices removed, there were only twenty-two cases of carcinoma, and not a single case of primary sarcoma.

DR. WILLIAM C. McCARTY, Rochester, Minn.: Among 10,000 appendices removed in Rochester, I have not seen one case of sarcoma. In the first 5,000 cases examined, there were twenty-two cases of carcinoma. Two of these I had previously diagnosed as endothelioma, which shows that the differential diagnosis between endothelioma and sarcoma is a difficult one. These were all very early cases, and in only one out of seventeen was the serosa involved.

DR. DONALD MACRAE, Council Bluffs, Ia.: I have had eight or ten cases which from macroscopic appearances, and the sensation imparted to my fingers appeared to be sarcoma. Unfortunately in the cases I have had, the disease was not entirely confined to the appendix, but involved the cecum, and there were adhesions which tore away like frozen meat, and the mass had a sarcomatous feel.

DR. ARNOLD SCHWYZER, St. Paul, Minn.: A few years ago, while on a visit to Switzerland, a patient presented himself with a large tumor of the diaphysis of the femur. Professor Kocher was to operate on this patient, believing the tumor was malignant. Sections were taken from it, and examined by Professor Langhans, who made the positive report that the tumor was a round-cell sarcoma. In the meantime, while waiting for the report, Kocher observed the tumor and found some grayish little dots here and there which appeared to him to be deteriorated tissue, and came to the conclusion that it was a case of infectious granuloma. He acted accordingly, left the femur, and saved the patient's leg. No recurrence took place. It is difficult to make a differentiation between infectious granuloma and sarcoma.

DR. EMERSON F. ROOT, Salt Lake City: About seven years ago I had a case of what I thought was primary sarcoma of the appendix. The patient had had a chronic appendicitis for more than a year. The appendix was found to be 5 or 6 inches long, and 1 inch or more in diameter, with its lumen almost occluded. It was rather hard, and very loosely attached. The cecum was not involved to any great extent. The appendix was removed together with a small portion of the head of the cecum. The wound healed by primary intention. Two or three months later the patient died. In this case the microscopic diagnosis was made of round-cell sarcoma of the appendix.

DR. WILLIAM JEPSON, Sioux City, Ia.: I am averse to coining new terms that do not express anything. The term desmoid tumor arises from the fact that prior to our histologic conception of what these tumors were like, they were classed as having developed from band-like masses found in the rectus muscle or in the transverse fascia. The term desmoid means band-like. Is there any reason why we should adhere to such a term when these tumors are strictly fibromas?

A New Principle in the Action of Antiseptics

DR. M. G. SEELIG, and DR. C. W. GOULD, St. Louis: Effectiveness in the action of a germicide is dependent on the inherent power of destroying germ life, and the power of penetrating tissues, blood-clot or exudate, in order to reach the bacteria.

Germicidal drugs such as mercuric chlorid, phenol, cresol and compound solution of cresol, in watery solution of various strengths, have no apparent effect on organisms that are separated from the germicide by a thin layer of celloidin, an excellent osmotic membrane. Iodin in watery solution is an exception. It osmotes through the celloidin and destroys the organisms. With animal membranes, excepting a 3 per cent. watery solution of phenol, the same results were secured as with celloidin membranes. Alcohol, above 60 per cent. strength, penetrated the celloidin membranes with a degree of rapidity and effectiveness proportionate to its strength. Ninety-five per cent. alcohol kills the organisms in from three to ten minutes. Eighty per cent. in about an hour and a half; 70 per cent. in about seven hours, whereas 50 per cent. did not kill in twenty-four hours. Ninety-eight per cent. was not perceptibly more efficacious than 95 per cent. The addition of bichlorid or phenol did not increase the osmotic power, or intensify the germicidal action of alcohol. The addition of iodine to the alcohol made a solution of heightened osmotic power and increased the germicidal power. The fatty constituents of the tissues, the skin for example, render them better osmotic membranes for alcohol and tincture of iodine, for the reason that alcohol is soluble in these fats. This phenomenon underlies the fact that thorough washing of the skin interferes somewhat with the germicidal effect of the subsequent application of alcohol. The generally accepted explanation that washing the skin is a disadvantage because it softens and swells the epidermis is incorrect.

Primary Suture of Subparietal Rupture of the Kidney

DR. F. GREGORY CONNELL, Oshkosh, Wis.: Owing to the rapid recent increase in the number of reported cases, there is reason to believe that subparietal rupture of the kidney is more frequent than the literature would lead one to believe. Shock, injury to other organs and external evidence of trauma are frequently absent. History of an abdominal contusion, followed by rigidity and hematuria, is sufficient to lead to exposure of the organ. Slight lesions, and complete rupture of the kidney cannot be differentiated by clinical signs or symptoms. Proof of the absence of serious rupture is called for before instituting the so-called expectant treatment. Nephrectomy should be reserved for very extensive disintegration of the organ. Conservative treatment, preferably by suture, is indicated in the majority of cases.

DISCUSSION

DR. WILLIAM J. FRICK, Kansas City, Mo.: Heavy falls or blows striking on or about the lumbar region should always be regarded as serious. The appearance of hematuria following such injury should be sufficient evidence on which to make a diagnosis of rupture of the kidney, although the absence of hematuria following such injuries is not always absolute proof that the kidney has not been injured. In one case of subparietal rupture of the kidney, hematuria was very slight, although the damage to the kidney was apparently beyond repair. The patient did not live very long. The wound about the kidney was simply packed. In a case of gunshot wound of the kidney there was not a trace of blood in the urine, macroscopically at least, although the perirenal space was filled with blood. When a diagnosis of rupture of the kidney is made, the kidney should be exposed by a lumbar incision, especially if it be an uncomplicated rupture of the kidney, as it is the only means we have of determining the extent of damage done to the kidney. We cannot depend on the amount of hematuria or any other sign. Knowing the ability of kidney tissue to repair itself, we should attempt conservative surgery in these cases. Nephrectomy should not be done unless the injury to the kidney parenchyma is so extensive as to make it impossible to save enough of it to be of functional value, and unless the injury to the renal vessels is so great as to interfere seriously with the organ's nutrition.

DR. GEORGE N. KREIDER, Springfield, Ill.: By means of the Roentgen ray we can definitely outline the kidney, differentiating the pelvis from the substance of the kidney. Another valuable point is to give the patient methylene blue, which would cause staining of the tissues about the injured kidney.

DR. B. B. DAVIS, Omaha, Neb.: A great many nephrectomies have been done unnecessarily. We are beginning to realize the wonderful reparative power the kidney possesses. In one case I removed about one-third of the kidney, putting in a mattress suture below, with recovery of the patient. I believe that in many cases the suture is very much to be preferred to gauze drainage or gauze used to control hemorrhage.

DR. F. A. DUNSMOOR, Minneapolis: It is not the mere escape of blood which causes death in these cases, but it is the mixture of urine with the blood and its absorption into the tissues which causes death, particularly in these complicated cases in which the abdominal cavity is contaminated.

DR. ARNOLD SCHWYZER, St. Paul: As to the diagnosis, blood in the urine may be very scant. The first urine should be examined not only by the eye, but microscopically.

DR. A. W. ABBOTT, Minneapolis: I wish to speak of some experiments made by a Minneapolis physician for the purpose of determining the ultimate results of injury to the kidney. In the first place, where the kidney has been injured and the capsule only sewed together, if there was much hemorrhage left in the kidney, it was followed by inflammatory trouble usually, and then by a scar, and a large part of the kidney was rendered useless. The same results followed packing. The best results were obtained by a suture which passed through the kidney directly at about the outer limits of the pyramids.

DR. DANIEL N. EISENDRATH, Chicago: I want to endorse the position taken by Dr. Davis in contradistinction to that taken by Dr. Connell and Dr. Frick. My experience is based on a personal observation of fifteen cases of subparietal rup-

ture of the kidney. The conclusion has been forced on me that the more conservative we are in the treatment of sub-*parietal* rupture of the kidney, the greater will be our percentage of recoveries, and I think that is the tendency one sees in the foreign literature on this subject. I have seen some extremely severe cases in which I thought I would do a nephrectomy, but I have watched these patients bleed and bleed, and when left alone they have recovered. Why do they recover? Granted that the kidney is extensively destroyed, we know these patients are not good objects for operation; they are suffering from considerable shock, and the manipulation necessary to find and grasp the bleeding artery, which perhaps has already become partly or completely occluded by blood-clot, and then start up hemorrhage in a fresh field, is attended with more harm than if we let these patients alone. We know from our experimental work on the kidney that if we tie off the renal vessels, and leave the kidney *in situ*, that kidney undergoes complete atrophy, and within a period of a few months the kidney will be a mass of cicatricial tissue. That condition undoubtedly takes place in a certain proportion of cases where the kidney has been severely injured.

DR. E. W. ANDREWS, Chicago: I have seen a man with a ruptured kidney on whom I had operated, and declined to remove the kidney because I thought I had successfully ligated the bleeding point, three days afterward get another severe, violent hemorrhage and die within a few minutes. We cannot get away altogether from the old teaching that a ruptured kidney is apt to cause death when conservatively treated, that is, nothing being done in the way of interference. I do not think we should stand by and let these patients with ruptured kidney have one hemorrhage after another without doing something for them; but it does not necessarily follow that nephrectomy is the only operation of choice in these cases, for sometimes, in addition to ligating the bleeding points, we can close the injured kidney with rows of mattress stitches, and if such an operation is done under aseptic conditions, it might give a percentage of successful results which would compare favorably with nephrectomy as a life-saving measure.

DR. WALTER COURTNEY, Brainerd, Minn.: I have seen many cases of injury of the kidney. If the surgeon will wait a few days, as he may in most cases, provided hemorrhage is not alarming and secondary anemia has not taken place, a large number of these cases will gradually clear up, and it will be found that the kidney has only been contused.

DR. JAMES E. MOORE, Minneapolis: It is only in exceptional cases that a nephrectomy is justified for rupture of the kidney. A patient was brought into the University Hospital recently, thirteen days after he had been thrown in a run-away accident, and presumably had sustained a ruptured kidney. He was brought to us in a moribund condition with his bladder full of clotted blood. He died. At the post-mortem examination we found that he had sustained a rupture of one of the terminal branches of the renal artery just before it entered the kidney, and the presence of blood in the urine was accounted for by the fact that through pressure the blood was transmitted along and had broken through into the pelvis of the kidney at a point below and finding its way down the ureter into the bladder.

DR. DONALD MACRAE, Council Bluffs, Ia.: It seems to me, it is well to take a middle ground in dealing with injuries of the kidney. If we make a positive diagnosis of post-peritoneal rupture of the kidney or of contusion, the case is not fraught with as much danger as other forms of injury to this organ. But if we find a patient is failing, we should resort to incision, with drainage, or whatever is necessary to be done at the time. It helps better, however, not to fuss with the kidney if we can help it.

Commissions and Division of Fees

DR. JOHN P. LORD, Omaha, Neb.: Realizing that the practice of fee-division, joint fees and giving commissions is increasing at an alarming rate among the younger element, and that in many cities and towns it is the usual thing, I undertake to arouse our members from their seeming lethargy. We teachers and hospital surgeons, as a rule, are established in our respective communities, and have not felt the force of this evil to so great a degree as to compel action. Those

who follow will feel it keenly. Many young men are wrestling with this problem and will yield to the general trend of practice unless some moral force within the profession or the effect of publicity checkmates this menace to professional honor, dignity and decency. I agree with those who favor publicity as the speediest and most effective remedy. We should maintain a professional and public sentiment against any countenance of graft. The practitioners who have for years adhered to an inelastic fee bill find themselves with their financial wings clipped, and unable to rise above the level of customary fees. The specialist is something of a law unto himself and most often gets what he asks. These practitioners, therefore, avail themselves of the specialist's faculty of fee getting and ask him to add a sum for them, as the people would object to paying them a proper amount.

Our medical schools have been remiss in their ethical instruction to students. The subject has been eschewed in some faculties for fear of engendering feeling, developing strife and endangering the integrity of the organization. The same silence has prevailed in medical societies because it might cost something to speak. There has already been more harm done than can be overcome for a generation. Delayed action means more sacrifice. The organized profession should busy itself in reformation and take its stand in our medical colleges, hospitals and societies, and as individuals, and educate the public and reform our own members. The most hopeful view may be taken of the result. Any practice which even smacks of graft, or of obtaining money under false pretenses, cannot endure before a righteous public opinion. Nor will it continue in a profession which has cherished ideals from Hippocrates and the whole line of medical saints, religiously followed by the vast majority during all the ages of the history of medicine.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Dec. 14, 1910

The President, DR. HENRY LEFFMANN, in the Chair

Surgical Pathology of Chronic Constipation

DR. L. J. HAMMOND: The surgical problem involved in chronic constipation concerns itself with those forms of constipation the result of mechanical factors which act either by inducing organic changes or local disease of the bowels. Chronic constipation is not a disease but a manifestation of disturbance or disease which alters intestinal function. Improvement follows the correction of such alteration. The surgeon frequently notes the existence of all sorts of variations from the normal relation and position of the abdominal viscera directly responsible for many cases of chronic constipation. The treatment of a person presenting the chain of symptoms resulting from mechanical obstacle to free intestinal drainage should be palliative only so long as is necessary to determine the character and extent of the pathology. In the majority of cases, to secure permanent benefit, the surgical treatment need go no further than the correction of malformation and faulty positions, division of bands, breaking up of adhesions, the removal of tumors, the replacement of the displaced viscera and removal of cicatricial strictures. If a stricture involves a greater portion of the intestinal wall than the serous coat, excision and anastomosis may be required. The more radical operation of colopexy advocated by Lane may be left to that extremely small group of cases in which, from long standing ptosis, the viscera have become so hopelessly displaced, angulated and dilated that it is impossible to restore drainage sufficient to empty the loaded sacculated loops.

Symptoms and Complications of Constipation

DR. DAVID RIESMAN: Strictly speaking, constipation is in itself only a symptom, and not a disease entity, and thus imposes on the physician the obligation to search out its cause. A thorough physical examination may reveal doughy masses in the abdomen, a contracted colon or ptosis of the viscera. Hyperchlorhydria is present in many cases and the constipation yields with the cure of the gastric condition. Anal fissure or hemorrhoids may be present either as cause or effect.

Constipation may be due to poisons, especially lead. In the majority of ordinary cases of constipation assimilation is probably too good, so that there is not enough residue to ferment under the influence of bacteria or mechanically to stimulate intestinal peristalsis. To this fact the constipation of many infants may be ascribed. The proof of auto-intoxication of gastro-intestinal origin is not conclusive. Indicanuria is not a correct measure of intestinal putrefaction; neither is the estimation of the amount of conjugate sulphates in the urine. A considerable quantity of such substances is eliminated in the feces and would have to be estimated if the degree of intestinal putrefaction is to be determined. Intestinal auto-intoxication is a possible condition but there is no clinical test by which it can be measured. Various forms of constipation due to organic causes are discussed, especially those of malignant tumor, perisigmoiditis, chronic appendicitis; also those produced by hernia, fibrous bands, Meckel's diverticulum, stricture and ovarian disease, and by pressure from without. Whether constipation *per se* increases blood-pressure has not been definitely determined, but the benefit accruing to an apoplectic patient from a free evacuation of the bowels would point in that direction.

Discussion on Constipation

DR. FREDERICK J. KALTEYER: From a clinical point of view it should be our aim to study carefully the various clinical symptoms of constipation. Laboratory methods will not suffice in determining the degree of intestinal symptoms present. We should endeavor to treat patients as much as possible without drugs, having recourse rather to the hygienic, and to ingestion of foodstuffs with a large residue. The lower bowel is often at fault, and in such cases there should be cleansing with enemas of water or oil.

DR. LEWIS H. ADLER, JR.: It is important that the diet should contain food products allowing enough residue to stimulate peristalsis. In the matter of treatment, I direct the patient to go to the closet at a regular time each morning. If there is lack of tone, as is usually the case, I have them come to my office and use an injection. Another method of treatment used with excellent results is the use of a bag inserted at the sigmoidal junction inflated with air which tends to stimulate peristalsis. Exercise and the effort of proper breathing are helpful factors in treatment. I am opposed to the use of very large injections in the ordinary functional case of chronic constipation.

DR. ERNEST LAPLACE: We should remove all possible causes, surgical and organic, that lead to constipation. There are certain forms of intestinal stasis resulting from long-continued malnutrition which should be corrected.

DR. GEORGE ERETY SHOEMAKER: Much of the failure in treatment is due to the lack of persistence on the part of the patient. There are few who will give the time, money and effort to the overcoming of this troublesome condition. We tell the patient to go to the closet at a fixed hour, but this may mean the establishment of a separate toilet for the patient. Then, too, the patients must not be hurried for fear they will be seen, or otherwise made uncomfortable. Attention to the diet, the ingestion of a sufficient amount of water and the carrying out of proper methods of exercise for a sufficient length of time will often work a wonderful cure, but it takes time.

DR. ALFRED HAND, JR.: I agree with those who have advocated conservative treatment, and yet I would emphasize the fact that a number of patients need surgical treatment. Many cases are due to definite inflammatory changes in the abdominal cavity and in these conservative treatment does not avail.

DR. DAVID RIESMAN: I agree with what has been said about the value of habits and food. One article of food which has given satisfactory results is an apple eaten at night, thoroughly masticated, and taken with a glass of water. Another measure of value is the massage roller, the applications following the line of the colon. Low injections of cottonseed oil at night and held in all night have effected cures in a certain proportion of cases of the ordinary type of constipation.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

January 7

- 1 Treatment of Gonorrhea in Women. H. J. Boldt, New York.
- 2 Primary Sarcoma of the Appendix. C. A. Powers, Denver.
- 3 Nervous Affections and Adjustments of the Eyes. G. T. Stevens, New York.
- 4 Optic Nerve Changes and Cranial Malformations. A. Gordon, Philadelphia.
- 5 Twilight Talks with the Doctor. G. F. Butler, Chicago.
- 6 *Lymphoid Degeneration of the Conjunctiva. H. W. Wandless, New York.
- 7 Eosinophilia and Anaphylaxis. E. Moschcowitz, New York.
- 8 Manic-Depressive Insanity or Recurrent Insanity. M. Talme, New York.
- 9 *End-Results of Surgical Operations on Nervous Women. S. T. Rucker, Memphis.
- 10 Diphtheria of the Vulva in a Child of Three. L. L. Smith, Washington, D. C.

6. **Lymphoid Degeneration of the Conjunctiva.**—It is Wandless' belief that trachoma is a non-specific disease; that it is in reality a lymphoid degeneration of the conjunctiva, a title he proposes for trachoma as being far more expressive. The principal lines of thought embodied in his paper are: (1) trachoma is non-specific and non-contagious; (2) follicular conjunctivitis and trachoma are one and the same disease; (3) pannus must be regarded as reparative; (4) trachoma is evidently chronic and self-limited in its nature; (5) predisposition and susceptibility are important causative factors; (6) trachoma may be caused by one or more of a number of agencies; (7) digestive disturbances, including auto-intoxication, are potent in the cause of trachoma; (8) errors of refraction deserve careful consideration as contributing causes of trachoma; (9) adenoids of the nasopharynx and trachoma are similar processes; (10) heredity, which has been practically excluded from causation, is undoubtedly an important factor.

9. Abstracted in THE JOURNAL, Dec. 3, 1910, p. 2005.

Medical Record, New York

January 7

- 11 Increasing Frequency of Inherited Syphilis and Importance of Its Early Recognition from the Standpoint of the Ophthalmologist. C. S. Bull, New York.
- 12 Hints for the General Practitioner on the Nature, Etiology and Early Diagnosis of Insanity. C. F. Macdonald, New York.
- 13 Pellagra. J. Collins and L. Sheldon, New York.
- 14 Ventilation of Kitchens and Bakeries. W. A. Evans, Chicago.
- 15 Surgical Anatomy of the Abdominal Wall with Reference to Appendectomy. W. E. Tobie, Portland, Maine.
- 16 Theory as to the Untoward Effects of Diphtheria Antitoxin; Prophylaxis in Suspicious Cases. R. Wallace, Chattanooga, Tenn.
- 17 The American Game of Football: Is It a Factor for Good or Evil? M. J. Clurman, New York.

Boston Medical and Surgical Journal

December 29

- 18 *Principles Underlying the Study and Treatment of Chronic Arthritis. H. W. Marshall, Boston.
- 19 Radium Therapy. L. Wickham, Paris.
- 20 *The Care and Management of the Tabetic Bladder; Etiology. J. D. Barney, Boston.
- 21 Biography of Charles Spon, M.D. C. G. Cumston, Boston.

January 5

- 22 *Prevention and Treatment of Typhoid with Antityphoid Vaccine. F. F. Russell, Washington, D. C.
- 23 *Antityphoid Inoculation as Introduced into Certain Training Schools for Nurses in Massachusetts. M. W. Richardson and L. H. Spooner, Boston.
- 24 The Fresh-Air School. J. Perkins, Providence, R. I.
- 25 *Care and Management of the Tabetic Bladder: Prognosis and Treatment. J. D. Barney, Boston.

18. **Treatment of Chronic Arthritis.**—Marshall considers arthritis a symptom of many diseases. The most severe deforming types that stubbornly resist treatment and the mildest kinds that are easily controlled and permanently cured, he thinks, have similar origins. They differ only in the degree of severity with which the underlying causes act. Arthritic disease in every stage may often be modified by treatment, sometimes only slightly, and sometimes to a great degree, permitting permanent cures not infrequently. Proper

application of simple hygienic measures and correction of defective personal habits are the most adequate means of treatment in the early stages. Increased efficiency in treatment depends on greater clearness in understanding normal physiologic conditions that control health of joints, and also increased skill in treating diseases of other organs and infections that act as causes.

20. Causes of Urinary Disturbances in Tabes.—It is pointed out by Barney that the urinary disorders of tabes are dependent on (a) a disturbance in the transmission of sensory impulses from bladder, (b) incoordination of the muscles of micturition, (c) urinary infection.

22 and 23. Antityphoid Inoculation.—The authors of these two papers favor antityphoid vaccination. They claim that the inoculated individuals have acquired an increased resistance to typhoid infection which will last for several years at least.

25. Treatment of Bladder Infection in Tabes.—According to Barney, infection of the urinary tract occurs in over 50 per cent. of patients with tabes dorsalis. The mortality from such an infection is nearly 60 per cent. Catheterization and irrigation of the bladder, at regular and frequent intervals, combined with the constant use of an efficient urinary antiseptic will (a) delay, prevent or reduce the activity of urinary infection; (b) postpone the appearance of residual urine, or diminish its amount if present; (c) relieve symptoms. Reeducation of the muscles of micturition, combined with local treatment, will cure or relieve most of the symptoms which harass the life of a tabetic. It is, therefore, of the utmost importance. Barney urges that the combined treatment of the nervous system and of the urinary tract is essential for the welfare of the patient.

Lancet-Clinic, Cincinnati

December 31

- 26 Pathology and Etiology of Dysmenorrhea. J. W. Rowe, Cincinnati.
- 27 Cardiac Weakness, Its Causes and Treatment. J. H. Honan, Bad Nauheim, Germany.

Medical Fortnightly, St. Louis

December 26

- 28 Gases in Their Relation to the Body. A. L. Benedict, Buffalo, N. Y.
- 29 Spina Bifida. W. L. Crosthwait, Holland, Texas.

American Medicine, Burlington, Vt.

December

- 30 Pyelitis in Pregnancy, Its Etiology and Cystoscopic Diagnosis. E. McDonald, New York.
- 31 Clinical Observations on Blood-Pressure with Special Reference to the Effect of Prostatic Massage. D. M. Cowie, Ann Arbor, Mich.
- 32 A New and Safe Method for the Submucous Removal of the Deflected Bony Septum. O. Glogau, New York.
- 33 Tuberculous Pericarditis and Myocarditis. F. O. Manning, New York.
- 34 Peritonsillar Abscess with Description of a New Instrument for Opening and Irrigating the Abscess Cavity. H. Hays, New York.
- 35 Results Obtained with Intravenous Medication. J. F. Sommes, Vincennes, Ind.

University of Pennsylvania Medical Bulletin

December

- 36 A Case of Patent Ductus Arteriosus Botalli. E. H. Goodman, Philadelphia.
- 37 Early Operation for Psoas Abscesses. J. K. Young, Philadelphia.
- 38 The Medical Side of Benjamin Franklin. W. Pepper, Philadelphia.

New York State Journal of Medicine

December

- 39 *Control of Typhoid in the Army by Vaccination. F. F. Russell, U. S. Army.
- 40 *Relation of the Interstitial Cells of the Testicle to Its Internal Secretion. A. M. Pappenheimer and B. Schwartz, New York.
- 41 *Latest Experiences with Salvarsan (606). W. Weichselmann, Berlin.
- 42 Early Diagnosis of Syphilis Through the Living *Spirochæta Pallida*. E. W. Ruggles, Rochester, N. Y.
- 43 Gonorrheal Arthritis Treated by Gonococcus Vaccines. G. R. Satterlee, New York.
- 44 The Objects and Aims of Medical Education. J. Van Duyn, Syracuse.

39. Also published in the *Boston Medical and Surgical Journal*, Jan. 3, 1910; see Abstract No. 22.

40. Relation of Interstitial Cells of Testicle to Its Internal Secretion.—Illustrations are cited by Pappenheimer and Schwartz to show that the orderly development of the primary and secondary sexual characters is controlled by complex factors—some of which at least, lie without the genital sphere itself. While the authors do not deny that the testicle exerts a definite chemical influence on the whole organism, they are unwilling to admit that the evidence at hand is sufficient to connect the interstitial cells specifically with the supposed internal secretion. Not only has it been impossible for them to eliminate the Sertoli cells from consideration, but it has been shown that the interstitial cells may be abundantly present in cases of arrested or incomplete development of the sexual characters. They believe that it is highly probable that further research will reveal correlations and antagonisms between the genital organs and other glands of internal secretion, and that the too simple theory which ascribes the entire complicated series of changes attending the development of the sex characters, to the interstitial cells alone, will have to be modified or abandoned.

41. Experiences with Salvarsan.—The first attempts at the cure of hereditary syphilis in the new-born were in the patients afflicted with pemphigus and who were no doubt doomed to an early death. In some a dose of 0.3 gm. produced symptoms which could be ascribed to toxemia produced by the destruction of a large number of spirochetes from the internal organs. Weichselmann then gave doses of from 0.015 to 0.02 gm. which was repeated in from eight to twelve days. The first patient was cured after having received 0.015 gm. on April 4 and on April 15. No recurrence has taken place thus far. But, because the Wassermann reaction, which had become negative, again became positive on June 27, another injection was given which resulted in a negative reaction. Weichselmann has in this way treated five other cases of syphilis in the newly-born, and in all the infants the symptoms have been arrested without any harmful after-results. This encouraged him to reinject with a stronger dose patients with most malignant syphilis previously reported, who had shown brilliant results, but in whom small remaining ulcerations showed that a complete cure had not been effected, owing no doubt to too small doses. These second injections were made when complete elimination of the first dose could be safely expected. The number of partial failures is infinitely small compared to the large number of prompt cures; Weichselmann has now treated 1,050 cases.

The number of reinjections for recurrence is also remarkably small. In the majority of cases only very small foci could be detected; the exception to this was two cases. In one patient with originally severe syphilis, Weichselmann found fifteen small and much softer infiltrations and in another, injected on June 29 with 0.5 gm., a second injection was given, because the Wassermann reaction was still positive on August 23 and the man was suffering at that time from impetigo capitis. Other reinjected cases were, one of periostitis; two of iritis; one of chorioiditis; one a slight trochlear paralysis; one case of abducens paralysis and one case of angina. In another rather unusual case the patient received a second injection. This patient was a strong, otherwise healthy man who had received 0.5 gm. acid solution on June 16 for a primary lesion and papular syphilides, and who had on August 24 a curious attack of an aura ascending from the legs accompanied by loss of consciousness and biting of tongue. The Wassermann reaction was positive at the time of the second injection. In two patients, in the second and third months respectively after the injection, and with a negative Wassermann reaction, occurred severe headaches which did not yield to usual headache remedies, but which were promptly cured by a second injection. In some of these cases a previous mercury treatment was unsuccessful.

Recognizing fully the severer lapses observed by others, Weichselmann is of the opinion that these relapses were probably due to the setting free of encapsulated deposits by the remedy. These observations have been made in the late stages of cases treated with mercury, in which the repeated courses of treatment had removed most of the spirochetes in

the body. He believes that we should not exceed the well-established curative dose of from 0.5 to 0.6 gm. for men and 0.45 for women, which may be repeated in the infrequent relapses. Weichselmann has now treated more than 1,000 cases by the subcutaneous or intramuscular injection of doses from 0.45 to 0.6 gm. and has never seen any toxic effects. Slight degrees of arsenic poisoning have occurred in a few cases, such as gastric symptoms and atonica of the intestine, which may be explained by the well-known effects arsenic has on the contractile tissues of the mesenteric vessels.

Among the contra-indications to the use of salvarsan have been mentioned weak heart and organic cardiac disease. Weichselmann has treated two patients with dilatation of the aorta with small aortic aneurysm at first with doses of 0.3 and 0.1 gm. respectively, without doing any damage. He has also treated successfully a man, aged 85, with extensive arteriosclerosis, suffering from a primary sore of the prepuce and papular syphilitic skin eruption, the dose being 0.4 gm. He has grave doubts about treating patients with very weak and flabby heart-muscle, such as we often find in tabes; equally so, patients with stenosis, because he is afraid of the depression of arterial blood-pressure which takes place in arsenic poisoning. But a weak heart is furthermore a contra-indication on account of the hypersensitiveness to the medicine found in some patients. The second important fear about the new remedy was in regard to damage to the optic nerve, on account of such effect by other arsenic derivatives. This fear has, however, so far not been confirmed. At first all patients with diseases of the optic nerve were excluded; later, in some doubtful cases, they were treated. Weichselmann has, in six cases of either beginning or advanced optic nerve disease, used the remedy in the hope of arresting the progress of the atrophy. In none was the nerve condition made worse, so that further careful trials in such cases should be made.

New Mexico Medical Journal, Las Cruces

December

- 45 Surgical Progress in the Past Ten Years. J. W. Colbert, Albuquerque.
- 46 Treatment of Wounds. F. de la Vergne, Albuquerque.
- 47 Operative Treatment of Uterine Retrodisplacements. C. M. Yater, Roswell.

Montreal Medical Journal

December

- 48 Medicine of the Earlier Days of Montreal. W. G. Stewart, Montreal.
- 49 The Cure of Syphilis. F. McK. Bell, Ottawa.
- 50 Typhoid Perforations and Perforations of the Gall-Bladder. G. E. Armstrong, Montreal.
- 51 Double Radical Frontal Sinus and Antrum Operation. E. H. White, Montreal.
- 52 Miliary Tuberculosis of the Chorioid. G. H. Mathewson, Montreal.

Northwest Medicine, Seattle

December

- 53 Bilateral Renal Calculus. E. O. Jones, Seattle.
- 54 The Fibroid Uterus. A. E. Rockey, Portland, Ore.
- 55 Clinical Cases of Pellagra. R. E. Dunlap, Portland, Ore.
- 56 Etiology of Cholecystitis. J. E. Else, Pullman, Wash.
- 57 *Tochil, or Endemic Hemoptysis. M. M. Null, Seattle.
- 58 Facts Concerning Myopia of Children. E. E. Maxey, Boise, Idaho.
- 59 Surgical Treatment of Cancer of the Prostate. G. S. White-side, Portland, Ore.
- 60 Vaughan's Typhoid Residue. H. E. Coe, Seattle.
- 61 Is a High Total Acidity of the Urine Pathognomonic of Cardiac Disease? A. M. Smith, Tacoma, Wash.
- 62 Should Cobwebs Cover the Obstetric Forceps? G. S. Wright, Friday Harbor, Wash.

57. **Tochil, or Endemic Hemoptysis.**—Tochil, or endemic hemoptysis, is an endemic disease, caused by a distomum or flat worm that burrows in the tissues, characterized by a chronic cough, a rusty, brown pneumonia-like sputum, hemoptysis, anemia and toxemia. It is limited in its geographic distribution. So far as Null knows, it is found only in Korea, Formosa, and parts of Japan. A doubtful case has been reported in China. No cases have been reported in America. Null's patient was a Korean who came from Seoul five years before; for two years he had been coughing, and for one year he had been spitting blood. He was 26 years old, large and well built. His pulse was 80, respiration 22, temperature 98.5 F. He did not complain of pain, and his appetite was moderately good. Physical examination showed

the apices sunken on both sides, slight dulness on the right side, with a small cavity in the upper lobe. Expansion was normal. Urine was normal. Blood-examination showed Hg 60 per cent., erythrocytes 4,800,000, leukocytes 10,000. He was weak—not able to do normal labor. Having seen many cases of the disease in the Orient, Null at once recognized it and an examination of the sputum proved it to be tochil.

Null regards the occurrence of tochil, or endemic hemoptysis in Seattle as a very important matter to the Pacific Coast states, as the conditions here are almost identical with those of central Korea and parts of Japan as regards climate, mountains and valleys, temperature and water supply, so that if the disease once gets a foothold in this country we can hardly expect to eradicate it. One patient in the course of a day can throw out indiscriminately thousands of eggs from his lungs, enough to infect a village or a whole valley. Therefore, it is important for boards of health to look after the matter in time to prevent it gaining an entrance into the country. Most frequently the victims of tochil live a long time, and become anemic and weak, being scarcely strong enough to move about. They are then called indolent, the infection producing very much the same conditions socially as the hookworm in the South. If one man out of four is an invalid, as in some sections of Korea, then we can see to what extent the ravages of this disease may spread.

Old Dominion Journal of Medicine and Surgery, Richmond

December

- 63 Service in the Navy Medical Corps. W. S. Thayer, Baltimore.
- 64 Diagnosis and Pathogenesis of Acute Anterior Poliomyelitis. A. Gordon, Philadelphia.
- 65 Diagnosis of Syphilis by Demonstration of *Spirocheta Pallida*. L. T. Price, Richmond.
- 66 Budd of Chatham. H. A. Royster, Raleigh, N. C.

Long Island Medical Journal

December

- 67 Relation of Flies to the Transmission of Infectious Diseases. H. D. Pease, New York.
- 68 Eradication of the House-Fly. F. Overton, Patchogue, N. Y.
- 69 *Surgery Among the Insane. W. W. Skinner, Geneva, N. Y.
- 70 Treatment of Fractures of the Lower End of the Radius. A. H. Baker, Elmira, N. Y.
- 71 Methods of Study and Treatment of Diabetes Mellitus. J. R. Williams, Rochester, N. Y.
- 72 Abdominal Contusions. M. Figueira.
- 73 Use of Desiccated Liver Extract in Diabetes and Chronic Gastro-Intestinal Auto-Intoxication. O. L. Mulot, Brooklyn, N. Y.

69. **Surgery Among the Insane.**—Regarding the mortality rate of operations on the insane, it has been Skinner's experience that in the purely psychic states operations are borne as well as among the sane. To be sure, he says, operations should be avoided during periods of excitement, since in those periods the vital powers are at their lowest ebb and the tendency of the disease itself to a downward or fatal course is a factor always to be borne in mind. In the forms of mental disease accompanied or caused by degenerative changes throughout the nervous system, such as paresis and cerebral syphilis, there is little doubt but that operative measures, with or without anesthesia, may hasten the terminal period. In these forms of disease, abdominal operations are especially hazardous, since the relaxations of muscle fiber render intestinal paralysis and obstructions much more frequent in occurrence, and resistance to infections more feeble. One fact which has impressed itself vividly on Skinner in his work the past seven years in the state hospital is the frequency of intestinal obstructions, especially of the volvulus type, in the insane. Both paretics and demented seem extremely liable to this accident; and, owing to the mental condition of these patients, the recognition of the trouble is extremely difficult until after gangrenous or peritonitic changes have so emphasized the symptoms as to call attention to the true state of affairs. In four cases he found parts of large portions of the intestine literally black with gangrene, and in one of these sloughing and escape of fecal contents had occurred. He says that in the purely depressive types of insanity benefit mentally may be expected, when, and only when, the local condition is the active factor in the causation of the health depression which underlies the insanity. The female paranoiac dement neither loses her obsessions nor gains her logical power on losing the uterus. For these reasons Skinner emphasizes

the absolute necessity of making accurate diagnoses of the mental disease before making roscate prognoses in operations on the insane.

St. Louis Medical Review

December

- 74 Gonorrhea in Its Relation to Puerperal Morbidity. D. Longaker, Philadelphia.
- 75 Iritis: Symptomatology, Diagnosis and Treatment. J. Clothier, Philadelphia.
- 76 Early Detection of Tuberculosis. J. C. Blossom, Richmond, Ind.
- 77 Medical Treatment of Chronic Interstitial Nephritis. G. B. Lake, Wolcottville, Ind.
- 78 Referred and Reflected Symptoms of the Abdomen. H. E. Randall, Flint, Mich.
- 79 Conditions Governing the Choice of Operation for Vesical Calculus. W. L. Munro, Providence, R. I.
- 80 Treatment of Rheumatism. W. F. Barclay, Pittsburg.

The Journal of Cutaneous Diseases, New York

November

- 81 Bacteriotherapy in Certain Diseases of the Skin. M. F. Engman, St. Louis.
- 82 Vaccine Therapy as Applied to Skin Diseases. T. C. Gilchrist, Baltimore.
- 83 Vaccine Therapy in the Treatment of Diseases of the Skin at the Massachusetts General Hospital. H. P. Towle, Boston, and G. P. Lingenfelter, Denver.
- 84 *Lichen Nitidus. R. L. Sutton, Kansas City, Mo.
- 85 Dermatitis Vegetans. D. K. Smith, Toronto.
- 86 Scrofuloderma Treated with the Roentgen Ray. A. G. Nadler, New Haven, Conn.

December

- 87 The Nature of Eyelid Xanthoma. S. Pollitzer, New York.
- 88 *Cancer in Tar Workers. J. F. Schamberg, Philadelphia.
- 89 *Granuloma Pyogenicum. U. J. Wile, New York.

84. **Lichen Nitidus.**—Lichen nitidus is described by Sutton as a chronic, papular disease of the skin, probably tuberculous in origin, which is characterized by the presence of minute, painless, flat-topped, shiny, flesh-colored lesions which do not exhibit a tendency to grouping and never become confluent. Histologically, the lesion is a granuloma (not a tubercle), which originates in the tip of a papilla, and as it gradually increases in size, follows the lines of least resistance and grows upward into the epidermis, shutting off and enclosing any projecting cell masses that may result from pressure or cell overgrowth. Sutton reports one case.

88. **Cancer in Tar Workers.**—Schamberg examined about twenty men whose work caused them to become besmeared with tar. In the manufacture of tar paper the men's arms are soiled with tar and their clothing is more or less saturated. Most of the men stated that they suffered from time to time from outbreaks of "yellow heads" on their arms, but these soon passed away. In a number of workmen, he saw mild acneiform eruptions on the arms, representing a folliculitis. Five workmen were found showing evidences of beginning or well-developed tar-cancer.

89. **Granuloma Pyogenicum.**—Wile cites two cases of granuloma pyogenicum, a condition clinically characterized by a pedunculated, rapidly growing, slightly painful, easily bleeding tumor, which, microscopically, can be regarded as simple hypertrophic granulation tissue. At times the tumor is painful, as often not so. Almost without exception these tumors are pedunculated, there is marked tendency to recurrence after removal, provided cauterization of the base has not been done. Superficial ulceration occurs in about half the number of cases, and when present gives rise to frequent and easily induced hemorrhage. Histologically, too, there is a great uniformity in the findings. In all cases, the tumor is one primarily of young connective tissue; in all, the presence of blood-vessels in greater or less number is noticeable. The plasma cell content of the tumors was in no case sufficiently striking to attract marked attention, although present to a degree in all cases. Wile believes that the entire group of so-called pseudo-botryomycosis, granuloma simplex, granuloma telangiectoides, and granuloma pyogenicum, may be placed in one class, and may be regarded as ordinary granulation tissue, appearing, for as yet undetermined reasons, in the unusual form of a tumor. The etiologic factor is not a fungus, but probably the *Staphylococcus aureus*, perhaps in an unfavorable soil or in an attenuated form. The histologic changes are essentially the same for all forms, minor differences being simply in degree of vascularity and inflammation.

In no instance is there any connection between these tumors and the sweat-glands. Although never malignant, the growths tend to recur, unless cauterization of the base is practiced. The treatment consists in removal and cauterization.

Journal of Ophthalmology and Otolaryngology, Chicago

December

- 90 Lymphangiectasis Multiplex. J. F. Burkholder, Chicago.
- 91 Salvarsan: Its Therapeutic Possibilities in Ophthalmology. W. O. Nance, Chicago.
- 92 An Unusual Sequestrum Resulting from Suppurative Otitis Media. A. H. Andrews, Chicago.
- 93 Cocain as a Local Anesthetic. B. H. Breakstone, Chicago.

Proctologist, St. Louis

December

- 94 Treatment of Painful Fissures and Hemorrhoids by High-Frequency Currents. A. Tierlinck, Ghent, Belgium.
- 95 Sepsis of the Rectum Due to Trauma. C. H. Wintsch, Newark, N. J.
- 96 Colica Mucosa. E. H. Thrailkill, Kansas City, Mo.
- 97 Colitis. W. H. Stauffer, St. Louis.

Buffalo Medical Journal

January

- 98 *Intussusception in Infants. H. E. Hayd, Buffalo.
- 99 Epilepsy, the Neuropathic Diathesis and Heredity. G. M. Gould, Ithaca, N. Y.
- 100 *Case of Intrapertitoneal Hernia. W. L. Wallace and J. S. Allen, Syracuse, N. Y.

98. Abstracted in THE JOURNAL, Oct. 15, 1910, p. 1403.

100. **Intrapertitoneal Hernia.**—In the case cited, all the small intestines, except the first and last three inches, with the entire mesentery, were contained in a hernial sac. The intestines passed behind a band in the free border of a fold which formed an inferior duodenal fossa, and then pushed anteriorly, distending the double layer of the inferior duodenal fold to form a sac which filled the peritoneal cavity. The sac hung loosely, connected with the posterior abdominal wall by a comparatively narrow neck or pedicle, having a mouth above and to the left which was a little larger than a silver dollar. The intestines were carefully withdrawn and when the sac was half emptied, the mass was delivered outside the abdomen. The remainder of the intestine now having been withdrawn, the collapsed sac, which was then about six inches long, hung from the posterior abdominal wall just below the duodeno-jejunal flexure. The band in the neck of the sac contained no blood-vessels of any size, and the sac which was formed by a double layer of peritoneum was tied off and removed. The wound was closed without drainage. Three weeks later the patient had recovered and left the hospital.

Journal of the Indiana State Medical Association, Fort Wayne

December

- 101 *Serodiagnosis of Syphilis. J. P. Simonds, Indianapolis.
- 102 Tubo-Ovarian Hematocele Simulating Extrauterine Pregnancy. P. F. Martin, Indianapolis.
- 103 *Fracture of the Patella. P. J. Barcus, Crawfordsville.
- 104 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.

101. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1670.

103. Abstracted in THE JOURNAL, Nov. 19, 1910, p. 1837.

Journal of the South Carolina Medical Association, Charleston

November

- 105 Psychology of Pellagra. J. W. Babcock, Columbia.
- 106 Pain as a Symptom of Disease Involving the Right Half of the Abdomen. B. B. Steedly, Spartanburg.
- 107 Poliomyelitis, Its Etiology, Early Diagnosis and Treatment. T. A. Williams, Washington, D. C.
- 108 *Amebas as the Cause of Pellagra. W. B. Young, Rock Hill.

108. **Amebas as the Cause of Pellagra.**—It is Young's belief that pellagra is caused by one of the protozoa (amebas) which infects the large bowel, because, wherever amebas are found in the South, pellagra is also found, for amebas are found in every case of pellagra at some stage of the disease. It may require a severe saline purge and warming stage, but they can be found when the stools are properly searched. At autopsy, he says, ameba lesions can be found in every case of pellagra. The lesion may only be limited to a hyperemia, but that can be found. In all cases treated as amebiasis the patients improve of pellagra symptoms, if treatment is properly kept

up. Pellagra prevails in the months of April, May and June, on account of the ingestion of fruits and vegetables which contain quantities of sap. Thus the mucous membrane of the intestine becomes irritated and a more fertile field for the amebas is furnished. In July and August the trouble subsides in proportion as vegetables are less sappy. With the return of cooler weather in September and fresh crops of sappy vegetables, we have a return of the symptoms noticeable in the spring. Pellagra is more generally prevalent among poorly nourished people, and those with low vitality. Also its presence is to be noted in localities where the water is contaminated, where the hygienic surroundings are poor and the use of surface water is general.

Bulletin of the American Academy of Medicine, Easton, Pa.
December

- 109 The Teaching of Therapeutics. W. F. Waugh, Chicago.
- 110 Relation of the Individual to the Social Organism. J. H. McBride, Pasadena, Cal.
- 111 The Parent, the Strategic Point of the Present. C.-E. A. Winslow, Boston.
- 112 *Reduction of Infant Mortality in New York. T. Darlington, New York.
- 113 *Three Years' Experience of the Babies' Dispensary and Hospital of Cleveland in the Education of the Mothers. H. J. Gerstenberger, Cleveland.
- 114 *Outline for the Study and Prevention of Infant Mortality for Boards of Health of Small Cities. S. M. Gunn, Orange, N. J.
- 115 *Fit and Unfit Matings. C. B. Davenport, Long Island, N. Y.
- 116 *The Limits of Eugenics. A. G. Keller, New Haven, Conn.
- 117 *Responsibility of the Physician for Public Education in Physiology and Hygiene. J. M. Tyler, Amherst, Mass.
- 118 *The Foundations of Prevention. W. T. Sedgwick, Boston.
- 119 *The Concentration Plan of Teaching Medicine. H. A. Christman, Boston.
- 120 *The Medical Curriculum. W. H. Welch, Baltimore.
- 121 *State Boards and Entrance Requirements. H. Harlan, Baltimore.
- 122 *Teaching Ophthalmology. A. R. Baker, Cleveland.
- 123 *The College Association Standard. A. Flexner, New York.

112, 113, 114, 115, 116, 117 and 118. Abstracted in THE JOURNAL, Jan. 1, 1910, pp. 72, 73, 74 and 75.

119 and 123. Abstracted in THE JOURNAL, April 9, 1910, pp. 1228 and 1229.

120, 121 and 122. Abstracted in THE JOURNAL, April 16, 1910, pp. 1332 and 1333.

Journal of Nervous and Mental Diseases, Lancaster
December

- 124 *Seroreactions in Cases of Nervous and Mental Diseases. E. P. Corson-White and S. D. W. Ludlum, Philadelphia.
- 125 *Visual Disturbances in Multiple Sclerosis. T. Klingmann, Ann Arbor, Mich.
- 126 Case of Amyotonia Congenita. E. M. Hummel, New Orleans.
- 127 *Difficulties Encountered in Making a Diagnosis of Paralysis. G. H. Schwinn, Washington, D. C.

124. Abstracted in THE JOURNAL, July 16, 1910, p. 249.

125. **Visual Disturbances in Multiple Sclerosis.**—Klingmann says that prolonged visual disturbances without ophthalmoscopic changes are extremely rare in cerebral syphilis, but frequent in multiple sclerosis. Unilateral appearance of visual disturbances is common to both cerebral syphilis and sclerosis *en plaques*. Unilateral central, definitely circumscribed scotoma, with a normal field of vision in the opposite eye, is most likely to be due to syphilitic disease, it is always due to organic disease. Papillitis almost never occurs in multiple sclerosis, although hyperemia of the papilla at the beginning of sclerosis *en plaques* is not unusual, it is present in 14 per cent. of cases of cerebral syphilis. An absolute central scotoma is relatively rare in multiple sclerosis, frequent in neuritis axialis. A central scotoma is not infrequent in both acquired and congenital syphilitic disease of the central nervous system. An unilateral, paracentral scotoma is indicative of a lesion in the optic nerve in the neighborhood of the foveal fibers and is most frequent in syphilis. Visual disturbances without ophthalmoscopic changes almost never occur in organic lesions of the optics; and in most chronic diseases of the optic nerve and chiasma, the fundus, the visual field and central visual acuity are abnormal, except in sclerosis *en plaques* where negative ophthalmoscopic findings are frequently associated with abnormal visual acuity. Scotomata due to functional nervous disease are relative, never absolute. Hysterical scotomata are so infrequent that they should always suggest organic disease. In true multiple sclerosis early in the disease

the most frequent symptom complex referred to the vision is: blurring or cloudiness of vision, negative ophthalmoscopic findings, absolute paracentral scotomata, normal peripheral field with little or no disturbance of central visual acuity. This combination is indicative of multiple sclerosis and when associated with exaggerated tendon reflexes is sufficient to establish this diagnosis. If the scotomata are but relative, hysteria would still be a possibility. If, however, the Babinski toe reflex is present on one or both sides, it can positively be eliminated. Klingmann cites twelve cases.

127. **Making a Diagnosis of Paresis.**—Schwinn urges that in all cases presenting clinical evidences of paresis, and in all cases in which there is an element of doubt as regards diagnosis, a cytologic and chemical examination of the cerebrospinal fluid should be made. Also, an examination of the blood and cerebrospinal fluid for the Wassermann reaction should be made. Further, all cases of paresis, or suspected paresis coming to necropsy should be studied histologically, as the brain does not always present the typical picture described when viewed with the naked eye. Paresis is a diffuse process, and all parts of the cortex are more or less involved, presenting an infiltration which presents numerous plasma cells. This differentiates it from other meningo-encephalides which are more focal in character. Schwinn believes that with a negative Wassermann reaction one can positively exclude paresis.

Archives of Pediatrics, New York

December

- 128 Need of More Complete Registration of Births. J. H. M. Knox, Baltimore.
- 129 Nasal Diphtheria. E. E. Graham, Philadelphia.
- 130 *Cold Air in Treatment of Acute Respiratory Conditions. J. P. C. Griffith, Philadelphia, and L. E. LaFetra, New York.
- 131 A Present-Day View of Infant Feeding. T. N. Gray, East Orange, N. J.
- 132 Relation of Orthopedic Surgery to Pediatrics. S. A. Twinch, Newark, N. J.
- 133 *Nephritis in Children. A. W. Bingham, East Orange, N. J.
- 134 Mechanical Injuries of the Head in Infants and Children. H. Illoway, Cincinnati.
- 135 *Congenital Goiter. E. W. Mooney, Detroit.

130. Abstracted in THE JOURNAL, May 21, 1910, p. 1712.

133. **Nephritis in Children.**—The main object of the treatment of nephritis in children, says Bingham, is to rest the diseased kidneys and give Nature a chance to restore them to their proper function. The child should be kept in bed on a light diet, consisting either of milk alone or milk and a moderate quantity of some farinaceous food. The bowels are kept active and the skin encouraged to assist in the work of the kidneys. Warm baths and hot packs are valuable aids, as also saline injections per rectum. The skin must be kept warm. Only mild diuretics should be used in order not to irritate the already inflamed kidneys. Potassium bitartrate in the form of lemonade or orangeade is a valuable means of increasing the quantity of urine when necessary, for besides acting as a mild diuretic it is one method of getting the child to drink the desired amount of water. It is well to change the flavor of this drink, or the child may soon tire of it. When the pulse is of very high tension only a moderate quantity of water should be taken. The return to a general diet must be slow, and it is difficult to regulate this satisfactorily in all cases, as these children are always calling for a greater variety of food. Bingham emphasizes the importance of more regular examination of the urine in children, especially following the acute infectious diseases. By doing so, he says, we will be able to detect the disease in its incipency and save a certain percentage of cases from chronic nephritis and death.

135. **Congenital Goiter.**—Six cases are reported by Mooney. The following points are of interest in these cases: All six mothers were goiterous. Five mothers were multiparæ. One mother was a primipara. One mother had sugar in urine before labor. In one case the mother and grandmother were goiterous; in another the mother and two of her sisters were goiterous. In a third case there was a history of infection in the family. One child was born dead; one baby died two days after birth; one died two years after birth of bowel infection. Two were living when last heard from; another, 18 years old, was goiterous.

Laryngoscope, St. Louis

December

- 136 Present Status of Otolaryngology. J. F. McKernon, New York.
137 Nasal Phenomena of Neurasthenia. C. P. Grayson, Philadelphia.
138 Respiration for Tone-Production. F. V. Laurent, Philadelphia.
139 A Fatal Case of Quinsy in an Adult. J. J. Thomson, New York.
140 The Straight Method of Laryngoscopy. R. H. Johnston, Baltimore.
141 Method by Which an Open Safety-Pin Was Removed from the Bronchus Without Closing the Pin. O. W. Turner, Augusta, Maine.
142 Scleroma of the Upper Air Passages. J. W. Durkee, Brooklyn, N. Y.
143 Symptoms of Temporo-Sphenoidal Abscess. L. W. Dean, Iowa City, Iowa.
144 Apparatus for Administration of Ether and Chloroform Vapor. C. C. Collier, Chicago.

Journal of the Medical Society of New Jersey, Orange

January

- 145 *The Allenist as an Expert Witness. W. H. Hicks, Newark.
146 *Relation of Water to Malarial Fevers. J. Walters, Wharton.
147 Fracture of the Internal Condyle of the Humerus. J. J. Mooney, Jersey City.
148 *New Operation for Complete Vesical Hernia in Women. J. M. Rector, Jersey City.
149 Etiology, Pathology and Treatment of Concomitant, Convergent Strabismus. L. Emerson, Orange.
150 Refracting Opticians. J. Thorington, Philadelphia.

145, 146. Abstracted in THE JOURNAL, Aug. 6, 1910, pp. 527 and 528.

148. Operation for Complete Vesical Hernia in Women.—Operating through the abdominal wall, Rector first divides the peritoneum on the anterior surface of the uterus almost at the fundus, dissecting laterally, right and left, sufficiently far so as not to form a medium ridge with lateral valleys when the denuded bladder floor is brought upward. The floor of the bladder is dissected from its bed, pulled up until the sacculation disappears and sutured to the anterior uterine fundus and wall. Uterine fixation to abdominal wall is done, by three sutures, one posterior to the fundus, one to the fundus, and the third at or near the junction of sutured surfaces. In some cases there has followed, for a few days only, some pain and bladder irritation from the changed position. This has been transitory only and need cause no alarm. Any repair work necessary to vagina or vulva can be done at the same time. Patients are catheterized every four or six hours and the bladder is irrigated if necessary; they are kept in bed two to three weeks. The usual care to feeding and bowel action is given.

Woman's Medical Journal, Cincinnati

December

- 151 Word Tests for Complexes in Four Cases of Disturbed Mentality. M. K. Isham, Columbus, Ohio.
152 Servants as Carriers of Disease. E. W. Young, Boston.
153 "Nervousness" and Education. The Role of the Teacher. T. A. Williams, Washington, D. C.

Journal of the Michigan State Medical Society, Battle Creek

January

- 154 Problems in Sanitary Science. G. L. Kiefer, Detroit.
155 *Scopolamin and Morphin. W. H. Morley, Detroit.
156 Chloroform and Ether. N. N. Wood, Ann Arbor.
157 Technic of Anesthesia in Obstetrics. J. B. Whinery, Grand Rapids.
158 Anesthesia in Its Relation to Postpartum Hemorrhage. J. N. Bell, Detroit.
159 Administration of Inhalation Anesthetics. C. E. Boys, Kalamazoo.
160 *Proposed Solution for Certain Phases of Contract Practice. W. H. Haughey, Battle Creek.

155. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1674.

160. Solution for Phases of Contract Practice.—In self-protection, Haughey deems it wise for county societies to elect committees whose duties should be to arrange terms and fees with workmen and factories, whereby injured employees would be cared for by members of the county society. A concession in fee rate should be granted, and a guarantee of payment obtained. Such an arrangement would secure to the injured employee his choice in professional services available in his community, and ensure to the surgeon his entire fee instead of merely for the first call. Advantages, first, to the patient: assurance of interested attendance throughout the entire case. Second, to the factories: assurance that the injured

would receive competent surgical aid. Third, to the physician: assurance of not being robbed of professional acquaintance that he has labored years to establish.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

December 24

- 1 *Rest and Movement in Tuberculosis. R. W. Philip.
2 "Eye" in Sport. R. W. Doyne.
3 *Influence of Diet on the Formation and Healing of Acute Gastric Ulcer. C. Bolton.
4 Thyroid Grafting and the Surgical Treatment of Exophthalmic Goiter. E. W. H. Groves and C. Joll.
5 Common Causes of Discharge from the Ears, and Its Treatment. W. M. Mollison.

1. Rest and Movement in Tuberculosis.—While rest is helpful in the treatment of pulmonary tuberculosis, and indeed essential, at certain times, Philip emphasizes that the prolonged continuance of resting treatment is fraught with unsatisfactory results. In many instances the patients may seem to improve. Perhaps they put on weight in large amount. Often they become heavy and corpulent, but it is commonly mere fat; the skin textures remain pallid and toneless; the muscular tissue remains soft and flabby, and the individual himself is far from physiologically fit. So long as the tuberculous process is in active operation, toxins are readily elaborated and passed freely to the muscles with resultant progressive dystrophy. This dystrophy affects not only the muscles of the trunk and extremities, where it is evident, but affects likewise the heart-muscle, the muscles of the vessels, and the muscles of other viscera. At this stage the indication for treatment is mainly rest. Rest has the double advantage of tending to stay the active local lesion and of limiting the output of energy by the dystrophic muscles. On the other hand, when the tuberculous lesion is less active or in process of arrest, and the production and carriage of toxins is correspondingly less abundant and rapid, the dystrophic muscles tend to recover themselves physiologically. Nothing repairs muscular tissue so certainly as natural movement. This is the motif and guide in the institution of regular activity. As recovery proceeds further, the aim comes to be the restoration of physiologic function, both locally, so far as the respiratory function of the lung is concerned, and generally, so far as the circulation and the musculature are concerned. The process of repair is most readily traceable in the muscles of the trunk and extremities. By the institution of natural movements, the physiologic cure or "recreation" is assisted, and there follows a gradual return toward the normal condition of health of every organ. While natural repair is thus hastened by carefully adjusted movement, there is reason to suppose that at the same time a degree of relative immunization to tuberculosis is secured. It may be that under the influence of activity a process of auto-inoculation is instituted. That is to say, by reason of the accelerated circulation a certain amount of toxin is carried through the system. The presence of the toxin stimulates the system to react, and to produce certain opposing elements or antibodies. The amount of activity allowed must in every case be determined with exactness. Regard must be paid not vaguely to the nature of the case or the so-called stage of disease, but adjustment must be guided by the needs of the individual patient. Activity in excess may serve to aggravate the local process. The lung trouble may once more take on an acute character, and an especially significant point is that excessive discharge of toxins through the system may be recommenced. In other words, an exaggerated auto-inoculation may ensue with corresponding retardation of cure.

3. Diet and Gastric Ulcer.—Following careful experimentation by Bolton, the theory with regard to the part played by the gastric juice in the production of gastric ulcer receives further confirmation, because ulceration is the more rapidly produced in proportion as the gastric juice is allowed a longer period of contact with the wall of the stomach. The epithelium grows over the base of an ulcer more rapidly when the animal is given a milk diet than when it is given a meat diet.

In the case of a milk diet the base of a moderate-sized ulcer is usually completely covered by the twentieth day, while in the case of a meat diet, the same-sized ulcer would in most cases be uncovered in the center in that time. Frequently, in the case of meat-fed animals, the ulcer is completely uncovered on the twentieth day, the granulation tissue of the base of the ulcer having become necrotic. Such an ulcer may be only one-fifth of the size of the original ulcer owing to the contraction of the fibrous tissue in the base, although healing has only commenced at the edge. In the treatment of a case of ulcer of the stomach, Bolton holds that the following principles should be observed: (a) During the early stages of the healing of acute ulcer the patient should be given a food which does not stay long in the stomach and which does not excite a copious flow of the gastric juice. (b) The period of treatment in bed should be at least three weeks. (c) The starvation diet of the older physicians is not necessary, because the general nutrition suffers too much, and because ulcers heal well on some diet such as the above. (d) In the case of acute ulcers which are extending, or chronic ulcers, healing cannot be expected to occur in three weeks, because the ulcer must first be got into a suitable condition for healing, and then, owing to its size and thickness, the healing must take some weeks longer to be completed, so that the treatment in bed is to be conducted like that of simple acute ulcer, but extended over a period twice as long. (e) Since in many cases of gastric ulcer there is hyperacidity of the gastric juice, and when the gastric juice is acting destructively hyperacidity increases this destructive tendency, this high degree of acidity should be controlled by the administration of alkali. This is not so necessary in acute ulcer as in the more chronic forms, because the few estimations that have been made of the gastric secretion in acute ulcer show that it is not hyperacid, and it has been found experimentally that the effect of acute ulcer is to diminish the secretion in the early stages, and that secretion becomes normal as the ulcer heals.

Lancet, London

December 24

- 6 The Disorder of Medical Charity. I. E. Shaw.
- 7 Medical Students and Medical Practitioners. G. H. Colt.
- 8 *Treatment of Splenic Anemia by Splenectomy. G. A. Sutherland and F. F. Burghard.
- 9 Surgical Treatment of Cancer of the Vulva and Its Precancerous Stage. F. J. McCann.
- 10 Value of Vaccination and Revaccination. F. M. Sandwith.
- 11 *Fatal Case of Anemia in Which the Widal Reaction was Obtained. P. Gully.
- 12 Use of Pituitary Extract in Obstetrics and Gynecology. S. J. Aarons.
- 13 Practical Sterilization of Potable Waters by the Ultraviolet Rays. J. C. Thresh and J. F. Beale.

8. **Treatment of Splenic Anemia.**—The authors report two successful cases of splenectomy for splenic anemia. One patient, a girl aged 12 years, was in very bad condition when operated on, the blood examination showing red corpuscles, 2,420,000; hemoglobin, 56 per cent., and white corpuscles, 9,800. A differential count of the white cells showed nothing abnormal. The spleen with the contained blood weighed 2 pounds, and showed general hyperplasia of all the tissues. There was no marked shock after the operation, and when the effects of the anesthetic had passed off; the patient made a rapid recovery. Three days after the operation it was found that the red cells had increased from 2,500,000 to 4,700,000, and the hemoglobin from 40 per cent. to 76 per cent., an improvement which was maintained until at the end of another week the red cells were normal in number. This alteration was also visible in the appearance of the child; the yellow tinge of the skin had gone, the cheeks were pink in color, and the lips had taken on a healthy red hue. There was no compensatory enlargement of the lymphatic glands. Four years after the operation, she was a well-grown girl in service as a nursemaid. There were no marked signs of anemia in her appearance. Blood examination showed red blood-corpuscles, 3,600,000; hemoglobin, 78 per cent., and white blood-corpuscles, 6,400.

The second patient was a girl aged 6 years. Examination of the blood gave the following result: Red blood-corpuscles, 1,870,000; hemoglobin, 30 per cent.; white blood-corpuscles, 2,400, and color index, 0.8. The red corpuscles were various

in size, megalocytes, microcytes, and all intermediate gradations being present. There was a little polychromatophilia in some of the corpuscles, but it was not marked, and there was no punctate basophilia. The red cells were normally shaped, poikilocytosis being absent. Nucleated red cells, all normoblasts, were present to the extent of about 600 per cubic millimeter. Among the white cells there were large hyalines (0.4 per cent.), myelocytes (1.2 per cent.), and mast cells (1.2 per cent.). The patient stood the operation well, there was no marked shock, and after the effects of the anesthetic had passed off she had no untoward symptoms of any kind. Four days after the operation, the patient's color had decidedly improved, the lips were redder in color, and the yellow tint of the conjunctivæ and skin had gone. A blood-count gave red blood-corpuscles, 4,000,000; hemoglobin, 52 per cent; white blood-corpuscles, 10,800, and color index, 0.6. There were no abnormal red corpuscles, nucleated or degenerated forms, seen, and no abnormal leukocytes. The child improved daily. There was no compensatory enlargement of the lymphatic glands. On the seventeenth day after the operation the red corpuscles were 5,200,000, the white corpuscles 3,400, and the hemoglobin was 65 per cent. The patient, seven weeks after the operation, was well.

11. **Fatal Case of Anemia.**—Gully reports a case of pernicious anemia complicated by typhoid fever, in which the Widal test was positive in dilutions of 1 in 30 and 1 in 50 within one hour.

Medical Press and Circular, London

December 7

- 14 Diagnosis of Prolonged Pyrexia. F. Taylor.
- 15 Prostration Following Sea-Sickness, and Associated with Acetonuria. T. Bushby.
- 16 Soluble Milk Albumin in Infant Feeding. F. S. Toogood.

December 14

- 17 Three Cases of Duodenal Ulceration. F. de Havilland.
- 18 Acute Miliary Tuberculosis Simulating Appendicitis: Phagocytosis of Tubercle Bacilli by Cells in Cerebrospinal Fluid. F. X. Callaghan.
- 19 Cancer of the Larynx in the Light of a New Theory. R. H. T. Scanes-Spicer.
- 20 Poliomyelitis: Its Etiology, Early Diagnosis and Treatment. T. A. Williams, Washington, D. C.

Journal of Tropical Medicine and Hygiene, London

December

- 21 Miasm Fever. O. Smithson.
- 22 West Africa and Insurance: A Plea for Routine Blood Examination. T. F. G. Mayer.

Journal of Laryngology, Rhinology and Otology, London

December

- 23 Education of the Specialist in Laryngology, Rhinology and Otology. P. W. Williams.
- 24 Deafness and Diseases of the Ear in Relation to the Public Services and Insurance. J. Horne.
- 25 Mnemonic Tables for Normal Labyrinthine Nystagmus. J. Adam.

Bristol Medico-Chirurgical Journal

December

- 26 The Medical Aspect of Boswell's "Life of Johnson," with some Account of the Medical Men Mentioned in That Book. B. M. H. Rogers.
- 27 *Surgical Aspect of Glycosuria and Diabetic Gangrene. C. A. Morton.
- 28 Hyoscin and the Mydriatic Alkaloids. J. M. Fortescue-Brickdale.
- 29 Excision of Strictures of the Urethra. E. W. H. Groves.
- 30 An Old-Time Syphilidiater. H. J. Norman.

27. **Surgical Aspect of Glycosuria.**—Morton reports three cases of diabetic gangrene, in which amputation was successfully performed at the joint, under spinal anesthesia.

Clinical Journal, London

December 7

- 31 Typhoid. W. H. White.
- 32 Ateleiosis (Hastings Gilford's Form of Essential Infantilisim). H. B. Shaw.
- 33 Roentgen-Ray Examination of the Digestive System. R. Morton.

Practitioner, London

December

- 34 Vaccine Therapy of Bronchitis. A. Latham.
- 35 Vaccine Therapy of Tuberculosis. H. B. Shaw.
- 36 Vaccine Therapy. E. v. Ofenheim.

- 37 Teaching of Insanity to the Medical Student and Practitioner In Relation to the Prevention of Mental Diseases. R. Jones.
- 38 Diagnosis and Home Treatment of Scarlet Fever. F. G. Crookshank.
- 39 Gallstones. J. Kirkland.
- 40 Salvarsan. L. F. Knuthsen.
- 41 Efficacy of Blood-Letting. J. W. Milne.
- 42 Erythromelalgia. E. A. Chlil.
- 43 Blood Contamination in Organismal Diseases. S. J. Ross.
- 44 Acute Pyelonephritis of Unusual Severity. S. Kent.

Archives Générales de Chirurgie, Paris

November, IV, No. 11, pp. 1101-1210

- 45 Cervical Ribs and Their Complications. Report of Five Cases. (Les côtes cervicales.) R. Frœlich.

Archives Internationales de Chirurgie, Ghent

V, No. 1, pp. 1-116

- 46 Experimental Cancer Research. (Recherches expérimentales sur le cancer.) F. Fichera.

Archives des Maladies du Cœur, etc., Paris

December, III, No. 12, pp. 705-787

- 47 Embryologic Study of Interauricular Defect. (Coexistence d'une communication interauriculaire et d'une anomalie de la valvule de Thébesius.) C. Lesieur, J. Froment and R. Crémien.
- 48 Hemolytic Jaundice. (Ictère hémolytique acquis général et purpura, avec ictère hémolytique local, au cours d'une infection indéterminée.) H. Gougerot and H. Salin.

Bulletin de l'Académie de Médecine, Paris

November 29, LXXIV, No. 38, pp. 359-402

- 49 *Angina Pectoris. (Le repos au lit et les crises hypertensives dans l'angine de poitrine organique.) C. Fiessinger.

49. **Angina Pectoris.**—Fiessinger emphasizes the importance of rest in bed as the most effective measure in treatment of angina pectoris. It acts by reducing the arterial tension, while it is a tonic for the heart and reduces its excitability. In order to have the maximum effect, the patient should be kept in bed for from two weeks to two months, the diet being restricted at first to water and milk, gruels, etc., being gradually allowed. The rest in bed should be supplemented with the usual drugs. Nothing can compare in efficacy, he says, with simple rest in bed; the benefit is most apparent in the elderly and those inclined to corpulence who fall off a little in weight. Patients may be classed as (1) those whose arterial tension during the pain keeps normal or below—repose does not modify it; (2) those in whom the tension is high and is not influenced by repose—this is very rare; (3) those in whom the high arterial tension subsides under the influence of the rest in bed—this is the rule in two-thirds of all the cases; (4) those in whom the tension does not subside, but even increases during repose, although the pain does not increase. Among twenty patients from 45 to 73 years old with angina pectoris, he found three with normal or low arterial tension. The tension was unmodified by repose in three other cases, but the pains subsided, showing that the tension was not the cause of the pains during effort. In eleven other cases the rest in bed reduced the arterial tension at once. One patient was a man of 64 with maximal tension of 28 (Pachon) during an attack. Under bed rest, ice to the heart, restriction of his food to water and milk and three injections of 2 mg. of morphin, the tension dropped to 19 and the patient felt like a new man. Another patient had long been having attacks of angina pectoris at the slightest effort. A course of rest in bed and restriction to a milk diet, with a loss of about 14 pounds in weight, restored normal conditions to such an extent that he has been in good health during the eight years since to date, with no recurrence of the angina pectoris. Coronary lesions are not encountered in every case; the aorta or the myocardium may be involved rather than the coronaries. Bed rest is least effectual, Fiessinger adds, in case of concomitant aortic insufficiency.

Lyon Médical, Lyons

November 27, CXV, No. 48, pp. 885-924

- 50 Should We Fight Fever? (La fièvre est-elle curative?) R. Lépine.
- 51 *Inheritance of Tuberculosis. Piéry.
- 52 *Fixation Abscess in Treatment of Bronchopneumonia in Infants. Montagnon.
- 53 Facial Paralysis Symptomatic of Lesions in Pons. L. Bériel.

51. **Inheritance of Tuberculosis.**—Piéry concludes from his study of the inheritance and spread of tuberculosis that the offspring of tuberculous parents are peculiarly liable to tuberculosis, and that the inflammatory tuberculosis (Poncet) should be included in estimating the tuberculosis in the parents. Contagion alone is insufficient, he declares, to explain the great variety in the manifestations of tuberculosis in tuberculous families. The so-called inherited predisposition and prepared soil are generally the result of actual existing infection. The assumption of a tardy hereditary tuberculosis seems to harmonize best to date with the clinical facts observed.

52. **Fixation Abscess for Infants.**—Montagnon reviews the literature on Fochier's turpentine fixation abscess, and states that he has applied this method in treatment of twenty-six children from 4 months to 5 years old. He used .33 c.c. (5 or 6 minims) of turpentine for the purpose in infants under a year old, and 0.5 c.c. (8 minims) in infants from 1 to 5. He finds it most convenient to inject the turpentine in the abdominal wall on a level with and about three fingerbreadths to the left of the umbilicus. An abscess forms and is evacuated about the seventh day; healing is generally complete by the end of the second week. The abscess is not only curative, he asserts, but serves as a valuable index of the child's reacting powers. If there is little or no suppuration, the prognosis is grave. In every case in his experience in which there was no febrile reaction to the injection of the turpentine, the bronchopneumonia proved to be of a tuberculous nature. If in bronchopneumonia the fever persists high and the child still has difficulty in breathing after mustard baths and inhalation of oxygen, he applies the turpentine on the third or fourth day of the disease. The only deaths among the children were in the three tuberculous cases, while the disease had been exceptionally severe in ten of the children who recovered. He gives the curves of several typical cases, illustrating the favorable influence of the fixation abscess.

Obstétrique, Paris

November, III N. S., No. 11, pp. 889-1000

- 54 *Vaginal Cesarean Section. A. Dührssen.
- 55 *Rapid Delivery with Undilated Os. E. Hauch.

54. **Vaginal Cesarean Section.**—Dührssen here presents a summary of his arguments for and his experiences with vaginal Cesarean section, or, as he specifically terms his method, metrenrynter hysterotomy, and delivery *à la Buddha*. No fatality is known for which the operation was responsible in his forty-two cases nor in Seitz' seventy operations of the kind.

55. **Rapid Delivery with Undilated Os.**—Hauch states that the patients had to be delivered without delay in 212 cases out of 22,000 lying-in cases at the Copenhagen maternity, and he reviews 500 similar cases from other maternities, discussing indications, methods and outcome for mother and child. The tabulated findings afford opportunity for comparison of the various techniques. Vaginal Cesarean section requires institutional environment, he says, and, lacking this, instrumental dilatation is the only resource if manual dilatation and the hystereurynter are inapplicable. Instrumental dilatation is liable to induce hemorrhage, but in the cases reported it never proved serious. There is liability to rupture and the consequences of the rupture may give trouble later in a small number of cases. The result for the children is not very good, but the fetus must be already suffering from the effects of the mother's condition for which the urgent delivery is required. In any event, Hauch continues, the dangers from instrumental dilatation are not serious enough to restrict its application at need. The factors for success are the elasticity and suppleness of the tissues of the cervix, and it is difficult to estimate this beforehand. The danger is less the more the cervix gapes, but the danger increases with the size of the fetus. The position of the instrument must be carefully supervised during the entire course of the dilatation, and delivery must follow at once. It is better, he thinks, to do podalic version and deliver the fetus than to attempt a very difficult forceps extraction. Instrumental dilatation failed in 16 out of the 363 cases on record in which this method of

delivery was applied, but in most of the unsuccessful cases the pregnancy was not very far advanced and the cervix was less elastic than at term.

Presse Médicale, Paris

December 10, XVIII, No. 99, pp. 929-936

- 56 Histomicrobiology of Syphilitic Arteries. A. Sézary.
- 57 Re-enforcing Screens to Reduce Length of Roentgen-Ray Exposures. (Diminution de la pose en radiographie par les écrans renforceurs.) A. Laquerrière and L. Delherm.
- 58 Liver with Floating Lobe. (Le foie à "lobe flottant.") M. Letulle.

December 14, No. 100, pp. 937-944

- 59 *Streptococcus Peritonitis. L. Boidin and L. Douay.
- 60 Abram's Method for Percussion of Heart. A. Abrams (San Francisco).

59. **Streptococcus Peritonitis.**—The special features of the case reported were the sudden onset in a girl of 18 of a peritoneal syndrome with diarrhea, semicomatous prostration, suggesting appendicitis at first and later tuberculous peritonitis. Contrary to the usual fatal course of streptococcus peritonitis, an operation nearly a month after the first symptoms was followed by recovery, notwithstanding that the pus filled nearly the entire abdominal cavity, and that there were pulmonary symptoms for a week or so—crepitant râles and mucopurulent sputum, with numerous pneumococci. Only streptococci and colon bacilli could be cultivated from the abdominal pus.

Berliner klinische Wochenschrift

December 5, XLVII, No. 49, pp. 2225-2276

- 61 *Intravenous Salvarsan Treatment in Syphilis. A. Géronne.
- 62 Indications for Artificial Interruption of Pregnancy. (Indicationen zur künstlichen Unterbrechung der Schwangerschaft.) S. Hammerschlag.
- 63 Hysteropexy and Pregnancy. S. Solieri.
- 64 Symptomatic Myotonic Disturbances with Inflammation in Muscles. M. Salzberger.
- 65 Pathologic Urinary Pigment. (Neuer pathologische Harnfarbstoff.) F. Lehmann and W. Zinn.
- 66 Pathologic Ferment Activity. (Pathologische Fermentwirkung.) J. Wohlgemuth. Commenced in No. 48.
- 67 Medicolegal Aspect of Dazed Conditions. (Forensische Beurteilung der Dämmerzustände.) E. Forster.

61. **Salvarsan in Syphilis.**—Géronne thinks that the intravenous route is the most reliable. The Wassermann reaction became negative in only fifty-seven out of 124 patients examined repeatedly after treatment with salvarsan. One patient in the primary stage gave a negative reaction soon after the injection, but it became positive again six months later, although no secondary symptoms had developed in the interim. In eighteen other primary cases recurrence has been observed since in five, but all the symptoms seem to have permanently subsided since a second injection. He has given salvarsan in 350 cases of syphilis, making about 500 injections in all, and the only toxic phenomena witnessed were slight transient by-effects in a few cases after intravenous injection of the drug. A toxic exanthem developed eight days after the injection in one case, but it was not accompanied by malaise. He intends hereafter to give the drug in intermittent intravenous injection of medium doses, that is, repeating the injection after four or five weeks, especially in the patients with persisting positive Wassermann reaction.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

November 26, XIII, No. 21, pp. 801-848

- 68 *Tetany from the Surgical Standpoint. K. Wirth. Commenced in No. 20.
- 69 Radiotherapy and Electrotherapy of Carcinoma and Palliative Operations. E. Venus. Commenced in No. 6.

68. **Tetany.**—Wirth discusses tetany from the standpoint of operative treatment, and tabulates the details of the twenty-one cases of gastric tetany in which an operation was done. The consequences were seventeen complete cures and one material improvement; three of the patients succumbed, notwithstanding the operation. This is a mortality of 15 per cent., while the mortality was from 71 to 77 per cent. and over in Loeb's and Albu's recent compilations of cases in which reliance was on internal measures alone. Wirth advocates operating without further delay when the dilatation of the stomach is due to organic changes; extreme stenosis of the pylorus is frequently accompanied by tetany. A gastro-enterostomy puts an end at once to the stagnation of the ingesta, with the consequent irritation of the vagus, entailing

continuous hypersecretion, and thus does away with the irritation liable to start the tetany. The moment that the patient begins to lose weight and the amount of urine diminishes, notwithstanding appropriate dieting, bed rest and internal measures, such as lavage of the stomach, a course of bismuth and infusion of fluid by the rectum or subcutaneously, the obstruction preventing the normal emptying of the stomach should be removed or a new passage provided. The slightest indication of tetany at this time is an urgent indication for prompt operative interference. Any delay increases the intoxication of the whole system and magnifies the risks of operation. An operation after the tetany has long been installed with other signs of serious intoxication—delirium, stupor, acetoneuria and albuminuria—has far less prospect of success. Fleiner warns against attempting to operate in such conditions, but Albu advises operating in every case unless the condition of the heart, liver or kidneys, apart from the tetany, contra-indicates any intervention. The early operation—prophylactic gastro-enterostomy—gives the best chances. In Warbasse's case a simple gastrostomy answered the purpose. Wirth discusses further the few cases on record in which the tetany developed in connection with some minor surgical measure, in two cases from tapping the abdominal wall with the percussion hammer. The patients in both cases had long suffered from dilatation of the stomach. In another case the tetany came on after introduction of the stomach tube to relieve dilatation. The tetany proved fatal in these patients, a woman of 44 and two men, aged 42 and 64, respectively. In another case a woman of 28 developed tetany after puncture of the abdomen for ascites, but recovered; a man of 35 also developed tetany following puncture for ascites, but existing peritonitis and a pancreatic cyst may have been responsible for the fatality in this case. A number of cases are on record in which tetany came on after injection of some drug or glandular extract or stovain spinal anesthesia (Curschmann). In another case the tetany developed from the pressure of a traumatic retroperitoneal hematoma. Tetany accompanying gall-stones has been observed in a few cases, and also following acute suppuration in the thyroid. Several authors have reported tetany complicating exophthalmic goiter; Wiebrecht found that improvement followed parathyroid treatment in his case of this kind. Narbut has reported the case of a young soldier with tetany resisting all other measures until 50 c.c. of spinal fluid under high pressure was released by spinal puncture. In Levi's case the tetany developed in a young artisan after venesection. Further research will determine whether operative treatment of tetany should be supplemented by administration of parathyroid extract or tissue, internally or by implantation. This might be considered especially in the cases in which marasmus, atrophy or cicatricial tissue suggests the possibility of permanent pathologic changes in the parathyroids.

Deutsche medizinische Wochenschrift, Berlin

December 15, XXXVI, No. 50, pp. 2321-2368

- 70 *Robert Koch. (Gedächtnisrede.) G. Gaffky.
- 71 Pneumonia. (Pathologie und Therapie der Lungenentzündung.) C. Hirsch.
- 72 Salvarsan in Syphilis. (Behandlung der Syphilis mit Arsenobenzol, bes. die Dauerwirkung des Präparates und die Methoden seiner Anwendung.) W. W. Scholtz, Salzberger and Beck.
- 73 Salvarsan in Syphilitic Eye Disease. (Arsenobenzol gegen syphilitische Augenleiden. II.) E. v. Gross.
- 74 *Epiphanin Reaction in Serodiagnosis of Syphilis. G. Seiffert.
- 75 Pregnancy and Tuberculosis. J. Hofbauer.
- 76 Derivatives of Peruvian Balsam in Treatment of Tuberculous Fistulas. (Behandlung tuberkulöser Fisteln mit Zimtsäureallylester, nebst Bemerkungen über die Hietolbehandlung und einen neuen Gesichtspunkt in der Tuberkulitherapie.) E. Blos and K. Kronstein.
- 77 Double Extension for Fractures. A. Heermann.
- 78 Geographic Tongue, Hereditary and Familial. (Ist die Landkartenzunge erblich?) W. Lublinski.

70. See Berlin Letter, January 14, page 161.

74. **Epiphanin Reaction in Serodiagnosis of Syphilis.**—Seiffert has modified somewhat Weichardt's original technic for this serologic test. It is based on the same principle as Ascoli's meiotagmin reaction, namely, the change in the composition or drop-forming properties of the blood-serum under the influence of antibodies generated in the course of disease. In the serum from seventy-five patients the epiphanin reaction par-

alleled the Wassermann reaction in sixty-four, both being positive in forty-three and negative in twenty-one cases. In eleven cases in which the Wassermann reaction was negative, the epiphanin test gave positive findings in nine, and there were clinical signs of syphilis in all. The results of the epiphanin test were constantly negative in patients with non-syphilitic affections, including twelve typhoid, two paratyphoid, eight tuberculous and two scarlet fever patients. Seiffert's technic for the test is based on the change of tint of a phenolphthalein solution, while the meiostagmin reaction is estimated by the stalagmometer. Weichardt uses the diffusimeter. Seiffert adds a drop of an alcoholic solution of phenolphthalein to the mixture of syphilitic serum and extract of a syphilitic organ: 0.1 c.c. of a 10 per cent. solution of the serum in physiologic salt solution is mixed with 0.1 c.c. of an alcoholic extract of a syphilitic fetal liver. To this is slowly added 1 c.c. of decinormal sulphuric acid and 1 c.c. of a solution of barium hydroxid of the exact concentration needed to neutralize the sulphuric acid solution. On the addition of the drop of the stain, the fluid turns red when the serum is from a syphilitic, while there is no change in tint with non-syphilitic serum.

Medizinische Klinik, Berlin

December 11, VI, No. 50, pp. 1965-2004

- 79 Psychology Applied in Gynecology. (Einiges über die Verwertung von Psychologie in der Frauenheilkunde.) H. Sellheim.
- 80 *Transient Disturbance in Vestibular Nerve After Salvarsan. (Ueber transitorische Fasererkrankung des Nervus vestibularis bei mit Ehrlich-Hata 606 behandelten Kranken.) O. Beck.
- 81 Salvarsan in Treatment of Tertiary Syphilis. (Zur Behandlung der tertiären Syphilis mit Ehrlich's Arsenobenzol.) J. Fabry.
- 82 Salvarsan in Syphilis. (Erfahrungen mit Ehrlich 606 bei subkutaner und intramuskulärer Anwendung.) R. Ledermann.
- 83 Electricity in Tabes. F. Walzer.
- 84 Case of Landry's Paralysis. Wadsack. Commenced in No. 49.
- 85 Cancer Extract in Experimental Sarcoma. (Ueber Heilungsversuche bei einem Rattensarkom.) F. Blumenthal.

80. **Transient Disturbance in Vestibular Nerve Under Salvarsan.**—Beck has encountered four cases in which an isolated disturbance in the vestibular branch of the auditory nerve became evident after injection of salvarsan on account of syphilis. The features of the disturbance, in three cases at least, indicated, he thinks, that it was a phenomenon forming part of the Herxheimer reaction. It persisted longer than the skin manifestations, but subsided by the end of two weeks at most in every case. The hyperemia and serous imbibition of the nerve in the reaction caused the trouble on account of the peculiarly narrow channel in the bone in which these nerve fibers run. The possibility of a vestibular disturbance of the kind should be borne in mind in administering salvarsan to patients with existing ear trouble.

Münchener medizinische Wochenschrift

December 6, LVII, No. 49, pp. 2561-2616

- 86 *Sacral Anesthesia in Gynecology and Obstetrics. H. Schlimpert and K. Schneider.
- 87 Physiologic Puerperal Bradycardia. A. Hamm.
- 88 Healthy Dysentery Bacillus-Carriers. (Zur Bekämpfung gesunder Ausscheider von Dysenteriebazillen.) O. Mayer.
- 89 *Postdiphtheritic Paralysis and Repeated Diphtheria. C. Kayser.
- 90 Toxic Action of Sugar After Feeding with "Albumin Milk." (Ueber toxische Zuckerwirkung nach Eiweissmilchernährung.) J. Braumüller.
- 91 The Physiologic Role of the Calcium Salts. O. Loew.
- 92 Urobilin in the Blood. W. Hildebrandt.
- 93 Practical Application of Wassermann Reaction, Especially in Stern's Modification. F. Ilayn and A. Schmitt.
- 94 Reacting Power of the Organism and Treatment of Syphilis. H. Hecht.
- 95 Salvarsan in Syphilitic Eye Disease. (Ehrlich-Hata beiluetischen Angenerkrankungen.) C. Hirsch.
- 96 Salvarsan in Syphilis. D. Montesanto (Athens).
- 97 *Treatment of Ankylosis of the Knee. (Behandlung der Knieversteifung.) T. Müller.
- 98 Chloroform-Oxygen General Anesthesia. H. Ziegner.
- 99 Diseases in Japan Caused by Animal Parasites. Y. Tanaka.

86. **Sacral Anesthesia in Gynecology and Obstetrics.**—Recent modifications of the epidural technic have improved this method of anesthesia so that Schlimpert and Schneider commend it as an excellent means to control labor pains and for surgical anesthesia in operations on the genital and anal regions. It seems to be harmless, but the technic is difficult

to master in case of corpulent patients. They generally combined it with the scopolamin-morphin technic.

89. **Postdiphtheritic Paralysis.**—Kayser reports that three children in one family developed paralysis after diphtheria; the mother had diphtheria also during the same epidemic. It was learned further that the father had had paralysis after diphtheria at the age of 5. The four children in this family were accustomed to the use of alcohol. One of the children had had diphtheria before, several years before the present attack. Kayser discusses whether such cases of recurring diphtheria and recurring after-affections may not be regarded as an allergy reaction.

97. **Treatment of Ankylosis of the Knee.**—Müller has obtained good results by mobilizing the knee in profound anesthesia, then immobilizing it in extreme flexion for twenty-four hours, then suspending the knee in a sling during the day from a high crossbar in such a way that the leg below the knee hangs free and its weight helps to correct the ankylosis. At night the suspending sling is removed and the leg left free. There is nothing to interfere with massage of the leg. The article is illustrated.

Wiener klinische Wochenschrift, Vienna

December 15, XXIII, No. 50, pp. 1779-1830

- 100 *Cause of Cancer. (Die Ursache der Krebserkrankung.) A. Jaeger.
- 101 *Lead Poisoning. Pathologie und Frühdiagnose der Bleivergiftung.) M. Sternberg.
- 102 *Electric Accidents. (Electropathologica.) S. Jellinek.
- 103 Ineffectual Action of Preparations of Tubercle Bacilli Administered by the Mouth. T. Pfeiffer and J. Leyacker.
- 104 Salvarsan in Private Practice. (Zur Anwendung des Arsenobenzols in der Privatpraxis.) E. Glass.

100. **Cause of Cancer.**—Jaeger declares that it is high time to give up all claims that cancer can ever be of infectious origin and contagious. Everything speaks against this assumption, he asserts, and presents arguments to prove that cancer is a disease of the intracellular metabolism.

101. **Early Diagnosis of Lead Poisoning.**—Elimination of lead in urine or stool and the blue line on the gums are the most important and obvious signs of lead poisoning, but others are the peculiar worried expression or a drawn smile, anemia, slight tendency to jaundice, dyspepsia, hematoporphyrin in the urine, punctate red corpuscles, alimentary dextrosuria and levulosuria, increased blood-pressure and exaggerated tendon reflexes.

102. **Electric Accidents.**—Jellinek reports a case of suicide from electricity, and a case in which the victim of an electric accident was able to rescue himself. The man was standing on a ladder working at an electric wire carrying a weak current; near his feet ran the wire of the trolley-car service. He was mounting two brass tubes, when one, bent at a right angle, hit the live wire below and the street current of 540 volts passed through this tube in his right hand to the other tube in his left hand. Notwithstanding the intense contracture and spasms induced in his hands and arms, he succeeded in bringing the two metal tubes into contact, thus short-circuiting the currents through the tubes; he escaped with scarcely any injury except the burns where the metal tubes were partially fused by the current. The characteristic injury on the hands was an irregular circular defect, about half an inch in diameter, extending into the subcutis, of a grayish-white to yellow color, the edges of the wound were raised and were hard and tough to the touch, without any relative redness around and were non-sensitive. Especially characteristic was the button-like, shallow, hard elevation of epidermis on the right thumb with a shallow hollow in the center, and dirty brown in color. It was non-sensitive even to needle pricks, but the sense of touch was retained. The forensic importance of such injuries is shown by a recent case of sudden death in which the discovery of a similar lesion first suggested that the man had been the victim of an electric accident, further investigation confirming the correctness of this assertion. It is the first case on record, Jellinek believes, in which the cause of death was revealed by this means. In the case reported, neither the heart nor respiration seemed to be affected by the current; the man screamed for help but was not heard on account of noises around. In a suicide case a

young farm-hand gambled away all of his savings one night and wrote a letter of farewell to his father and fiancée. He then tied a weight in a handkerchief, fastened a long wire to the handkerchief, and holding the wire in one hand must have thrown the weight with the other hand over the trolley wire carrying 20,000 volts, as he was found lying dead in the road still holding the wire. Jellinek also mentions a case in which a man wrapped up his hand and then touched with it a live wire to induce injuries entitling him to "workmen's compensation."

Zentralblatt für Chirurgie, Leipsic

December 3, XXXVII, No. 49, pp. 1545-1576

- 105 Long Clamp for Hemostasis in Trephining. M. Makkas.
- 106 *Bloodless Operations on the Liver. (Blutlose Leberoperationen.) A. Baron.
- 107 Toxic Action from Scarlet-Red Salve. S. Gurbski.

December 10, No. 50, pp. 1577-1600

- 108 *Diagnosis of Injury of Spleen. (Zur Diagnose der Milzverletzungen.) L. Levy.
- 109 Shutting Off Part of Circulation as Aid in General Anesthesia. (Die Extremitätenstaung, eine einfache Methode zur Blut- und Chloroformersparnis bei Operationen an anderen Körperstellen.) H. Hans.

December 17, No. 51, pp. 1601-1632

- 110 Acute Hemorrhagic Pancreatitis Induced by Experimental Stasis in Pancreatic Duct. H. Seidel.
- 111 Roentgen-Ray Diagnosis of Renal Tuberculosis. (Nierentuberkulose im Röntgenbilde.) A. Hofmann.

106. **Bloodless Operations on the Liver.**—Baron found it possible to operate on dogs without any loss of blood by the technic which he describes. He first clamps the portal vein, hepatic artery and common bile duct with a clamp with soft blades, the liver is then drained toward the heart until free of blood, and the desired operation can be done on it without loss of blood. He then seizes arteries, veins and bile ducts with clamps, draws them out and ligates them. Examination of the parts at various intervals afterward, up to three months, failed to reveal any gross or microscopic injury from the compression. Air embolism and after-hemorrhage were not observed in any case. The blades of the clamp are slipped in rubber tubing, and the hepatoduodenal ligament is clamped as the first step in the operation. He thus resected more or less of the liver in ten dogs and no signs of peritonitis, thrombosis or after-hemorrhages were observed in any instance. The method is particularly useful, he believes, in case of injury of the liver. The clamp can be applied as soon as the abdomen is opened; there is no further bleeding. This method is also promising for operations on the gall-bladder or malignant disease, and it would also much facilitate anastomosis between the liver and bile duct. The conditions in regard to the blood-supply in the dog are similar to those in man, so that he is confident that the procedure will be found serviceable in the clinic.

108. **Diagnosis of Injury of the Spleen.**—Levy calls attention to the sharp pains in the shoulder region which differentiated the injury of the spleen in the case of abdominal contusion reported. The area of dulness over the spleen was not enlarged but the pains in the shoulder region confirmed the assumption that the spleen had been injured; it was found lacerated at two points and was removed. The patient rapidly recovered and not long after passed successfully through an explosion with severe burns. The loss of the spleen did not interfere with recovery from this second injury; the bone marrow must have vicariously done the work of regeneration of red corpuscles after the severe burns.

Zentralblatt für Gynäkologie, Leipsic

December 3, XXXIV, No. 49, pp. 1585-1608

- 112 *Suggestion Anesthesia and Hypnosis. J. Kocks.
- 113 *Vaginal Cesarean Section in Russia. S. Rosenfeld.

December 10, No. 50, pp. 1609-1640

- 114 *Mammary Gland as Source of Eclampsia Toxin. (Die mam-märe Theorie über Entstehung des Eklampsiegiftes.) H. Sellheim.
- 115 Direct Application of Heat to Interior of Uterus. (Thermische Uterussonde.) L. Seitz.
- 116 *General and Local Anesthesia in Gynecology. W. Losinsky.

December 17, No. 51, pp. 1641-1672

- 117 Immunization Against Puerperal Infection. E. v. Graff.
- 118 Two Cases of Repeated Extra-Uterine Pregnancy. M. Gerschun.
- 119 *Easy and Rapid Mechanical Reposition of Retroflexed Uterus. O. Goldberg.

112. **Suggested Anesthesia.**—Kocks does not hesitate to say that hypnosis is mostly humbug; the hypnotizer is self-deceived and also the public, he declares, and he gives a number of personal experiences to sustain this view. At the same time he has found that it is possible to tranquilize patients with a suggestion of anesthesia which is extremely useful. It does not prevent the experiencing of pain when sensitive tissues are incised or pulled, but it removes the dread and excitement. In some cases he makes use of the chloroform apparatus without any chloroform or ether; the mere sight of the apparatus and its being set to work quiets the pulse, but there is no hypnotic suggestion. He tells the patient that no pain will be felt or so little that it will be bearable; operative measures in the vagina and uterus seldom induce pain. In other cases he injects a few drops of a solution of phenol, which the patient thinks is cocaine, and under this local anesthesia the operation can be tranquilly entered on and completed. A few drops of chloroform may reinforce the tranquilizing measures but he scoffs the idea of its being hypnotic suggestion.

113. **Vaginal Cesarean Section in Russia.**—Rosenfeld has found records of fifty-one cases in which vaginal Cesarean section has been done in Russia and adds to this number two cases from his own practice. The results were satisfactory. Anterior vaginal hysterotomy was the preferred method, and the operation was done for various indications, eclampsia, rupture, endometritis, placenta prævia and hemoptysis at the seventh month. Some of the authors did not hesitate to operate in this way during the first half of pregnancy, and for evacuation of the uterus after abortion with complications.

114. **Eclampsia Due to Intoxication from Mammary Gland.**—Sellheim discusses various facts in relation to eclampsia which seem to sustain the assumption that the mammary gland may be the source of the intoxication, and relates the details of three cases in which he operated in accordance with this view. In the first case severe eclampsia persisted long after the uterus had been emptied. None of the usual measures having any influence on the convulsions, he then injected potassium iodid directly into the breast tissue. Immediately a change for the better was apparent, and the patient rapidly recovered. In a more recent case a robust primipara was unconscious when first seen, numerous convulsions preceding and following extraction of a dead seven-months' fetus by vaginal Cesarean section. Every hour or so afterward severe convulsions followed, growing constantly worse, the coma becoming deeper, the pulse 160 and weak, the cyanosis more pronounced. Sellheim then injected potassium iodid into the breast, pushing the needle deep into the gland tissue, pointing it in different directions, and pumping with a bulb until 1,000 c.c. of a 0.9 per cent. salt solution containing 1.5 gm. of potassium iodid had been thus injected. The injection took about fifteen or twenty minutes. As he then looked again into the patient's face he saw a decided change for the better, the tint was less livid and it rapidly grew more natural while the pulse became stronger. An hour later the patient sweat profusely; the same amount of the iodid solution was injected again into the breast four hours later and again after another four hours. The urine had been bloody and contained large amounts of albumin before the first injection of potassium iodid, but it soon became normal in tint, with only 1 per 1,000 albumin by the end of twenty-four hours, and recovery was soon complete. In a third case, a primipara of 24 developed severe eclampsia six hours after normal delivery, and Sellheim excised the mammary gland on both sides through a curving incision below each breast. He gives the pulse and other curves in this case to show the immediate turn for the better that followed. Subcutaneous excision of mammary-gland tissue is a far simpler operation than forcible delivery and decapsulation of the kidneys, and in desperate cases, in which no other organ can be incriminated, he is confident that this operation may prove of supreme importance.

116. **Anesthesia in Gynecology.**—Lobinsky concludes from the experience at Kiev that local anesthesia by the infiltration method is the best for plastic operations on the perineum and

vagina, and that epinephrin should be used only in the smallest amounts and weakest concentration in operations on the female genitals.

119. Reposition of Retroflexed Uterus.—Goldberg introduces a Hodge pessary, pushing the broader end well up into the posterior vaginal vault; the smaller end of the pessary is then pushed farther back into the vagina. The displacement is corrected by this maneuver or it only requires a little further manipulation to restore the organ to its normal place. The reposition is the effect of the leverage from the pessary and the induced tension of the ligaments. He summarizes reports of twenty cases to show the efficiency of this simple method.

Gazzetta degli Ospedali e delle Cliniche, Milan

December 1, XXXI, No. 144, pp. 1521-1528

120 Diagnostic Importance of Lipase in Urine. G. Tanfani.

December 4, No. 145, pp. 1529-1544

121 Hydrogen Dioxid in Hyperchlorhydria. (Il perossido d'idrogeno nell' ipercloridria.) P. Girardi.

December 6, No. 146, pp. 1545-1552

122 *Iodin Sterilization of the Skin. (Il metodo Grossich per la disinfezione della pelle.) C. Mantelli.

December 8, No. 147, pp. 1553-1560

123 Temporary Excessive Contraction of the Heart Just After Compensation is Complete. (Sulla ipersistole.) A. Bruno.

December 11, No. 148, pp. 1561-1576

124 Pathogenesis of Purpura Hemorrhagica. T. Di Giuseppe.

122. Iodin Sterilization of Wounds and Field of Operation.—Mantelli states that Grossich's technic has been applied in 700 aseptic operations at Bajardi's clinic in the last year, and the wounds have healed by primary intention without a single exception and without dermatitis in any instance. He reports bacteriologic research to determine the thoroughness of the sterilization that follows painting the region with tincture of iodine, the results being convincing in the extreme.

Policlinico, Rome

November 27, XVII, No. 48, pp. 1507-1538

125 *Tuberculin Skin Reaction in Syphilis and in Metasyphilitic Disease. F. Costantini.

December 4, No. 49, pp. 1539-1570

126 *Latent Malaria. G. Ianni.

December 11, No. 50, pp. 1571-1602

127 *Castration and Thyroidectomy. T. Silvestri.

128 Subcutaneous Injection of Phenol in Tetanus. (Il metodo Baccelli sulla cura del tetano.) A. Bellussi.

129 Prevention of Spread of Venereal Disease. V. E. Ovazza.

125. Local Tuberculin Reactions in Syphilis.—Costantini obtained a positive response in all but three out of forty-seven syphilitics tested with the intradermal technic according to Mantoux, and the Wassermann reaction paralleled the positive skin findings. In twelve patients with paralytic dementia both findings were also positive in 76 per cent. He comments that these local tuberculin reactions cannot be utilized for differentiation of syphilis and tuberculosis, but that, if tuberculosis can be excluded, positive findings are strong presumptive evidence in favor of syphilis.

126. Healthy Malaria-Parasite Carriers.—Ianni has examined the blood of over 2,000 transient or permanent inhabitants of endemic foci of malaria, and found the malaria plasmodia in the blood of fifty-three out of 146 persons free from the slightest indication of malarial disease. This large percentage of healthy carriers he thinks is extremely important from the standpoint of general prophylaxis of malaria. When no parasites were found in the peripheral blood, he gave a single therapeutic dose of strychnin, and found that in from thirty to sixty minutes the parasites ensconced in internal organs were driven out by the action of the drug and could then be discovered in the peripheral blood. Not until the findings were constantly negative after this test was the individual regarded as free from the germs.

127. Castration Plus Thyroidectomy.—Silvestri found that young rabbits, dogs and guinea-pigs and the male adult animals after castration reacted to removal of the thyroid and parathyroids the same as normal animals, but female adult animals after castration seemed to bear without injury the removal of the thyroid and parathyroids. The appetite

remained good and there were no signs of disturbance from the loss of the glands, except possibly an increase in weight. The age and sex seem to determine the outcome.

Riforma Medica, Naples

November 21, XXV, No. 47, pp. 1289-1316

130 *Is Kala-Azar Transmitted by Inoculation? (Intorno al kala-azar.) U. Gabbi.

131 Peptone in the Urine. (Indagine chimico-fisica del peptone nell'urina.) G. Moscati.

November 28, No. 48, pp. 1317-1344

132 Gastric Motor Disturbances. (Gastropatie dinamiche ed organiche. XII.) G. Rummo.

133 Action of Quinin on the Autolysis of Spleen and Liver. G. Moscati.

134 Plastic Operation with Cremaster Muscle in Treatment of Inguinal Hernia. O. Marchetti.

December 5, No. 49, pp. 1345-1372

135 Albumosuria in Albuminuria. L. Marenduzzo.

136 Research on Absorption from Gall-Bladder. (Sulla permeabilità della cistifellea.) G. Moscati.

137 Graphic Registration of Action of Left Auricle. (La grafica dell' atrio sinistro: il suo significato e la sua importanza diagnostica.) W. Janowski.

130. Kala-Azar.—Gabbi has encountered twenty more cases this year and others fifty more, the patients being all children in southern Italy. He believes that if the disease were always recognized it would be found that several hundreds die annually from it in southern Italy and Sicily. It is almost invariably fatal, and he believes that it is inoculable, for reasons which he cites, and that the bedbug is probably the intermediate host, not the dog as Nicolle has recently stated. The disease seems to occur in the spring; only one case is on record as late as August and only one as early as February. Recently he called attention to the difference between the febrile and the afebrile forms of infectious splenic anemia in children and ventured the assertion that the former was true kala-azar. It seems to be invariably restricted to the families of the working classes while the afebrile form is encountered among the well-to-do. Puneture of the spleen or bone marrow is the only means to reveal the parasites, the Leishman bodies, causing the syndrome, which in many respects resembles chronic wasting malarial fever.

Hygiea, Stockholm

November, LXXII, No. 11, pp. 1169-1296

138 History of Inoculation Against Small-Pox. (Ur koppymplings historia.) V. Djurberg.

139 Combination of Albuminous Substances in the Blood with Iodin After Administration of a New Iodin Preparation, a Derivative of Tannic Acid. C. J. Enebuscke (New York).

140 Chemical Study of Swedish Oil of Pine. (Bidrag till kännedom om svensk tallbarrsolja.) T. Ekecrantz.

Norsk Magazin for Lægevidenskaben, Christiania

December, LXXI, No. 12, pp. 1267-1378

141 *Foreign Bodies in the Esophagus. (Om fremmedlegemer i øsophagus og deres behandling.) V. Uchermann.

142 *Hemolytic Jaundice. (Hæmolytisk ikterus.) G. A. Haas.

143 *Old Primiparae. (Om ældre Istegangsfødende.) T. Hesselberg.

144 Ten Years' Experience with Sanatorium Treatment of Pulmonary Tuberculosis. (En tiarsstatistik fra Reknes sanatorium for tuberkulose.) I. P. Lorentzen.

141. Foreign Bodies in the Esophagus.—Uchermann has had a few patients die from this cause in his service at Christiania, and discusses some of the lessons learned from this experience. Among them is the necessity for examining the opposite side of the esophagus when the foreign body is removed from without. When it is large and has been impacted for some time the tissues are likely to be injured all around, and especially at both ends of the foreign body, so that the perforation may be double and infection may occur from the side opposite the incision. It is sometimes wise to open into the esophagus from the opposite side to explore the other side; he found this of great advantage in one case which certainly would have terminated fatally without it. The first point to be ascertained is the nature of the foreign body that has been swallowed, whether it has smooth or sharp edges. In one case the family related that the child had swallowed a cloth-covered button from her father's underdrawers, and as there was not much disturbance, and the child was able to swallow fluid food and did not seem much incommoded, while the Roentgen picture showed the button lodged not far down, several days were allowed to elapse while a suitable button-

catcher was being made, with which the button was finally safely removed. But instead of being as described, the button was of another kind and had sharp edges which had burrowed into the walls and the child died of sepsis two days later. Another lesson learned from his experience is that the Roentgen-ray examination should be done by an expert; in one case the radiograph was said to show the foreign body in a bronchus, and tracheotomy and bronchoscopy followed at once but no trace of the foreign body could be found. Another radiograph showed the foreign body in the cecum. It had evidently been in the esophagus when first seen. The foreign body is liable to induce spasmodic contraction which renders dangerous any attempt at instrumental exploration. In two cases the patients succumbed to sepsis from perforation of the esophagus by the instrument used in the attempts at extraction, remote from the actual site of the foreign body.

142. **Hemolytic Jaundice.**—Haus reports a typical case, the chronic jaundice continuing for three years till death. The findings suggest that this hemolytic form of jaundice should be classed with essential, possibly with pernicious anemia, as essentially a disease of the blood. He compares the clinical course and necropsy findings in his case with the few similar ones on record. His patient was a factory hand, 36 years old, whose sister and child had died from tuberculosis.

143. **Elderly Primiparæ.**—Hesselberg tabulates the age, duration of labor and other particulars of the first delivery of 200 women over 30, comparing them with an equal number of primiparæ under the age of 20. Twelve of the women were between 40 and 44. There was no mortality among the elderly parturients but there was a febrile morbidity of genital origin in 14.1 per cent., while the younger women under 20 had a febrile morbidity of genital origin in 20.6 per cent. The primary and secondary fetal mortality among the children amounted to 10.2 per cent., in the older and 4.8 per cent. with the young women. In 9.3 per cent. of the older women the uterus had to be evacuated by hand, while this was necessary in only 4.3 per cent. of the young women. Labor lasted for from twenty-one to twenty-nine hours in the older women and only fifteen hours in the younger.

Ugeskrift for Læger, Copenhagen

December 15, LXXII, No. 50, pp. 1569-1606

145 *Duodenal Ulcer. (Om Diagnosen og Behandlingen af det ikke-perforerede Duodenalsaar.) S. Kemp. Commenced in No. 49.

145. **Diagnosis of Duodenal Ulcer.**—In addition to the signs and symptoms generally emphasized, Kemp calls attention to the fact that in his ten operative cases gastric hypersecretion was a constant finding and in a degree seldom encountered under other conditions, not even with gastric ulcer. Hypersecretion therefore suggests either gastric or duodenal ulcer, and when excessive speaks strongly for the latter. Two of his patients vomited about a liter of extremely acid fluid from the fasting stomach and all but two had more or less fluid in the fasting stomach and generally considerable acidity. Gastric motor insufficiency was also the rule with duodenal ulcer in his experience; three of the patients had continuous retention, one considerable retention eight hours after an Ewald test meal, one after six hours and two after five hours. Three of his six patients without continuous retention had pylorospasm, and all those with continuous retention. Great variations in the amount of fluid found in the fasting stomach may be regarded as evidence of occasional transient pylorospasm. He has a record of pylorospasm in only three of his seventy patients with gastric ulcer, while it was manifest in seven of his ten patients with duodenal ulcer. Examination of the stomach functioning will often throw light on the dubious cases of duodenal ulcer. In regard to treatment, he says that the same principles apply as to gastric ulcer only that the hemorrhage from a duodenal ulcer may be harder to control. Medical measures should be the routine treatment; operative treatment should be instituted only when they fail. He operated on account of stenosis in two cases; for repeated, chronic bleeding in another, for results of pylorospasm in three and for recurrence of symptoms after an at first apparently successful course of medical treatment in three cases.

With duodenal ulcer there is less danger of cancer later than with gastric ulcer; cancer of the duodenum seems to be extremely rare.

Upsala Läkareförenings Förhandlingar

N. S. XVI, Nos. 1-2, pp. 1-136. Last indexed Nov. 12, 1910, p. 1772

146 *Råles After Tuberculin Injections Not Always Sign of Specific Focal Reaction. (Rassel efter tuberkulinjektion, som icke äro uttryck för specifik hårdreaktion.) G. Bergmark.

147 Swedenborg as an Anatomist. (Om Emanuel Swedenborg som naturforskare och i synnerhet hjärnanatom.) M. Ramström.

148 Swedenborg's Conception of the Functioning of the Brain. (Hvarpå grundar sig Swedenborgs åskit om hjärnans funktion, och särskildt om hjärnbarken som själsverksamhetens säte?) M. Ramström.

146. **Råles After Injection of Tuberculin Not Necessarily a Focal Reaction.**—Bergmark applied the subcutaneous tuberculin test to a girl of 9 who had a small, old and evidently calcified apical tuberculous process, and a recent acute bronchopneumonia, involving the other apex; the rest of both lungs was apparently intact according to the Roentgen-ray findings. An intradermal injection of tuberculin induced a lively reaction and a subsequent subcutaneous injection of tuberculin was also followed by a still more intense reaction including a pronounced exanthem and enanthem in the mouth with conjunctivitis—all these developed some time before changes in the focus indicated a focal reaction. At the same time as the exanthem and enanthem developed, råles were evident in the lower part of the lungs, and Bergmark presents evidence and arguments to prove that these råles were part of the early enanthem reaction, and that they had nothing to do with the true focal reaction later.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

I. REPORT ON AN OUTBREAK OF TYPHOID FEVER AT OMAHA, NEB. (1909-1910). By L. L. Lumsden. II. THE WATER SUPPLY OF WILLIAMSON, W. VA., AND ITS RELATION TO AN EPIDEMIC OF TYPHOID FEVER. By W. H. Frost. Hyg. Lab. Bull. 72, November, 1910, U. S. P. H. and M.-H. S. Paper. Pp. 94, with illustrations. Washington: Government Printing Office, 1910.

MEDIZINAL-BERICHTE ÜBER DIE DEUTSCHEN SCHUTZGEBIETE: Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, Neu-Guinea, Karolinen, Marshall-Inseln und Samoa für das Jahr 1908-1909. Herausgegeben vom Reichs-Kolonialamt. Paper. Price, 9 marks. Pp. 522. Berlin: Ernst S. Mittler und Sohn, Königliche Hofbuchhandlung, Kochstrasse 68, 1910.

SALVARSAN OR 606 (DIOXY-DIAMINO-ARSENOBENZOL). Its Chemistry, Pharmacy and Therapeutics. By W. Harrison Martindale, Ph.D., Marburg, and W. Wynn Westcott, M.B., London, H. M. Coroner for North-East London. Cloth. Price, \$1.50. Pp. 77, with illustrations. New York: Paul B. Hoeber, 69 East 59th St.

INTERNE KLINIK DER BÖSARTIGEN NEUBILDUNGEN DER BAUCH-ORGANE. Von Dr. Rudolf Schmidt, k. k. Primararzt am k. k. Kaiserin Elisabeth-Spital, Wien. Paper. Price, 14 marks. Pp. 355. Vienna: Urban und Schwarzenberg (American Publishers: Rebman Co., New York), 1911.

THE WORK OF THE EDWARD SANATORIUM. An Institution for the Treatment of Incipient Pulmonary Tuberculosis. Jan. 15, 1907, to Sept. 1, 1910. Including the Annual Report for 1909. Founded Jan. 15, 1907. Paper. Pp. 78, with illustrations. Naperville, Illinois.

REPORT OF THE CHIEF OF THE BUREAU OF ANIMAL INDUSTRY FOR 1910. By A. D. Melvin. (From Annual Reports of the Department of Agriculture.) U. S. Department of Agriculture. Paper. Pp. 83. Washington: Government Printing Office, 1910.

THE HARVEY LECTURES. Delivered under the Auspices of the Harvey Society of New York, 1909-1910. By various authors. Cloth. Price, \$2 net. Pp. 276, with 48 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

BIENNIAL REPORT OF THE DAIRY AND FOOD COMMISSIONER OF WISCONSIN. For the Period Ending June 30, 1910. J. Q. Emery, Dairy and Food Commissioner, Madison, Wis. Cloth. Pp. 368, with illustrations. 1910.

UNIVERSITY OF BOMBAY CALENDAR FOR THE YEAR 1910-1911. Cloth. Volume I, price, 3 rupees. Pp. 969. Volume II (Examination Papers of 1909-1910), price, 2 rupees. Pp. 342. Bombay, 1910.

CONSTITUTION, BY-LAWS, OFFICERS AND LIST OF MEMBERS OF THE SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL, 1910-1911. Cloth. Pp. 74. Dr. J. J. Nutt, Secretary, 2020 Broadway, New York.

DIÄTETIK INNERER ERKRANKUNGEN ZUM PRAKTISCHEN GEBRAUCHE FÜR AERZTE UND STUDIERENDE. Von Dr. Theodor Brugsch. Paper. Price, 4.80 marks. Pp. 245. Berlin: Julius Springer, 1911.

THIRTY-SECOND ANNUAL REPORT OF THE BOARD OF HEALTH OF THE CITY OF LAWRENCE, MASS. For the Year Ending Dec. 31, 1909. Paper. Pp. 64.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 4

CHICAGO, ILLINOIS

JANUARY 28, 1911

OCCCLUSION OF LARGE SURGICAL ARTERIES WITH REMOVABLE METALLIC BANDS TO TEST THE EFFICIENCY OF THE COLLATERAL CIRCULATION

EXPERIMENTAL AND CLINICAL OBSERVATIONS *

RUDOLPH MATAS, M.D.

AND

CARROLL W. ALLEN, M.D.

NEW ORLEANS

The chief object of this inquiry has been to determine whether the large arteries can be occluded long enough to make it possible to observe the effect of the arrested circulation in the territory supplied by the occluded vessel, without irreparably damaging the artery during the period of observation. How long can an artery be occluded so as to arrest all flow of blood through its lumen without permanently obliterating it? What is the utmost limit of time that compression with a removable metallic band can be maintained before permanent damage, leading to thrombosis, occurs in the intima? What are the changes that occur in the vessel after occlusion has been maintained for a certain number of hours, or days, at the time of the constriction and after constriction has been removed?

The importance of testing the efficiency of the collateral circulation before permanently obstructing or obliterating an important surgical tract in regions where permanent occlusion of the main regional trunk may be followed by disastrous consequences (such as the carotid, subclavian, innominate, iliac, aorta, etc.), was the chief incentive to this investigation. Hence the term "prophylactic" or "test" occlusion of arteries, may be given appropriately to this procedure.

The steadily widening field of the surgical treatment of malignant disease and the growing importance of testing the efficiency of the collateral circulation in the treatment of aneurysm and other vascular lesions, has led one of us (Dr. Matas) for several years to experiment clinically with methods that would afford the much-needed information in determining the efficiency of the collateral circulation. In connection with this subject the work of W. S. Halsted, Stratton of Oakland, Cal., Crile, Jordan of Heidelberg, Doberauer, Saiger and Riess, but especially of Halsted, with his characteristically thorough and ingenious experiments in the partial and progressive occlusion of the arteries, with rolled metallic bands, are most stimulating and suggestive. In addition to our prime object, which was to

devise a satisfactory means of testing the efficiency of the collateral circulation, we have been especially concerned with the kind of material best suited for the compression of the arteries, combining the features of tissue tolerance, facility of application, ease of removal, with a minimum of trauma to the artery. To this end a series of experiments on dogs was undertaken in the laboratory of operative surgery of the Tulane University. In the first series, 1908 and 1909, 168 experiments were performed on forty-two dogs, but of these only forty-three experiments were available, on account of infections, deaths and escape of animals. These forty-three experiments, involving the carotid and femoral arteries, may be grouped as follows: In seven the artery was occluded one day; in seven the artery was occluded two days; in fourteen, three days; in eight, four days; in four, five days; in three, six days. In twenty-two of these cases the vessel and clamp were excised together at the expiration of the stated period of observation; in twenty-one, the clamp alone was removed, the vessel remaining *in situ*, to be taken out subsequently. After the removal of the vessels, the gross changes presented by the artery were noted and photographs made showing the site of the occlusion. A series of sixteen additional experiments were undertaken (Dr. Allen), Nov. 21, 1909, to May 6, 1910, for purposes of histologic study. The carotid and femoral arteries of dogs, as in the previous series, were utilized for the work. Ten cases in which the band and vessel were removed together were as follows: One, twelve hours; one, thirty-six hours; three, forty-eight hours; three, seventy-two hours; one, 120 hours; one, 144 hours. Six in which the clamp was removed after the number of hours stated and the clamped section of the vessel was removed four to ten days later, were as follows: Two, twenty-four hours; one, forty-eight hours; three, seventy-two hours. The results obtained in the above sixteen cases confirm the conclusions reached in the first report, as previously announced by one of us (Dr. Matas) in a preliminary report submitted to the Society of Clinical Surgery, Rochester, Minn., November, 1909. In all, including the first and second series, fifty-nine available experiments were utilized in this research. A separate inquiry into the application of complete and partial occlusion to the thoracic and abdominal aorta by various methods, not described in this report, is now being carried out and will form the basis of a separate report when the investigation is completed.

Three forms of bands were used, all about as wide as one diameter of the vessel operated on; first, fine silver wire strands soldered together so as to constitute a flat surface of the thickness of the single wire; second, thin aluminum bands held around the vessel by clamping their free ends with soft lead clips; third, aluminum

* Read in the Section on Surgery of the American Medical Association at the Sixty-first Annual Session, at St. Louis, June, 1910.

bands, stout enough to maintain the desired degree of compression by simply pressing and molding them to the vessel. The silver bands which had been used on the human subjects (Dr. M.) before the experimental work began were soon discarded for the aluminum bands (No. 20, Brown & Sharp's sheet-metal gauge), which retained their hold on the artery without the aid of the lead clips.

These bands are cut long enough to be used as aneurysm needles, bent and curved in the shape of a flat hook, which can be readily insinuated between the blood-vessel and its sheath; after the band has been carried around the circumference of the vessel, it is gently compressed by the fingers of the operator until the pulse on the distal side becomes imperceptible; the excess of band which remains is cut off with stout seissors, or preferably small wire clippers.

In placing the bands around the small arteries of the dog in attempting complete occlusion, it is very easy to crush them and set up traumatic changes not directly due to the use of the band. To avoid this, one end of the band is doubled on itself, arranged somewhat like a clothespin and the vessel slipped down be-

common carotid and right subclavian for innomino-carotid aneurysm; (3) as a preliminary to extirpation of a tumor of the upper earotid region, followed in three days by simultaneous extirpation of the tumor with the common carotid, including its bifurcation; (4) to right common earotid, as a preliminary to extirpation of tumor of lower jaw and submaxillary region; (5) to left common earotid as a preliminary to extirpation of pharyngeal, palatine and tonsillar neoplasm; (6) to right common earotid and right subclavian for innomino-aortic aneurysm; (7) by Drs. Matas and Allen: to the internal and external carotids, just above the bifurcation, for innomino-aortic earotid aneurysm; (8) by Drs. Gessner and Matas, to the right common earotid at point of election for aneurysm involving earotid bifurcation; (9) by Dr. Allen, as a preliminary to extirpation of parotid tumor; (10) by Dr. I. Cohn, to the right common carotid and right subclavian for innomino-aortic aneurysm; (11) by Dr. Cohn, to left common earotid, as a preliminary to extirpation of carcinoma of neck, jaw and cheek; (12) by Dr. Gessner, to right common earotid, as a preliminary to extirpation of carcinoma of root of tongue; (13) by Dr. Matas, on

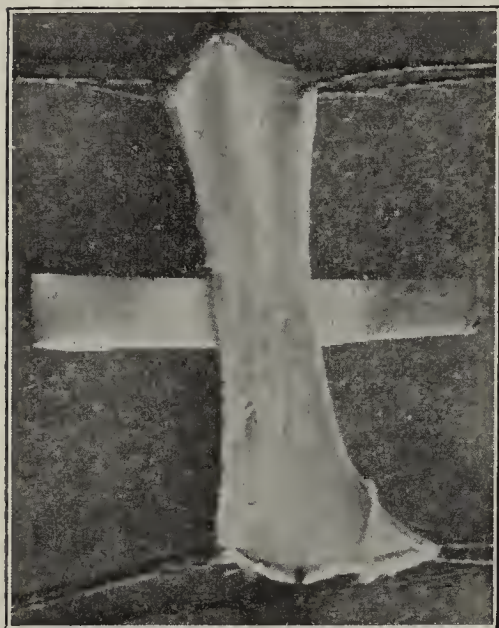


Fig. 1.

Fig. 1.—Femoral, clamped twenty-four hours. Small collateral given off above point of compression. Removed ten days later. All illustrations 1 to 12 represent a magnification of $3\frac{1}{2}$ times. The small transverse markings seen in some at points away from the clamps were produced by slight shrinking of vessel.

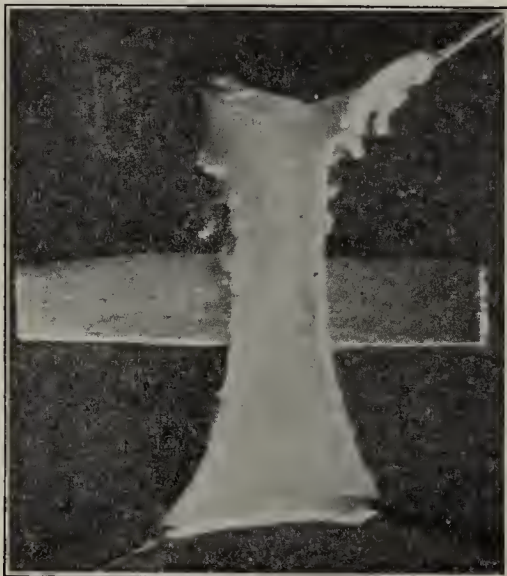


Fig. 2.

Fig. 2.—Carotid, clamped forty-eight hours; absolutely uninjured.



Fig. 3.

Fig. 3.—Femoral clamp removed after forty-eight hours, and vessel removed ten days later. Small pits seen are openings of collaterals.

tween the opposing surfaces of the band, until the pulse can no longer be felt. The excess of band is then cut away; in this way danger of crushing by excessive force is reduced to a minimum.

Each band should be prepared for use by paring the sharp angles of the free end that is to be carried around the artery with scissors, the sharp edges should also be softened with a file; this is what Professor Halsted has aptly described as "manicuring a band."

If it should become necessary to remove the band at any time, on account of isehemic disturbances in the territory supplied by the occluded vessel (e. g., when cerebral disturbances occur after occlusion of the common earotid), the point of a sharp instrument inserted between the approximated ends of the band and slightly twisted accomplishes the separation and releases the vessel, allowing the circulation to be restored.

The bands have now been applied in the human subject fourteen times, seven times by Dr. Matas: (1) to the right common earotid and right subclavian, (third division), for innomino-aortic aneurysm; (2) to right

the common earotid to control bleeding and starve a carcinoma of right parotid region. In all these cases the bands were applied as "test occlusions," but, as in no instance did cerebral or other disturbances in the peripheral circulation develop, the bands were allowed to remain undisturbed and in this way permanently occluded the vessels to which they were applied.

The only case (No. 14) in which the prophylactic value of this method of occluding the arteries was demonstrated, was a case of pulsating exophthalmos, in which ligation of the right earotid had been done twenty years previously.

The case was reported by Dr. Charles H. Mayo at the recent meeting of the American Surgical Association, Washington, May 3-5, 1910. The patient, a woman over 60 years of age, had suffered from a relapse of all the exophthalmic symptoms, complicated with general cirroid enlargement of the vessels of the cranium and face.

The patient came to him after the common carotid on one side had been ligated for arteriovenous aneurysm [presumably traumatic rupture of internal carotid in the cavernous sinus. R. M.].

In this operation an attempt was made to ligate the dilated vessels around the orbit, resulting in the loss of an eye. When the patient came to Dr. Mayo there was an enormous protrusion of the left eye and pulsating veins on that side of the head. He determined to occlude the common carotid by the method we have described, and proceeded to do so under cocaine anesthesia, using a little clip of block tin about three-quarters of an inch long and the width of the artery. When he was almost through with the operation, the patient remarked that she could not see anything; "the light was



Fig. 4.—Carotid, clamped seventy-two hours; absolutely uninjured.

going out."¹ He immediately began to loosen the clip until the vision returned. This was done six months ago, and last week (end of April, 1910) the clip was still on her common carotid and her vision was better than before the operation.¹

This was a brilliant and convincing demonstration of the superiority of the band over the ligature.

If a ligature had been applied, irremediable damage to the artery would have followed.



Fig. 6.—Carotid, clamped ninety-six hours. Intima adherent and vessel walls slightly corrugated at that point.

In all our cases the perfect tolerance by the tissues of the band, when properly applied, was demonstrated; without exception the bands remained permanently encysted in a fibrous sheath, without causing the slightest irritation.

1. See report of the proceedings of the American Surgical Association, May 3-5, 1910, Washington, D. C., *Ann. Surg.*, July, 1910, p. 130.

As a result of this experimental inquiry, the following conclusions were arrived at:

1. It is possible to compress a vessel to the point of obliterating the pulse and maintain this pressure for from three to four days before obliterative endarteritis occurs.

2. All the vessels clamped in this manner stand compression seventy-two hours without recognizable gross visible changes; some begin to show decided changes in ninety-six hours.



Fig. 5.—Femoral, clamped seventy-two hours; removed ten days later. Note collaterals.

In a report of the examination of the fifteen specimens of dogs' arteries (femoral and carotid) made by Dr. Frazer B. Gurd, demonstrator in the Laboratory of Surgical Pathology at Tulane, he concludes:

Unless trauma be sufficiently marked to crush the tissues throughout the entire thickness of the vessel walls, no changes will be noted, either in the endothelial lining or in the inner layers of the muscular coat in the vessels which have been clamped for seventy-two hours or less. In vessels which have been subjected to clamping for four days or more, there does not appear to be the same tendency to return to normal

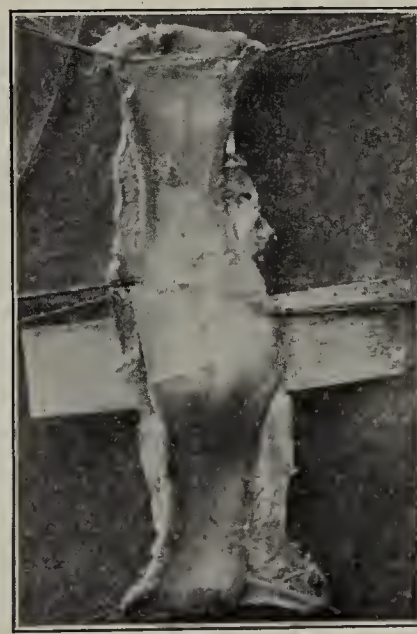


Fig. 7.—Femoral, clamped 120 hours; removed thirteen days later. Obliteration; staining from adherent thrombus.

conditions. The lumen remaining obliterated, but little evidence of degenerative change is seen and thrombus formation is, apparently, not prone to take place.

Finally, there is seemingly no reason why in ligating the great vessels at the root of the neck and at the limbs, in continuity, these removable bands should not be substituted for the circular ligature, which permanently damages the artery, even when carefully applied. The

ligature cannot be released when fatal ischemia threatens in the peripheral parts, as in the brain, without almost absolute certainty of thrombus formation or embolism starting at the seat of the ligation. The advantages of this simple method of arterial occlusion which interrupts the circulation without damaging the arteries permanently, can be readily appreciated by all those who realize the practical importance of first testing the efficiency of the collateral circulation.



Fig. 8.—Carotid, clamped 144 hours. Vessel removed eighteen days afterward. Complete obliteration with adherent thrombus.

REPORT OF THE HISTOLOGIC EXAMINATION OF THE
ARTERIES CLAMPED WITH METALLIC BANDS, BY
DR. F. B. GURD

The specimens supplied by Drs Matas and Allen for histologic examination consisted of small portions of dogs' arteries, carotid and femoral, but chiefly carotid. Altogether fifteen such specimens were examined. The tissues were fixed in Zenker's solution, and in 10 per cent. dilution of liquor formaldehydi, in order to have better material for the determination of elastic tissue changes. They were imbedded in paraffin and sections stained by hematoxylin-eosin, Mallory's connective tissue stain, phosphotungstic-acid-hematein and Weigert's elastic tissue stains.

Since the changes in practically all the vessels are similar, a detailed description will be made of only those which show more important variations. The specimens, in general, fall into two groups, the first of which, containing twelve arteries, is composed of sections from vessels removed immediately after taking off the clamps after these had been in position for periods varying from twelve to 144 hours. The second group consisted of three specimens in which following

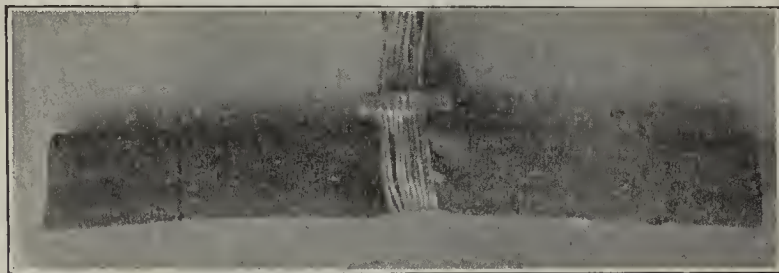


Fig. 10.—Early model of band made of silver strands held in place with clip (obsolete).

the application of the clamps during periods of twenty-four, forty-eight and seventy-two hours, respectively, the vessels were left, *in situ*, for seven days in order that late changes might be studied.

As a general statement it may be said that no intimal or endothelial changes appear in any of the sections from vessels which had been clamped for seventy-two hours or less, with the exception of two which will be described in detail. In practically all specimens there is a more or less marked change in the adventitia and in the outer portion of the muscular coat. These changes consist, in the less marked cases, of a swelling of the collagenous fibrils together with an edema present in the adventitia and between the muscle bundles in the outer muscular layer (Fig. 15). In the other vessels about the situation of the clamp there is an

infiltration with lymphoid and plasma cells, together with a slight increase in the number of vessels in the adventitia. In two instances the adventitia and the surrounding tissues are the site of an acute inflammatory process as evidenced by the presence of polymorphonuclear leukocytes and fibrin, evidently the result of infection.

It is noteworthy that, in the three vessels in which the clamps had been removed seven days prior to removal of



Fig. 9.—Carotid, clamped 168 hours; removed fifteen days later. Complete destruction of intima. Difficult to re-establish lumen of vessel.

the vessel itself, there is found, practically, an absolute return to normal conditions, a slight increase in the number of lymphoid and plasma cells in the adventitia alone being noted.

In two instances the inner coats of the vessel showed changes caused by excessive pressure, which crushed the vessel wall. One of these occurred in a specimen removed thirty-six hours after the application of the clamp. The adventitia in this case is the site of an acute inflammatory process, there being moderate numbers of polymorphonuclear leukocytes, as well as fibrin and serum present in the outer portions of the adventitia. The lining endothelium in one area has apparently been destroyed and the removal of the clamp has not resulted in the return of the vessel to its normal tubular shape. Lying between the separated muscle bundles in the inner part of the muscle coat are collections of red blood

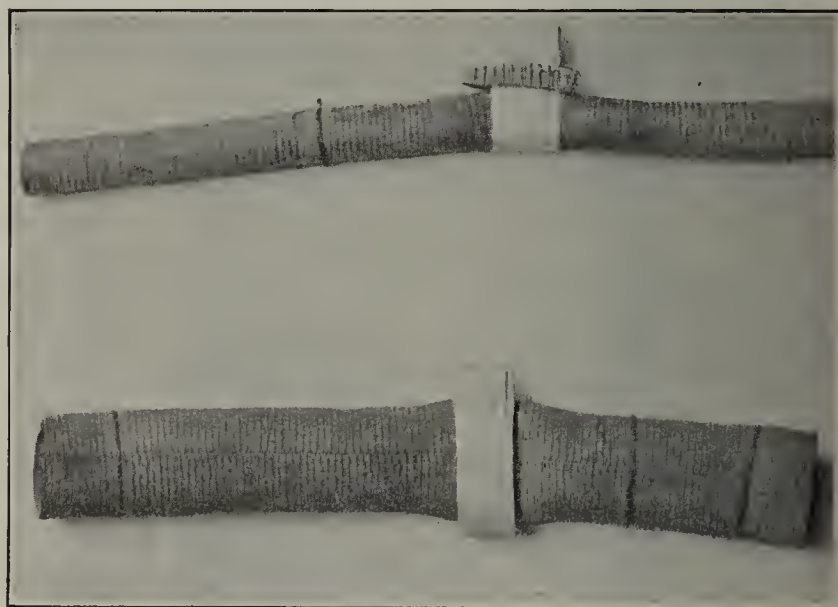


Fig. 11.—Two solid aluminum bands above, old model, thin metal, held in place with lead clip (obsolete); below, latest model, thicker (20 Brown & Sharp's sheet-metal gauge), soft enough to be moulded by digital pressure and thick enough to compress vessel without clip.

cells together with a few polymorphonuclear leukocytes. Lying within the lumen and attached to the wall of the vessel at a point proximal to that area at which the walls are adherent is an oval thrombus containing numerous polymorphonuclear leukocytes (Fig. 16).

The other case is of even greater interest in view of the difficulty which has been constantly experienced in producing

aneurysms experimentally in lower animals by mechanical means. The specimen is a portion of a carotid which had been clamped for a period of seventy-two hours, the vessel being excised shortly after the removal of the clamp. When viewed with the unaided eye this section consists of a vessel 9 mm. in length, having a wall 1 mm. in thickness. The lumen of the vessel at either end measures 2 mm. in width. In the center, however, there is a fusiform dilatation 3.5 mm. in length and 3 mm. in width. Examined microscopically, it is noted that, with the exception of that portion of the vessel surrounding the dilatation, the wall is normal. This dilated portion shows a complete destruction of muscle fibers with

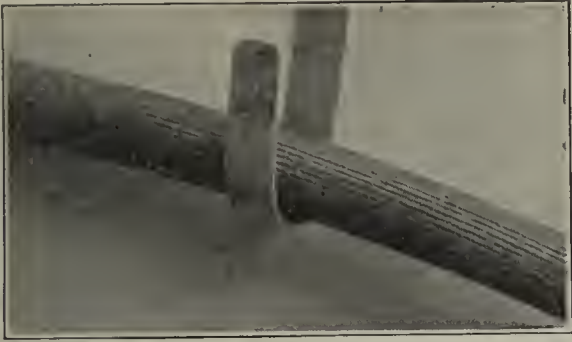


Fig. 12.—Mode of applying aluminum band to artery (rubber drainage tube used as model). The bands are originally cut long enough to be handled and used as aneurysm needle.

the exception of a few nuclei in the outer zone which stain poorly. The tissue in this area is composed of a hyaline or slightly granular staining material, practically devoid of cellular elements. The wall is about half the thickness of that in the more normal-looking portions of the vessel. The endothelium is intact throughout the entire length of the vessel including that portion showing the aneurysmal dilatation (Fig. 17).

Three specimens which were removed after five or six days' clamping show a similar condition to one another. None show marked degenerative processes, but in all the continuity of the lumen has been destroyed, the vessel not having returned to its tubular form. The endothelial lining, however, so far as it can be identified, appears normal, the obliteration of the lumen being due apparently to a loss of

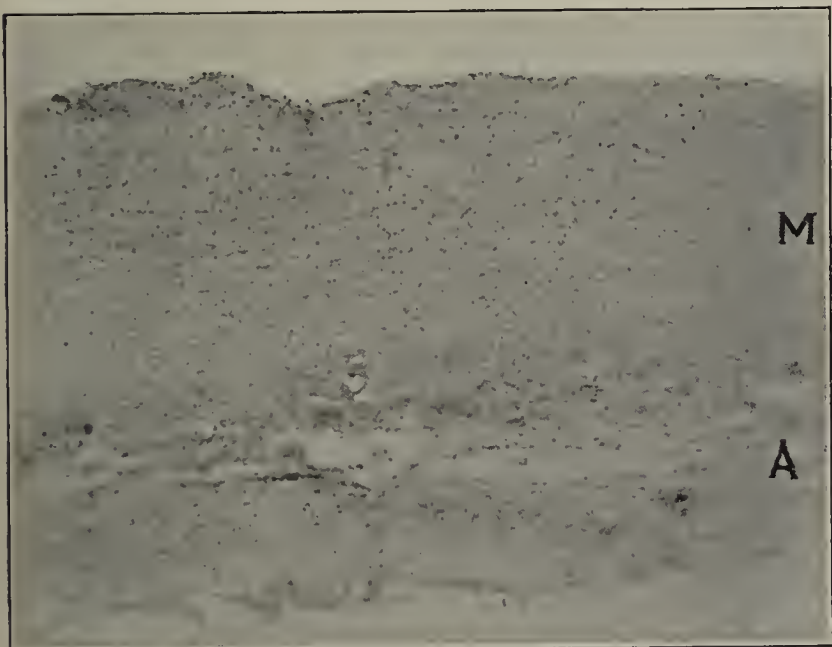


Fig. 14.—From photograph of vessel-wall after application of clamp for seventy-two hours. Note normal appearance. M, media; A, adventitia. Magnified sixty times.

elasticity of the wall rather than to any cohesion of the opposed surfaces. All vessels show a moderate destruction of the muscular tissue and replacement by edematous fibrous tissue, but in none is this process extensive.

CONCLUSIONS

To sum up, it may be stated that unless trauma be sufficiently marked to crush the tissues throughout the entire

thickness of the vessel wall, no changes will be noted either in the endothelial lining or in the inner layers of the muscular coat in vessels which have been clamped for seventy-two hours or less. Exactly what may have been the determining factor in the complete degeneration in the musculature preceding the production of the aneurysm described in the last specimen apart from pressure atrophy does not appear evident from the examination of the specimen histologically; the process has apparently progressed very rapidly since we find at the end of seventy-two hours a complete destruction of all the muscula-

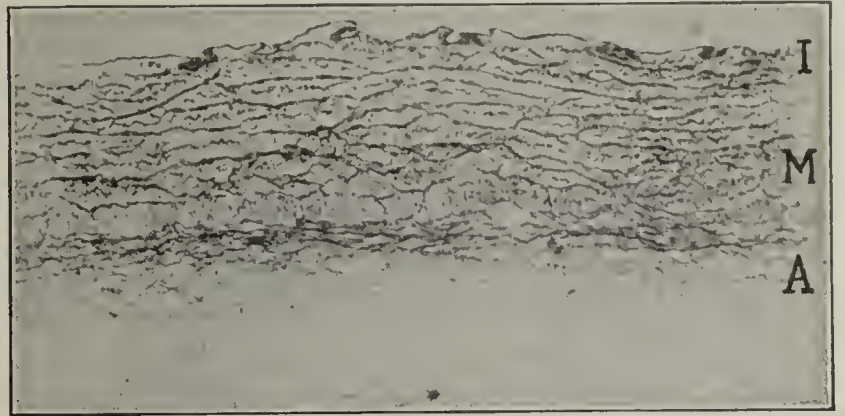


Fig. 13.—From photograph of vessel stained with Weigert's elastic tissue stain, showing normal arrangement of fibers following application of clamp for forty-eight hours. I, intima; M, media; A, adventitia. Magnified fifty times.

ture of the vessel wall. In vessels which have been subjected to clamping for four days or more there does not appear to be the same tendency to return to normal conditions. The lumen remains obliterated, but very little evidence of degenerative changes is seen; thrombus formation is, apparently, not prone to take place.

ADDENDUM.—While this paper is going through the press we have had an additional opportunity to test the value of our removable bands in the occlusion of the common carotid. The results have confirmed so strikingly the argument advanced in the text that we feel amply justified in supplementing it by appending a brief detail of the observation. On Nov. 16, 1910, a white laborer, aged 62, entered our surgical service (Ward 69) in the Delgado Memorial Charity Hospital, pre-



Fig. 15.—From photograph of vessel-wall removed after having been clamped forty-eight hours. Note normal intima and acute inflammatory process in adventitia. M, media; A, adventitia. Magnified fifty times.

sending an advanced carcinoma of the left upper maxilla. The tumor projected as a disfiguring mass from the cheek and was complicated by a large aggregation of glands which filled the left submaxillary and upper carotid regions. As these glands were immovable and adherent to the carotid sheath, as low down as the bifurcation of the carotid, we concluded that a radical operation would be impossible without a block dissection of the glands, which would in all probability neces-

sitate the extirpation of the carotid branches, including the bifurcation and the upper internal jugular. We therefore decided to limit our first occlusion of the common carotid at the point of election in order to test the efficiency of the collateral circulation in the brain. This procedure was carried out at our regular clinic on Monday, November 21. The artery was readily exposed after a preliminary local cocaine (Schleich No. 1) and epinephrin anesthesia which was in every way satisfactory. An aluminum band was adjusted to the common carotid, the band being molded and pressed on the vessel with the fingers until the pulse on the distal (cerebral) side ceased to beat. Before this was done, careful note was taken of the pulsation of the opposite right carotid and of the pulses in the peripheral branches (facial and temporal) which

toms. The patient was reported doing well and comfortable until about 6 p. m. when it was noticed that he had become aphasic and very somnolent and almost completely hemiplegic on the right side of the body. We were quickly notified of the occurrence by the intern of the service and one of us (Dr. Allen) at once proceeded to the bedside. He found the condition of the patient as above stated; the stupor amounting almost to coma, with vomiting, marked dyspnea and rapid, weak pulse 120, temperature subnormal.

All these manifestations came on rather suddenly. After some unfortunate delays, the wound was reopened with aseptic precautions and the band removed at 7:30 p. m. about one hour and a half after the brain symptoms had been recognized. After the removal of the band, the circulation in the carotid and its branches was quickly restored. The peripheral pulses in the facial and temporal could be felt, and the artery pulsed where the band had previously compressed it. No damage had been done to the artery apart from a slight edematous indentation. The wound was closed with sterile adhesive strips and occluded with sterile dressings. During the night that followed the patient roused more easily, the pulse fell to 90 and the respiration improved. The next day, Tuesday, November 22, the patient was still more lucid, though aphasic, and less paretic in the right arm and leg.

He swallowed well and maintained a good state of nourishment. On Wednesday, November 23, there was marked and decided improvement in speech; no somnolence or stupor; the hemiparesis of arm and leg was rapidly disappearing. Thursday, November 24, patient's mental state was practically normal. Speech was no longer impaired; there was no aphasia; he had regained full control of arm and leg. All that remained was a tingling and slight numbness in the right arm and leg. Here, then, we have a conclusive demonstration of the complete recovery of the brain after a period of ischemia in the left hemisphere lasting about nine hours, and a complete functional recovery in about sixty-two hours after the removal of the occluding band. It is probable that if the band had been removed immediately on the appearance of the first symptoms the period of repair would have been shortened considerably.

As it is, the value of the band as a preliminary test of the competence or incompetence of the cerebral collaterals has been convincingly demonstrated. Had the artery been ligated in the old-fashioned way it is more than probable that irreparable damage would have followed and that we should have had to deplore a calamitous fatality instead of rejoicing at a happy rescue from a most menacing situation.

It is also significant that this is the second time in our experience with fifteen carotid occlusions in which grave cerebral complications have been avoided by the timely removal of our metallic band.

2255 St. Charles Avenue.

ABSTRACT OF DISCUSSION

DR. GEORGE W. CRILE, Cleveland: Since hearing Dr. Matas' paper in Washington, I have had an opportunity to test his methods in two cases. In some instances one knows from the symptoms present precisely the point of election for amputation of an extremity, but when there is doubt as to the point of election this method of Matas and Allen is an excellent one. The extremity is blanched up to the pelvis with an Esmarch bandage, making the limb ischemic, and then the femoral artery is compressed to let the operator watch the collateral circulation. In that way one gets a definite line, a blush or erythema, which marks the point of election for the amputation. In operations on the brain, or in operations requiring closure of the carotid artery, the brain must be considered, and here it is a matter of extreme value to us to have this method. In operations on the head and neck, I have closed temporarily the carotid artery more than one hundred and fifty times. I have found among these observations many things bearing on the points made by Dr. Allen. In younger subjects one almost never observes unfavorable symptoms, but in aged subjects I have seen rather marked phenomena. For instance, in operations with closure of the common carotid artery, in a patient over 70 years old, I have seen slight

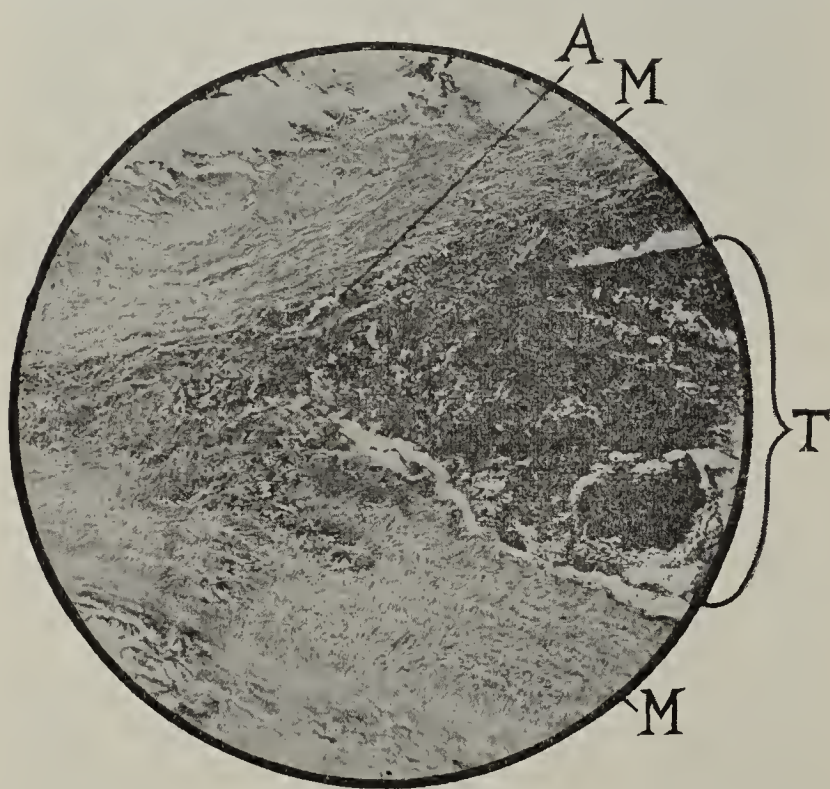


Fig. 16.—From photograph of vessel-wall after elamping for forty-eight hours. Note hemorrhage between muscle fibers in inner third of vessel (A); also, destruction of endothelium and adherent thrombosis (T). M, media. Magnified thirty times.



Fig. 17.—Aneurysmal dilatation produced by elamping artery of dog for seventy-two hours with crushing force; the only example of dilatation obtained in our extended work; a, appearance same section with low amplification; b, actual size of dilated vessel.

were distinctly felt. After the occlusion, it was noticed that the temporal and facial pulses on the corresponding (left) side had practically ceased; while those on the opposite side remained undisturbed. The patient stood the operation perfectly, assisting us in changing the position of the head to suit our purposes. We watched carefully for cerebral symptoms after the occlusion, but the patient never complained; the pupils remained symmetrical, there was no syncopal feeling or dizziness and only a little pallor on the affected side. The patient drank a toddy with relish. The wound was then closed in the usual manner. The artery was occluded at 10:30 a. m., and the patient was on his way to the ward at 11 a. m. Instructions were given to watch carefully for cerebral symp-

delirium for a day after the occlusion of the artery for half an hour. We now know exactly what has happened, thanks to the investigations on anemia of the brain. The brain cells do not endure a total anemia lasting more than six or seven minutes. When they are subjected to anemia lasting longer than that, a permanent degeneration of certain cells occurs. They are the cells of the cortex. It therefore becomes necessary that the collateral circulation be tested under certain circumstances before we dare hazard the closure of the common carotid artery. This is particularly true when one is obliged to make permanent closure of the artery. It is by methods of this kind that one can test the collateral circulation of the brain to see whether or not such a permanent occlusion can be made.

Whenever the circulation of the brain is impaired by old age or other reasons, temporary occlusion of the common carotid artery produces some interference with cerebration. Such a case is not a safe one for permanent occlusion, and we know very well that in permanent occlusions of the common carotid artery softening of the brain is a sequence, depending on the age of the patient—in young patients not more than 10 per cent. If one were to tie the common carotid artery in 100 patients over 70 years of age, one would probably find impairment of the cortex of the brain, up to complete softening of one side, at least in 90 per cent. Therefore, I regard closure of the common carotid artery in older subjects as a very hazardous procedure.

DR. D. N. EISENDRATH, Chicago: The field which this paper has opened up is coming to be of considerable practical surgical importance. Dr. Strauss and I have been carrying on a series of experiments during the past winter, endeavoring to imitate as closely as possible the temporary closure of the arteries and veins of the kidney during the removal of renal calculi. In order to imitate these conditions as closely as possible, we undertook a series of experiments on rabbits, compressing the renal artery and vein for 15 minutes, then for 30, then for 45 minutes, 1 hour and 2 hours. The results of our experiments, in brief, are these: With the rabbit's kidney, which is very sensitive (there is scarcely any animal whose organs are more sensitive to arterial anemia than those of the rabbit), at the end of 15 minutes there was a slight amount of cell infiltration. At the end of 30 minutes this had slightly increased. At the end of an hour the parenchyma of the kidney showed marked signs of parenchymatous degeneration and of calcification. After 2 hours the changes were profound. These animals were killed at the end of 4 weeks. The animals killed after 48 hours showed very slight changes indeed. This emphasizes the fact that one can keep up compression on these arteries without very much influence on the parenchymatous structure of the organs, for at least a short space of time.

DR. C. W. ALLEN, New Orleans: Dr. Crile brought out a very important point—the age limit of the patient. The nearer the patient to 45 years of age, the greater the danger of closing either of the carotids. We have found, however, that this was not always reliable, as demonstrated in several cases in which anomalies have occurred. In these cases, the circle of Willis was not competent to supply both sides of the brain, the communication between the two sides not being sufficient. In conditions of this kind, trouble is likely to arise, no matter how young the patient. The determination of these conditions before permanent occlusion of the carotids was one of the needs that stimulated our developing this method. Another point which Dr. Eisendrath's remarks suggested is that we have found the bands extremely useful in operating in a limited space, where it is necessary to secure hemostasis and very little room is found available for the application of a clamp, even the size of a Crile clamp; in these cases the band will take up almost no room.

Comatose Malaria.—H. L. Sutherland states that the treatment of this condition may be summed up in plenty of quinin hypodermically and ice-caps to the head. To attempt to give medicine by mouth is, he says, worse than useless, as the jaws are locked in nearly all cases, and deglutition is very uncertain.—*Memphis Medical Monthly*.

ARTERIOSCLEROSIS OF THE UTERINE VESSELS

WITH A CONSIDERATION OF THE CAUSE OF HEMORRHAGE
AND REPORT OF CASES *

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In the history of this condition we find a cycle such as is common in many medical subjects. At first only the changes in the uterine muscle and blood-vessels were considered. After Olshausen's introduction of the curette attention was centered on the endometrium. All irregular bleeding was attributed to changes in this structure, and an almost infinite number of classifications and varieties of endometritis resulted. The work of Adler and Hitschmann,¹ which was later verified by Norris and Keene,² has shown that much of that which was formerly considered pathologic in the endometrium is simply the normal change that occurs in the menstrual cycle.

But long before this work on the endometrium was done, attention began to be directed again to the changes in the blood-vessels and uterine muscle. I shall not attempt to review all the literature on this subject but shall refer to only a few of the more important articles. Findley³ in 1901 was one of the first in America to write on this subject, notwithstanding operators had been removing the uterus for this condition for several years before. The case he reports was one of the so-called "apoplexia uteri" due to an embolism of the uterine arteries, which was probably cardiac in origin. In his later paper⁴ he attributes the hemorrhage to a muscular insufficiency, and this in turn to an overgrowth of the fibrous tissue, both between the muscle bundles and about the arteries. With these conclusions I do most heartily agree concerning the value of the uterine muscle in the control of hemorrhage. Anspach⁵ demonstrated that the increased connective tissue in and about the arteries was very largely elastic rather than fibrous tissue. He suggested that, as this elastic tissue was so commonly found in the uteri of multiparæ, its presence was physiologic rather than pathologic and that the hemorrhage in these cases was due to a lack rather than an excess of elastic tissue.

Goodall⁶ has made another and very decided advance in our knowledge of these cases. He has shown that the uterus after each pregnancy develops a complete new set of arteries; that where the difference in size between the old artery and the new one is great as in the placental area, a complete new vessel with three complete new coats is formed within the lumen of the old one; but where the difference in size is less marked, part of the old vessel is retained and is incorporated as a part of the wall of the new vessel. Normally the unutilized portions of the walls of the old vessels undergo hyaline degeneration and are completely absorbed. This is the ideal involution. But when some local disturbance or constitutional condition complicates the puerperium, the change is less perfect and the muscularis of the old ves-

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Adler and Hitschmann: *Monatschr. f. Geburtsh. u. Gynäk.*, xxvii, part 1.

2. Norris and Keene: *Surg., Gynec. and Obst.*, x, No. 1, p. 44.

3. Findley, Palmer: *Am. Jour. Obst.*, xliii, 30.

4. Findley, Palmer: *Am. Jour. Obst.*, lli, 71.

5. Anspach: *Univ. Penn. Med. Bull.*, xviii, No. 12, p. 322.

6. Goodall: *Am. Jour. Obst.*, ix, No. 6, p. 921.

scl, after the hyaline degeneration has taken place, is replaced by elastic tissue instead of muscle. This is in accordance with Nature's law to do the best thing possible under the conditions present. Where the disturbing factor is very severe, and particularly in patients past 35 years of age, instead of elastic tissue, Nature produces a structure even lower in the scale, that is, fibrous tissue.

Pankow,⁷ in an effort to find some definite pathology for these cases, examined fifty-two uteri, excluding all benign or malignant new formations and fresh or old inflammation. He says:

From a comparative anatomic examination of uteri from bleeding and non-bleeding multiparæ and nulliparæ there is no



Fig. 1.—Normal vessels from girl aged 18. Never pregnant. Uterus removed on account of double pyosalpinx.

evidence of anatomic change to account for hemorrhage. All the changes in the myometrium considered in causal relation with bleeding are found only in part of the clinical bleeding cases, and are found in others having no clinical history of bleeding.

He concludes that "there is therefore nothing characteristic for bleeding uteri."

In his later paper Anspach⁸ minimizes the influence of the arterial and muscular changes in the causation of hemorrhage and suggests that the cause is some other condition, as endometritis, lacerations, displacement of the uterus, pelvic inflammation or pelvic congestion from disease of the heart or kidneys. The objection to considering these conditions as the primary cause is the fact that they are so commonly found without any accompanying disturbance of the menstruation.

Out of twenty-five patients who have had a hysterectomy for hemorrhage in the past five years, I have studied the uteri of eleven. These were all in which I was able to find both the specimen and a history sufficiently detailed to justify examination. In addition to these I have studied the uteri from three other multiparæ which had been removed for other causes; one an enlarged uterus that had been causing pain, one a complete prolapse, and one for a very hard suspicious cervix, although curettings and pieces of the cervix were reported not malignant. The patient, one year past the menopause, had no hemorrhage, but a slight leukorrhea.

Specimens were taken from just below the level of the tubes, about the internal os and from the cervix where it had been removed. Sections were made to include the entire thickness of the uterine wall, and were stained with hematoxylin and eosin, Van Giesen, Weigert and Van Giesen and Weigert carmin.

Gross Pathology.—On account of the hardening and shrinkage, it was very hard to draw conclusions concerning the size of the uterus, particularly as many of them had been removed by a supravaginal hysterectomy. Those that had been removed recently all showed an enlargement of varying degree. On cut section the vessels stand out quite prominently and appear to be larger in size and more numerous than normal. I was able to be more certain of this in three cases in which operation had been performed recently. In the specimens that had been in preservation for a long time, this feature was not so apparent.

It would seem that this increase in number and size of the vessels had some etiologic relation to the hemorrhage.

Endometrium.—One patient had a polypoid endometritis with a history of a curettement two years previously and removal of a polypus at that time. The endometrium in the other ten showed varying degrees of thickening, depending on the relation to the menstrual period, but nothing that was characteristic of hemorrhage could be found.

Muscle.—There was in all the cases some increase in connective tissue. In some the fibrous tissue predominated, in others the elastic. The development of elastic tissue between the muscle bundles did not seem to bear



Fig. 2.—Case 8—Moderate hemorrhage. Moderate arteriosclerosis.

any relation to the severity of hemorrhage either for or against it, *e. g.*, in Case 1 with a moderate development of elastic tissue there was very severe hemorrhage, and in Case 2 with equally severe bleeding there was a very marked increase of elastic tissue. The same can be said of the fibrous tissue. No difference could be detected by the pathologic examination between the cases with hemorrhage and those having no such history.

Blood-Vessels.—The arteries all show some increase of elastic tissue, particularly around the vessel. This, I take it, is the subinvolution to which Goodall called attention.

7. Pankow: Ztschr. f. Geburtsh. u. Gynäk, lxx, 336.

8. Anspach: Surg., Gynec. and Obst., lx, No. 3, 315.

But I could not trace any connection between the amount of elastic tissue and the severity of the hemorrhage, or its presence or absence.

There is one class of cases to which little attention has been given. That is those in which there is a marked dilatation or varicose condition of the veins of the uterine wall.

The only case I have been able to find in which there has been a hemorrhage from a rupture of such a vein is the one reported by Dr. Simpson, in 1905.⁹ But I have records of four others in which there was a very decided dilatation of the veins, particularly of the cornu of the uterus and a varicose condition of the veins of the broad ligament.

In all but the first of these cases the diagnosis was made before operation by Dr. Simpson. In all the uterus was very soft and there were varicose veins of the vagina or labia; so that it would seem possible to make at least a tentative diagnosis before operation where the patient gives a history of menorrhagia or metrorrhagia, where a very soft uterus is found on examination and the curet shows carcinoma not present. Such patients are likely to have varicose veins in other parts of the genital tract.

Microscopic examination in these eleven cases failed to show anything present in the cases of hemorrhage that was absent in the ones without such a history, or the converse; so that I must agree with Pankow, who concludes that it is impossible to tell from the history what the microscopic picture will be, and also that it is impossible from the microscopic examination to construct a clinical picture.



Fig. 3.—Case 5—Quite severe hemorrhage. Marked arteriosclerosis.

It has long been known that proper uterine contraction is the chief factor in the control of normal uterine bleeding.

Attention was directed to this again by Findley,¹⁰ and recently by Norris and Barnard.¹¹ These writers called attention to the fact that the menstruating uterus is larger and has a larger cavity than the non-menstruating one. Bell and Hicks¹² have shown a regularly recur-

ring contraction in the menstruating uterus of rabbits which were absent at other times. This leads us to believe that during the interval between menstrual periods the uterine muscle is in a state of tonic contraction and that there is during the menstrual period a relaxation and consequent hemorrhage. The relaxation and coincident hemorrhage that occurs at times during a curettement is a common experience, and the necessity of securing proper uterine contraction post partum is well known. The influence of ergot in the control of hemorrhage is equally well known.

With our present pathologic methods it is impossible to estimate the functional power of muscle tissue, so

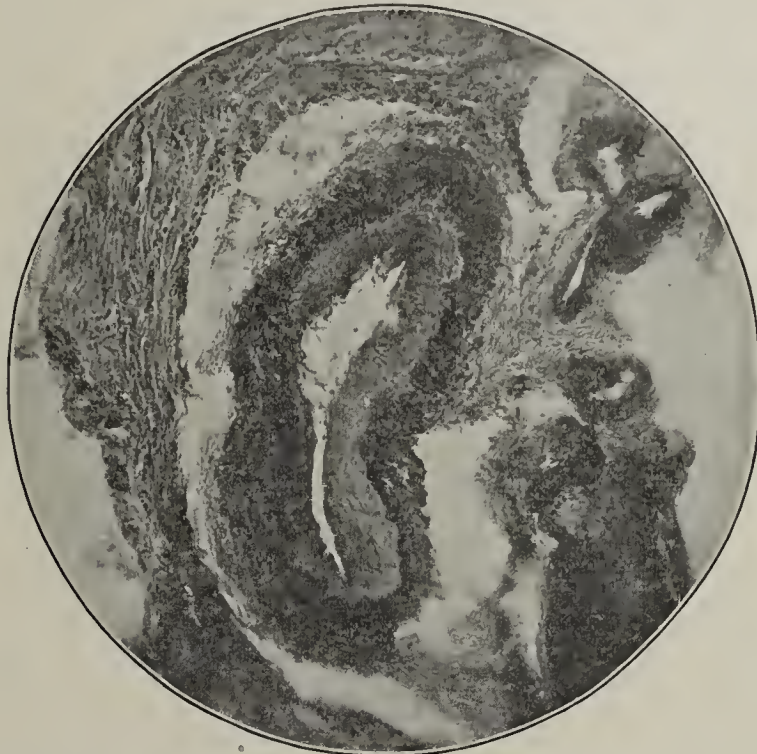


Fig. 4.—Case 9—Very severe hemorrhage. Moderate arteriosclerosis.

that it is not possible to demonstrate loss of functional power of the uterine muscle.

But it is now known that the increase of elastic and fibrous tissue in the multiparous uterus, although very common, is pathologic and due to some disturbance during the puerperium. It would seem reasonable to infer that there has been some loss in strength in the muscle, either from the same condition which caused the increase in connective tissue, or as a result of its presence. This would seem to me to furnish the predisposing cause for hemorrhage.

From the fact that this disturbance must have been active and produced its effect during the last puerperium, which in many cases was a number of years before the onset of the hemorrhage, we must look to something other than these puerperal changes for the immediate cause of the bleeding.

I would suggest that the increase in size and number of the vessels seen has some and possibly a very decided influence.

Whether this is an actual increase in vessels or merely a dilatation of those already present we do not know. The latter is more probable.

As I have stated, lacerations and displacements without excessive bleeding are so common that they do not seem to be an adequate cause of hemorrhage. One of my cases had a prolapse fourteen years before the beginning of her menorrhagia, and this was the only one of a moderately large series of prolapse cases in which bleeding of any moment occurred.

9. Simpson: *Am. Jour. Obst.*, III, No. 5.

10. Findley, Palmer: *Am. Jour. Obst.*, III, 71.

11. Norris and Barnard: *Am. Jour. Obst.*, Ixi, 753.

12. Bell and Hicks: *Brit. Med. Jour.*, 1909, I, 517.

Four of my eleven patients had probably had chronic nephritis as shown by the urinary findings. Two patients had had recent operations for repair of laceration, and bleeding became so severe while they were in bed that hysterectomy was necessitated. Another one had had a recent abortion and mild infection with a consequent local congestion. The other five gave no history of anything that would seem to be an adequate exciting cause except that they were all in the neighborhood of 40 years of age, when it is common to find general arteriosclerosis and a general rise of blood-pressure. This would seem to be worth investigating carefully.

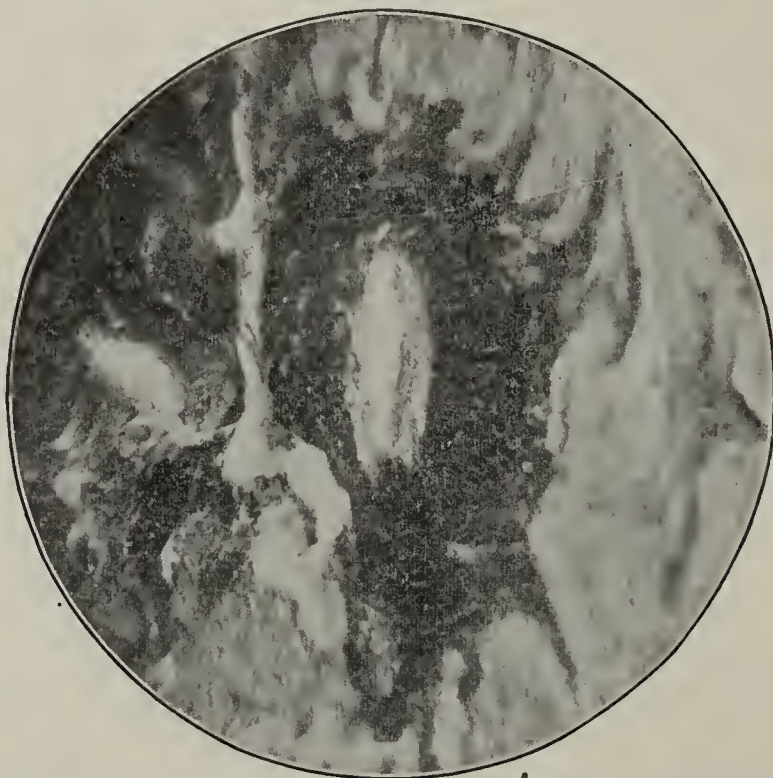


Fig. 5.—Case 3—Moderate hemorrhage. Marked arteriosclerosis.

Although I admit that my cases are too few to permit definite conclusions to be drawn, yet I would suggest as immediate causes for hemorrhage, (1) the increase in size and number of the blood-vessels, (2) a general increase of blood-pressure from kidney disease or general arteriosclerosis, (3) local acute congestions, (4) and anything that causes a general or local loss of muscular tone.

Treatment.—One cannot pass these cases without mentioning the necessity of excluding carcinoma. This can usually be done only by the examination of curettings and in some a section from the cervix. Even a history of hemorrhage for a number of years previous is not sufficient, as carcinoma may be a later development. This was the case in No. 3 of my series. There was a history of menorrhagia for four years, with the onset of metrorrhagia fifteen months before. At the time of operation a border-line case of carcinoma of the cervix was found.

The majority of the cases come finally to hysterectomy and we would agree with Gardner and Goodall¹³ that we should be even more radical in advising this course than we have been in the past.

CONCLUSIONS

1. Proper uterine contraction is essential to the control of uterine bleeding.
2. There is no definite pathologic condition present in these cases that is not found in others not giving any

history of hemorrhage, with the probable exception of the increase in number and size of vessels.

3. Some loss of functional power of the uterine muscle is the predisposing cause of bleeding in cases of arteriosclerosis.

4. This loss of functional power is due either to the development of fibrous and elastic tissue from subinvolution, or to the condition which caused this subinvolution.

5. The exciting causes are probably many. I would suggest the increase in size and number of vessels, general increase in blood-pressure from kidney disease or general arteriosclerosis, passive congestion from heart disease, local congestions, or general muscular weakness.

I want to take this opportunity to express my indebtedness to Dr. Simpson for the privilege of studying these cases from his clinic, and to Dr. Proescher for his help with the pathologic work.

REPORT OF CASES

CASE 1.—Mrs. B., aged 29, admitted June 3, 1907; married, two children, two abortions; last seven weeks ago; recent menstrual history, profuse and irregular; almost constant and profuse bleeding since last abortion; dilatation and curettage on admission; bleeding not controlled; very severe hemorrhage two weeks later.

Operation.—June 21, 1907, a supravaginal hysterectomy and bilateral salpingo-oöphorectomy were performed.

Gross Pathology.—Uterus about three times normal size, very soft and flabby; palpable arteriosclerosis of uterine arteries; endometrium not thickened; tubes closed, ovaries slightly cystic.

Microscopic Examination.—Endometrium normal; moderate, diffuse increase of fibrous tissue throughout the muscle; mod-

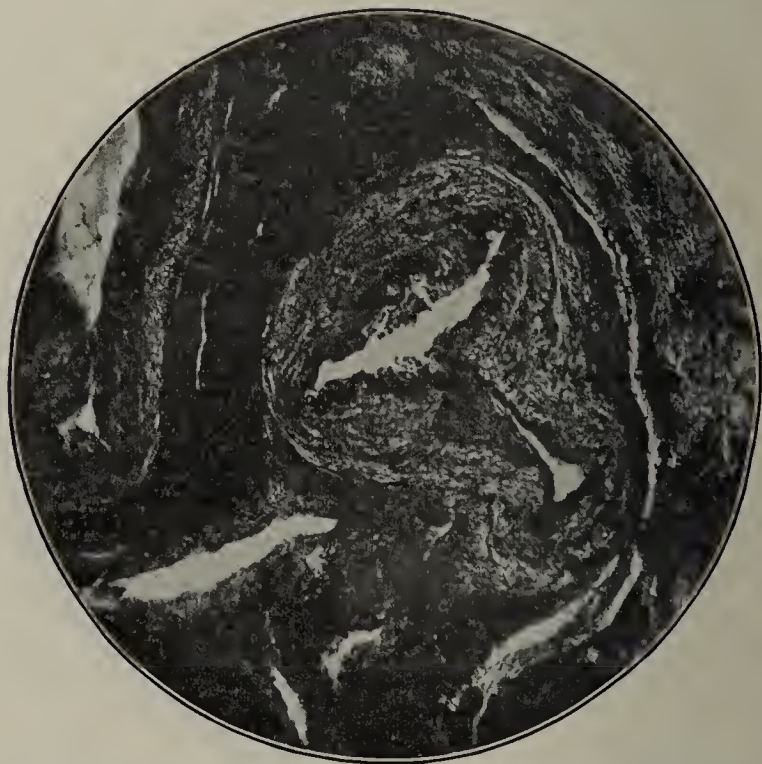


Fig. 6.—No hemorrhage. Very marked arteriosclerosis about vessels. Patient aged 50; 6 children. Uterus removed on account of chronic metritis and cervicitis. Menopause 1 year before.

erate increase of elastic tissue around vessels and in the subperitoneal layer.

CASE 2.—Mrs. F., aged 40, was admitted Sept. 7, 1907. Puberty occurred at 15; menstruation was regular, lasting from three to six days; married at 19; seven children, youngest 5 years old; no abortions. For the last two years patient had been menstruating irregularly at eleven to twenty-four-day intervals, period lasting from three to six days and being very profuse, leaving her weak after each period; no interval bleeding.

Operation.—Sept. 9, 1907, dilatation and curettage perineorrhaphy, supravaginal hysterectomy and left salpingo-oöphorectomy were done.

¹³ Gardner and Goodall: Brit. Med. Jour., 1906, ii, 1176

Gross Pathology.—Endometrium appeared normal, and reported not malignant from frozen section; uterus size of five weeks' gestation; palpable arteriosclerosis of uterine arteries; in fundus and particularly in both cornua are large veins 2 to 4 mm. in diameter; tubes normal; both ovaries slightly cystic.

Microscopic Examination.—Marked increase of fibrous tissue and of elastic tissue about vessels, most pronounced in vascular layer.

CASE 3.—Mrs. O., aged 42; puberty at 15; menstruation was regular each twenty-eight days, lasting from four to five days; amount moderate. Married at 24; three children; last twelve years ago; no abortions; repair of laceration one year ago; moderate menorrhagia the past year.

Operation.—May 4, 1908, combined vaginal and abdominal hysterectomy, bilateral, salpingo-oöphorectomy and appendectomy.

Gross Pathology.—Uterus slightly enlarged; palpable arteriosclerosis; tubes normal; ovaries cystic.

Microscopic Examination.—Very marked, diffuse increase of fibrous tissue; marked increase in elastic tissue about the vessels.

CASE 4.—Mrs. W., aged 48, admitted May 11, 1908; puberty at 12; menstruation regular each twenty-eight to thirty days, lasting from three to seven days; irregular past two years; moderate menorrhagia. Married at 29; one child 16 years old; no abortions.

Operation.—May 13, 1908, combined vaginal and abdominal hysterectomy and right salpingo-oöphorectomy.

Gross Pathology.—Uterus enlarged, twice normal size; palpable arteriosclerosis; right tube normal; right ovary cystic.

Microscopic Examination.—Diffuse increase of fibrous tissue through all layers, more marked in vascular and submucous layers; marked increase of elastic tissue about the vessels and vascular layers.

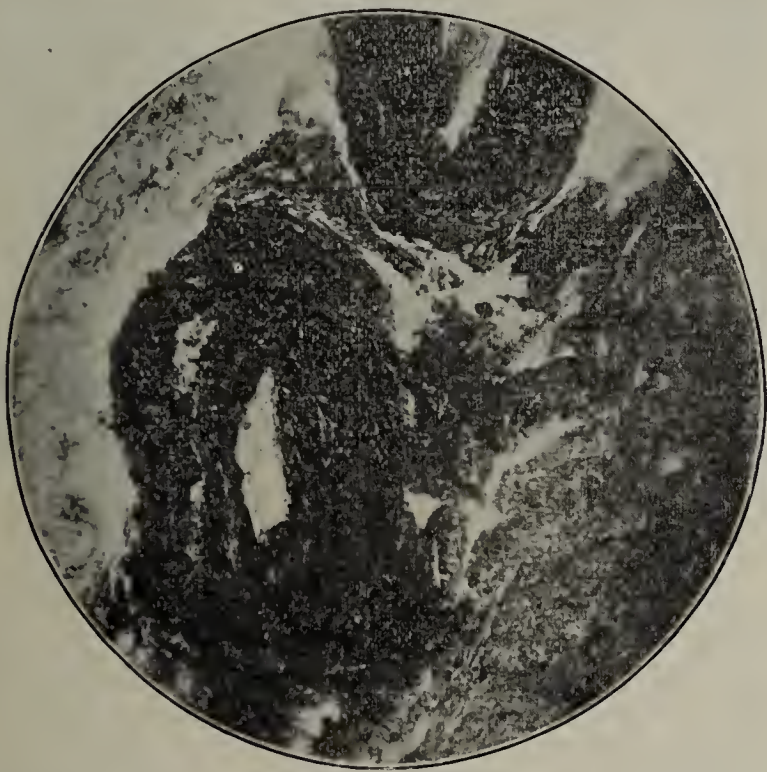


Fig. 7.—No hemorrhage. Quite marked arteriosclerosis. Excess of elastic tissue in vessel walls. Patient aged 41. Menstruation normal. Prolapse of uterus.

CASE 5.—Mrs. E., aged 47, admitted Jan. 11, 1909; puberty at 14; menstruation irregular. Married at 26; four children, youngest 14; no abortions; menstruation irregular for eleven years; for past two years menorrhagia and metrorrhagia quite severe.

Operation.—Jan. 15, 1909, supravaginal hysterectomy.

Gross Pathology.—Uterus normal size; palpable arteriosclerosis; tubes normal; left ovary slightly cystic (not removed).

Microscopic Examination.—Endometrium not thickened; chronic interstitial endometritis; marked increase of fibrous tissue through all layers; marked increase of elastic tissue around vessels and submucous and vascular layers.

CASE 6.—Mrs. T., aged 42, admitted Jan. 24, 1909; puberty at 12; menstruation irregular; each four to seven weeks; lasting from seven to ten days; one child; menorrhagia past six years. Two years ago dilatation and curettement for cervical polyp and perineorrhaphy were done. Menorrhagia has continued.

Operation.—Jan. 27, 1909, combined vaginal and abdominal hysterectomy, bilateral salpingo-oöphorectomy and appendectomy were performed.

Gross Pathology.—Polypoid endometritis; varicose veins of both cornua of uterus, diameter 2 to 4 mm.; tubes adherent, closed; ovaries cystic.

Microscopic Examination.—Marked increase of fibrous tissue and vascular layer, chronic interstitial endometritis; not glandular, but hypertrophic. Slight increase in submucous layer; slight increase of elastic tissue about the submucous layer, no increase in vascular layer; slight diffuse increase in subserous layer.

CASE 7.—Mrs. W., aged 43, admitted Feb. 4, 1909; puberty at 18; menstruation regular every twenty-eight days, of five-days' duration; moderately profuse. Married at 21; seven children; last, eight years ago; one abortion ten years ago. First noticed prolapse of uterus seventeen years ago; for past two and one-half years menstruation irregular; every two to five weeks, lasting five days; profuse menorrhagia.

Operation.—Feb. 6, 1909, vaginal hysterectomy and perineorrhaphy.

Gross Pathology.—Hypertrophy of the cervix; uterus normal size; palpable arteriosclerosis.

Microscopic Examination.—Endometrium thickened; interstitial endometritis; no increase of glandular tissue; marked increase of fibrous tissue throughout, and of elastic tissue about all vessels.

CASE 8.—Mrs. A., aged 44; puberty at 12; menstruation regular every twenty-eight days, three to four days' duration. Married at 22; four children last nine years; all died in infancy; four miscarriages; last five years ago; for past six months moderate menorrhagia and metrorrhagia.

Operation.—Sept. 14, 1906, perineorrhaphy, supravaginal hysterectomy and appendectomy.

Gross Pathology.—Endometrium about normal; uterus two and one-half times normal size; palpable arteriosclerosis; varicose veins in both cornua; tubes and ovaries normal.

Microscopic Examination.—Marked diffuse increase in fibrous tissue in submucous and vascular layers; slight increase in elastic tissue in vascular layer.

CASE 9.—Mrs. P., aged 31; puberty at 17; menstruation regular, lasting from six to seven days. Married at 20; three children; last, two years old; one miscarriage, four weeks ago; for past year patient has had a profuse menorrhagia, lasting two or three weeks; very severe bleeding for nine weeks, about six months ago; stopped for a short time, but has bled almost constantly and in variable quantity since.

Operation.—Feb. 1, 1910, supravaginal hysterectomy and appendectomy.

Gross Pathology.—Endometrium normal; uterus normal size; palpable arteriosclerosis; varicose veins of both cornua, 3 to 6 mm. diameter; tubes and ovaries normal.

Microscopic Examination.—Endometrium normal; marked increase of fibrous tissue in all layers; moderate increase of elastic tissue about the vessels and vascular layer.

CASE 10.—Mrs. G., aged 50, admitted Jan. 26, 1910; puberty at 15-16; menstruation regular, of from three to four days' duration. Married at 18; eleven children, youngest 12; one miscarriage, fourteen years ago; four years ago patient noticed menstruation became more profuse and irregular, at two or three weeks' intervals; duration, one week; fifteen months ago she noticed slight metrorrhagia; severe hemorrhage, Nov., 1908, lasting ten days; almost constant bleeding since.

Operation.—Jan. 27, 1910, combined abdominal and vaginal hysterectomy and bilateral salpingo-oöphorectomy.

Gross Pathology.—Carcinoma of cervix with involvement of the right broad ligament; uterus enlarged twice normal size; palpable arteriosclerosis; tubes normal; ovaries slightly cystic.

Microscopic Examination.—Squamous carcinoma of the cervix; endometrium normal; marked diffuse increase of fibrous

tissue; marked increase of elastic tissue, particularly about the vessels.

This illustrates the necessity of investigating these cases carefully, as undoubtedly the bleeding of the arteriosclerosis had antedated for some time the development of the carcinoma.

CASE 11.—Mrs. E., admitted March 3, 1910; puberty at 12; menstruation regular, lasting from three to five days. Married at 23; seven children, youngest three years old; two miscarriages, last eight months ago; menorrhagia began two years ago; dilatation and curettement eleven months ago; bleeding controlled for three months; since last abortion there has been profuse menorrhagia and metrorrhagia, almost constantly.

Operation.—March 6, 1910, supravaginal hysterectomy and perineorrhaphy.

Gross Pathology.—Uterus slightly enlarged; endometrium normal; palpable arteriosclerosis; large vein, 5 mm. diameter, in left cornu; tubes normal; ovaries normal.

Microscopic Examination.—Mucosa thickened; slight increase in glandular tissue; marked diffuse increase of fibrous tissue; marked increase of elastic tissue around the vessels.

ABSTRACT OF DISCUSSION

DR. EMIL NOVAK, Baltimore: It seems to me that the special importance of the study of arteriosclerosis of the blood-vessels of the uterus lies in the possible relation which it bears to uterine bleeding. That, I think, has been well emphasized by Dr. Chalfant. I agree that in certain cases uterine bleeding may be due to such conditions. Furthermore, we also recognize the fact that uterine bleeding is influenced to a considerable degree by the condition of the muscular tissue of the uterus. This seems to be pretty well demonstrated by the manner in which post-partum hemorrhage may be controlled by producing strong uterine contractions. It is not difficult to believe that the fibrous tissue of the uterus may also have some influence on uterine bleeding, as urged by Theilhaber. The point to be emphasized is that in a considerable number of cases—how large no one knows—uterine bleeding is present in the absence of any demonstrable pathologic lesion. It is unjustifiable to strain the imagination into believing that a slight increase in fibrous tissue, or perhaps a slight thickening of the arteries, is the cause of the bleeding, when these conditions, as a matter of fact, may represent normal variations. It seems to me that in a considerable number of cases of uterine bleeding we must invoke, not alone anatomic explanations, but also physiologic causes. Morris has referred to the present as the physiologic era in surgery. We may say also that this is the physiologic era in gynecology. In the explanation of uterine bleeding, we must bear in mind the normal physiology of menstruation. This concerns not only the myometrium, the endometrium and blood vessels, but also some underlying cause which most of us believe to be an internal secretion of the ovary. The importance of the internal secretions of the body has been greatly emphasized within recent years, but not sufficient stress has been laid on their relation to the physiology of the female genital organs. That there is such a relation permits of no doubt. I would like, if time permitted, to speak of the influence in this connection of the pituitary bodies, as has been shown experimentally by Dr. Cushing and others, and also to emphasize the importance of the thyroid hormone or hormones in connection with menstrual physiology and pathology.

In many cases of arteriosclerosis there is no uterine bleeding, and in many cases of uterine bleeding in which arteriosclerosis is given as a cause, such a condition does not exist. In many cases the so-called arteriosclerosis is really a normal process. This has been very well shown by Dr. Goodall and others, in the fact that we find thickening of the arteries in the uteri of women who have borne children. I would like, in short, to re-emphasize the point that in many of these cases of uterine bleeding there is no local anatomic cause whatsoever to which we can assign this symptom.

DR. COLLIN FOULKROD, Philadelphia: The discussion of arteriosclerosis, coming after the discussion of endometritis,

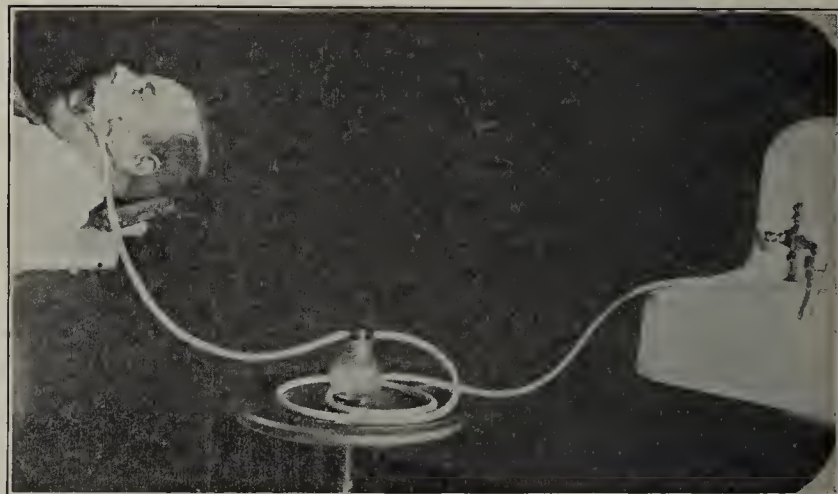
makes a very pertinent point come up: Is not the bleeding coming from the same cause coming from two different points in the uterus? In the first place the arteriosclerotic bleeding is due, no doubt, to some cause within the patient's body. Contrary to Dr. Novak, if it is not due to the intima, there must be some cause which acts on the intima of the vessels and causes a condition, which is either anemia of the structures, which will not permit strong contraction of the blood vessels, or some other condition which precludes the possibility of contraction of the blood vessels. The result is the same. The few cases that have been classified have been those which we have not attributed to the arteriosclerosis or the general condition. There are few cases in which you do not find some demonstrable lesion either in the system or in the uterus itself.

AN ASPIRATING DEVICE

J. H. WILLIAMS, M.D.

CINCINNATI

The idea here illustrated is an addition to the siphon used by dentists; the water, passing rapidly down the specially constructed metal tube attached to the faucet, produces suction in the rubber tubes and glass container. The blood, mucus, and some air in the patient's throat, pass into and through the hard rubber mouth attachment and are continued along the rubber tube to the glass container, where the blood and mucus are deposited, the



Hydraulic aspirator, for keeping the mouth and throat clear of blood and secretions in operations about those parts.

air going on through the second tube from the container to the faucet, and out with the passing water.

In all operations within the mouth or throat under general anesthesia, especially the removal of adenoids and tonsils, this apparatus is designed to keep the field of operation clear; to obviate the necessity of sponging, thereby reducing the number of assistants, and also to preclude the possibility of the patient aspirating or swallowing the exuded blood, etc.

25 Groton Building.

Infant-Feeding.—T. N. Gray, in *Archives of Pediatrics*, states that no amount of study and observation will equip a physician to treat any baby but the one which he can see, handle and examine. He believes that the artificially fed child has as much to fear from falling into the hands of a physician who has never thought of his individuality, or from a mother who is willing to feed it a modification advised by one who has never seen it, as it has from bacterial contamination of milk.

COUGH DURING AUSCULTATION IN THE DIAGNOSIS OF PULMONARY TUBER- CULOSIS

A PLEA FOR ITS ROUTINE EMPLOYMENT TO ELICIT FINE
RÂLES:—TECHNIC AND CONVENIENT SIGNAL

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The diagnosis of active pulmonary tuberculosis by the average clinician depends quite frequently on the finding of fine râles. There are earlier physical signs, but in the absence of bacilli none is of so much significance.

The râles most important in diagnosing pulmonary tuberculosis are not heard during ordinary respiration. A light cough at the end of expiration may reveal, during the inspiration following, fine adventitious sounds, indicating a lesion, before the Röntgen rays will cast a shadow of it, long before the percussion note is impaired, and frequently before the normal respiratory murmur is modified. This simple expedient is described in most text-books on physical diagnosis and is resorted to by all expert clinicians. Its omission is even noticed at once by an experienced patient. But it is believed that the average busy doctor sometimes neglects it. The following description of the technic employed for several years by officers of the Public Health and Marine-Hospital Service at the Fort Stanton Sanatorium, is given, therefore, not with the idea that it is new, but rather to emphasize the importance of a well-established diagnostic procedure:

The usual inspection of the chest is first made, measurements taken, palpation and percussion completed and the gross pathology ausculted during quiet breathing and with spoken and whispered voice.

Breathing.—It is best in beginning auscultation to give no instructions as to breathing, because some will need no correction and are rendered so self-conscious by it that their normal rhythm is disturbed. In a large number of cases it will transpire that instruction must be given and it can be adapted to the individual case. Instances in which deep breathing is required are very exceptional, and, since it produces confusing muscular crackles, it is rarely useful in eliciting fine adventitious sounds.

Cough.—Just at the end of a normal expiration, at the signal, the patient gives a short and easy but audible cough. This expels part of the residual air and will be followed instantly by an inspiration, the first part of which will naturally be involuntarily accentuated. With stethoscope on the subject's chest the examiner disregards the muscular noises produced by cough and concentrates his attention on adventitious sounds during the inspiration immediately following. In some cases the first part of this inspiration is most fruitful in fine râles; sometimes they appear only near the close of the act.

Signal.—A signal system is necessary in directing the patient, because the examiner's voice will cause vibrations in his stethoscope. As the physician stands or sits opposite the erect form of his patient one hand naturally rests on the subject's shoulder or arm to afford the steadiness necessary in delicate use of the stethoscope. One finger of this hand can be used to give the signal to cough, with no more preliminary instruction than, "Cough once when I tap you." This may have to be supplemented a little later by, "Do not take a breath before you cough," or "Cough just as soon as you get the signal," and occasionally by the admonition, "Do not swallow after you cough," this act producing peculiar gurgles

and coarse sounds. In exceptional cases a proper amount of residual air is not expelled in this way; in that case the instructions may be modified to, "When I tap you blow out your breath and cough." Advice is not usually required concerning the inspiration following. If part of the residual air has been expelled it will be right if naturally taken. But occasionally in a thick-walled, or poorly expanding chest, or in one in which a thickened pleura masks the situation, it may be desirable to accentuate the inspiratory sounds, and one may direct the subject to take a quick breath after the cough, or when signaled by two taps of the finger or by pinching the skin of the shoulder with the free hand. It may be repeated that a deep, muscle-stretching, rib-cracking inspiration is not desired to elicit râles.

Nothing is more painful to witness than a subject who has been directed to "cough" or to "take deep breaths." A very few minutes of such gymnastics are sufficient to exhaust even the most robust. But if such movements are under easy control the examiner can order them at appropriate times and judicious intervals without tiring his patient.

The physician who looks only for those gross lesions which manifest themselves by dullness, cavernous breathing, whispered pectoriloquy, coarse râles, etc., may err both in diagnosis, when these are absent, and in prognosis when the advent of new areas of involvement are



Technic by which to have patient cough at the desired time, during auscultation. A tap of the finger is signal for a short cough, at the end of expiration; a pinch, or two taps, for a quick inspiration.

overlooked while the older lesions are under observation. Those who give too much significance to some of the ultrarefined and doubtful physical signs, frequently make the opposite mistake. The amateur may be confused by a dry or hairy skin if he neglect to oil or shave the part, but the same man will elicit dullness over a healthy chest if he percuss it close to a wall, or miss an area of consolidation because he allows his pleximeter finger to bridge two ribs. In fact, if he allows no garment between his stethoscope and the skin and no folds of clothing near enough to move on the chest with squeak and rustle at every respiration, there is less chance of error in a properly elicited fine râle than in anything else the examiner sees or hears.

Burns and Acidosis in Children.—In children, burns and scalds are frequently followed by acidosis and acid intoxication, particularly if the burn be superficial and extensive.—E. R. White, in *Australian Medical Journal*.

PELLAGRA, WITH THE ANALYTICAL STUDY OF FIFTY-FIVE NON-INSTITUTIONAL OR SPORADIC CASES

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Pellagra is a disease which has been known in Italy and other European southern countries for nearly three hundred years. It has since been reported from most semitropical countries from Asia Minor to Texas. In the United States isolated cases were several times reported, but the disease was not known to occur in quantity until 1907, when it was recognized independently by Merrill, Searcy and Babcock. Up to the present time probably five thousand cases have been recognized in the United States, chiefly confined to the south Atlantic states and one or two states in the middle west. The disease is unquestionably rapidly increasing in the United States and although it might have existed in this country unrecognized for many years, still it must have been extremely rare until 1907. It now bids fair to become a national problem.

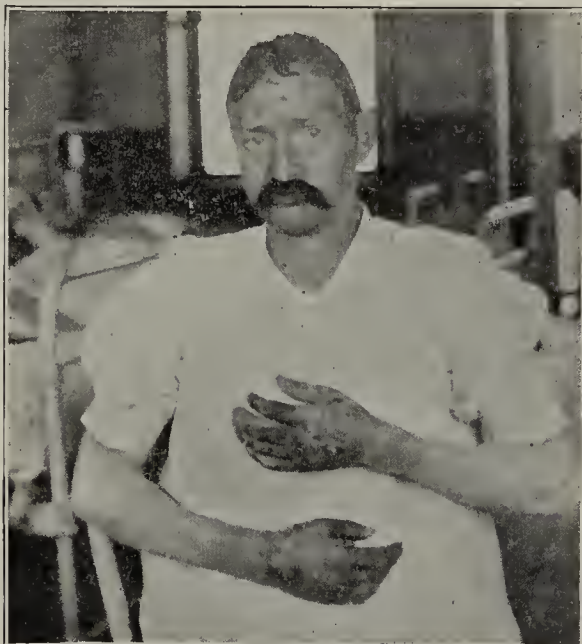


Fig. 1.—Author's case of pellagra, with lesions of the hands, forehead and alae of the nose.

As pellagra is so frequently reported in numbers from the institutions for the insane, a fact to be positively ascertained is whether in these institutions the pellagrins were not admitted with the disease, either in the stage of remission or with its lesions unrecognized. The fact that pellagra has been considered a disease beginning in rural districts makes this question of great practical importance. Assuming that the disease does originate in rural districts, the cause must be looked for in these localities. On the other hand, if we can prove that the disease frequently originates in institutions, then there must be local, demonstrable and correctable causes to be found in these institutions.

The maize theory of causation has certainly not been proved. Taylor¹ quotes Palidino's observation that the use of good maize did not decrease pellagra in Mantua. Sambon and others state that pellagra is found where corn is neither grown nor eaten. Thorington² says that if spoiled maize was the cause of pellagra there would not have been enough southern soldiers left after the

Civil War to rehabilitate the South. He believes it parasitic in origin. Among the theories of cause advanced Reed³ gives the fungus *Diplodia zeæ* as a possible factor; Sambon believes the sand-fly to be the carrier of the infective agent; Rohrer⁴ thinks it due to the fungus *Aspergillus fumigatus*; Auld⁵ attributes the disease to a magnesium infiltration from the ingestion of maize; Tizzoni and Wood⁶ have isolated a bacillus which they believe is the cause; Long⁷ believes that amebas in the stools have a definite relation to pellagra, while Raubitschek⁸ thinks the cutaneous lesions due to an alimentary poison, probably a lipid constituent from corn, plus the chemical rays of sunlight.

Hyde, Lavinder and Griffin do not believe that pellagra is communicable and this view is generally accepted. As far as I have been able to learn no physicians, nurses or attendants have ever contracted the disease outside or inside of an institution from having attended patients with pellagra.

Pellagra occurs in two forms, one an acute fulminating form, and the other a chronic form with seasonal recurrences. The fulminating form runs a course of from a few weeks to a few months and is frequently fatal. If apparent recovery takes place the disease returns again the following year and may then be classed as chronic. The fulminating form has been called "typhoid pellagra," but for obvious reasons it is best not to use the word "typhoid." The chronic form occurs in two types. In one the disease appears in the spring, runs a course more or less severe during the summer, has almost a complete remission in the winter and recurs the following spring. In the other, a rare type, exacerbations occur both in the spring and in the fall with summer and winter remissions. In the chronic form the spring recurrences usually become more and more severe and the disease is usually fatal in from two to seven years. As the seasonal recurrences take place regardless of the ingestion of maize, this seems to be an argument against the zeist theory. It would seem only reasonable, if the disease was caused by maize toxemia, that when this toxin became so eliminated that a complete arrest of symptoms occurred there could be no recurrence.

SYMPTOMS

The symptoms of pellagra are numerous and will be taken up in detail in the analysis of the cases to follow. In general it may be said that they consist of three sets, the exact relation of which to each other has never been satisfactorily explained. The symptom-groups are gastro-intestinal, cutaneous, and nervous and mental. Most writers do not put them in this sequence but mention the cutaneous manifestations first. I feel confident, however, that this is erroneous, and the reason for it is that the majority of reported cases have been from institutions of the insane where diarrhea and gastritis are so common that the date of their onset in pellagra cases has not been noted.

Special examinations of the blood, urine, feces, eyes and temperature have thrown but little light on pel-

3. Reed, Howard S.: The Fungus *Diplodia* as a Possible Factor in the Etiology of Pellagra, New York Med. Jour., Jan. 22, 1910, p. 164.

4. Rohrer, C. W. G.: Tr. Nat. Conference on Pellagra, Columbia, S. C., Nov. 3-4, 1909, p. 94.

5. Auld, John: New York Med. Jour., Dec. 4, 1909, p. 1142.

6. Wood, E. J.: The Appearance of Pellagra in the United States, THE JOURNAL A. M. A., July 24, 1909, p. 281.

7. Long, J. D.: Pellagra, THE JOURNAL A. M. A., Aug. 27, 1910, p. 734.

8. Raubitschek, Hugo: Pathogenese der Pellagra, Wien. klin. Wchnschr., June 30, 1910, p. 963.

1. Taylor, J. H.: New York Med. Jour., Dec. 18, 1909, Vol. xc, No. 25, p. 1208.

2. Thorington, Chilton: Pellagra—Not Established that It Comes from Bad Meal, Gulf States Med. and Surg., January, 1910, p. 48.

lagra. A moderate degree of secondary anemia is almost a constant finding in the blood of pellagrins, and leukocytosis is not found unless there is secondary infection, as shown by the reports of Lavinder⁹ and others. Fox¹⁰ has found that the Wassermann reaction is not of value in the diagnosis of pellagra. Cole and Winthrop¹¹ have reported cases of transfusion of blood of supposedly cured pellagrins into patients with active manifestations with apparently good results.

Nothing typical has been found in the examination of the urine of pellagrins. In regard to fecal examination, Nichols¹² in the examination of the stools of eighty-eight patients found amebas in 37.5 per cent., while in 101 control cases they were present in only 11.8 per cent. There were 85.3 per cent. of cases with protozoa, while in the control cases there were 48.6 per cent. None of the fecal findings have been of positive value either as to the diagnosis or etiology. Hookworm disease, although having in the United States very much the same geographic distribution as pellagra, is in no way associated with pellagra. Pellagra patients may also have hookworm, but this is simply a coincidence.

The eye symptoms of pellagra have not been at all constant. Welton¹³ examined the eyes of fifty-five patients and reached the following conclusion: "In none of the cases presenting eye symptoms could the character of the eye changes be regarded as pathognomonic of pellagra." Other observations are in accordance with this statement.

There is no variation in the temperature of uncomplicated cases of pellagra except during the late stages, when there may be an elevation. It is at least probable that this elevation may be accounted for by mental excitement or secondary infection in many cases.

PATHOLOGY AND DIAGNOSIS

The pathology of pellagra has not been put on a very definite basis and those interested are referred to the very interesting review of the subject by Harris of Georgia.¹⁴ In reference to the pathology of the nervous system, he states that there may be noted degenerative changes in the chromophilic cells of the cortex of the cerebrum. In the cerebellum the cells of Purkinje undergo degeneration, which may account for the ataxia observed in some cases. In the cord cell-degeneration is noted and at times this goes on to cell-destruction. We have no positive evidence of alterations in the peripheral nerves.

The diagnosis of pellagra is easy in most cases if this disease is borne in mind. A positive diagnosis should not be made unless gastro-intestinal and typical cutaneous symptoms are present. *Pellagra sine pellagra* is an impossible diagnosis because in many cases of mental disorders there are gastro-intestinal disturbances. Noticeable nervous and mental symptoms may not appear until late and the disease may occasionally be diagnosed before their appearance. Conditions which may really be confused with pellagra are syphilis, in certain of its forms,

and insanity with gastro-intestinal disturbances in which true sun-burn has occurred. I saw a patient with syphilis at the City Hospital, Richmond, presenting the symptoms of stomatitis, diarrhea, erythema, and nervous and mental disturbances, and diagnosed the case as syphilis because the eruption occurred on the palms as well as the extensor surface of the hands. On investigation the history of syphilis was elicited and the lesions and other symptoms disappeared in a short time under the mixed treatment.

There are some conditions which more or less resemble pellagra, the most prominent of which are leprosy, alcoholic polyneuritis and beriberi. In leprosy the skin lesions of certain forms constitute the most marked resemblance to pellagra. In alcoholic polyneuritis there may be gastro-intestinal, nervous and mental and cutaneous disturbances, but there is no seasonal remission and the skin lesions are those of neuritis and are not similar to pellagra.



Fig. 2.—Lesions of the hands in a case of pellagra. (Courtesy of Dr. Paul N. Anderson, Morganton, N. C.)

ANALYSIS OF CASES

Having thus discussed the disease in general I shall now proceed with the analysis of fifty-five non-institutional or sporadic cases. A form containing over one hundred questions was used by me in obtaining these histories and this form was sent to physicians who were known to have patients with pellagra under their charge. Many of these patients were also seen by me. Thanks are due to Dr. Ennion G. Williams, chief health officer of Virginia, for the distribution of many of these forms, and I am especially grateful to the physicians who so cheerfully and carefully answered these questions. In this report all doubtful cases have been excluded and many control questions asked in order to take every possible precaution against error. It is to be regretted that complete laboratory studies were not made of more cases, but these cases occurred, for the most part, in rural districts where facilities were lacking and the cases often infrequently visited. This study was undertaken with the idea in mind that the analysis of cases occurring outside of institutions might be of especial value because the earlier symptoms, and at times, the onset of the disease, could be noted, and because light might be thrown

9. Lavinder, C. H.: Tr. Nat. Conference on Pellagra, Columbia, S. C., Nov. 3-4, 1909, p. 33.

10. Fox, Howard: Tr. Nat. Conference on Pellagra, Columbia, S. C., Nov. 3-4, 1909, p. 33.

11. Cole, H. P., and Winthrop, G. J.: Pellagra: Transfusion in Eleven Cases, THE JOURNAL A. M. A., April 22, 1910, p. 1354.

12. Nichols, Henry J.: Tr. Nat. Conference on Pellagra, Columbia, S. C., Nov. 3-4, 1909, p. 60.

13. Welton, C. B.: Eye Symptoms of Pellagra: Preliminary Report of Examination of Eyes of Fifty-Five Patients, THE JOURNAL A. M. A., Nov. 13, 1909, p. 1636.

14. Harris, H. F.: Tr. Nat. Conference on Pellagra, Columbia, S. C., Nov. 3-4, 1909, p. 86.

on the epidemiology, the priority of certain sets of symptoms and because of the probability of a more intelligent history from patients who were not inmates of an institution for the insane.

GENERAL HISTORY

Age.—In fifty-four of the fifty-five cases the age of the patient was given, the oldest being 76 and the youngest 6. The average age was nearly 37. The most frequent decade for the occurrence of the disease was between thirty and forty years, sixteen out of the fifty-four cases occurring in this decade.

Sex.—Thirty-nine patients were female and sixteen male.

Nationality.—Forty-two patients were stated to be white American, three others white, American or foreign birth not stated, and one white born in Ireland. Only nine of the patients were negroes.

Married or Single.—Thirty-seven of the patients were married, four widowed and fourteen single.

Epidemicity.—In ten instances there were other cases in the immediate neighborhood, in one instance the second patient was a sister of the first. The cases as a rule were widely separated geographically. In the state of Virginia, in forty-five



Fig. 3.—Lesions on the back of the hands and neck in a case of pellagra in a negro. (Courtesy of Dr. William F. Drewry, Petersburg, Va.)

consecutive cases, pellagra occurred in one county only in nineteen cases, two cases in a county in eight instances, three in two instances and four in one instance.

Month of Onset.—Forty of the fifty-five patients stated the month of the onset of symptoms, four simply stated that the disease began in the summer, four others that it began in the spring and in two cases no date was given. In the forty-five cases in which the month was given two began in January, two in February, ten in March, nine in April, seven in May, nine in June, four in August, one in October, one in November, and none in July, September and December.

Priority of Symptoms.—Diarrhea was the first symptom in thirty-five cases, stomatitis in one and diarrhea and vomiting in one, making thirty-seven cases in which gastro-intestinal symptoms occurred first. Gastro-intestinal and skin lesions are stated to have begun simultaneously in seven cases. Cutaneous symptoms began first in ten cases, and in two cases it was unknown which was the first set of symptoms. In three cases the nervous and mental symptoms were stated to have been the first to appear, but on investigation these people were found to have been neurotic for many years. Where exact dates could be ascertained it was found in thirty-five cases that the gastro-intestinal symptoms preceded the cutaneous from one day to seven years; in twenty-seven of these cases three months or less, and in eight one month or less. In seven cases the cutaneous preceded the gastro-intestinal symptoms

from two weeks to twenty-eight months; in six of the seven cases one month or less.

Hygienic Condition.—The hygienic condition was said to be poor in fifteen, fair in sixteen, good in twenty-one and excellent in three.

Ingestion of Maize.—Maize products were eaten regularly and formed the chief article of diet in twenty-nine cases, were eaten moderately in thirteen, very rarely in nine and in four cases it was stated that the patients never ate corn products in any form. It might be said that in one form or another maize is the staple article of food throughout this section. Eight of the patients drank corn whisky and four of these to excess. Of the thirteen patients who very rarely or never ate corn products only one drank corn whisky at all. Bread, batter bread, cakes and hominy were the most frequent forms in which corn was eaten. Forty-five answered the question as to whether corn syrup was used and if so whether it was fermented. It was used in eighteen of the cases and was said to be fermented in three. Of the eighteen patients who used corn syrup two of them rarely ate maize products in the other forms and one did not take corn in any other form. In the three cases in which the corn syrup was known to be fermented the patients ate maize products in other forms to excess.

Condition of Corn-Meal.—In twenty-two cases the meal was said to be good, in twenty-two it was unknown whether it was good or not, and in six it was known to be bad or spoiled. Some of the patients used store or shipped meal exclusively and others home meal exclusively.

Pernicious Habits.—One patient was addicted to opium, one to opium and tobacco, five used tobacco alone to excess, three used tobacco and whisky to excess, and five whisky alone to excess. This gives a total of fifteen patients whose constitutions may have been affected by these habits.

Constitutional Diseases.—Twenty patients had constitutional diseases in the past, nine had rheumatism, five malaria, two had syphilis alone, one syphilis and malaria, one malaria and rheumatism, one was paralyzed and one had tuberculosis. None of the patients had hookworm disease.

CUTANEOUS SYMPTOMS

All the patients had cutaneous symptoms.

Distribution of Skin Lesions at the Beginning.—In forty-four of the fifty-five patients the skin lesions began on the back of the hands and forearms alone, in forty-three of these cases simultaneously on both hands or forearms, and in one it began first on the right hand followed in a few days by involvement of the left hand. In seven patients the lesion began on the back of the hands, forehead and alæ of the nose and in three on the back of the hands and dorsum of the feet and in one on the back of the hands and neck. In all of the cases, or 100 per cent., the back of the hands and forearms were affected at the beginning.

Extent of the Cutaneous Lesions.—In twenty-eight of fifty patients who answered, the cutaneous lesions remained confined to the hands and forearms; in four cases the hands and feet were involved; in four hands, face and neck and in twelve hands, face, feet and neck. Two patients stated that the eruption was "all over the body," but in one of these the case was complicated with impetigo which seemed to be responsible for this involvement.

Character of Skin Lesions.—The epidermis was red and more or less rough in the beginning in practically all of the cases but turned dark in twenty-seven cases. In a few cases there was swelling and thickening of the skin and fissuring. Desquamation took place in fifty-one cases out of the fifty-five. The time of the appearance of desquamation varied from two weeks to six months after the appearance of the skin lesions, the average time being one month. Sloughing occurred in fifteen of the cases in from one to six months. In eighteen cases there was bullous formation. The lesions were stated to resemble eczema at the beginning in twenty-one cases, sunburn in twelve, erythema in three, dermatitis in two and syphilis, ring-worm, impetigo and poison-ivy in one case each.

After the lesions healed the appearance of the surface was noted in nine cases. It was glistening and usually reddish, in one case pale and in two dark or brownish in color.

Secondary infection occurred in seven of the fifty-five cases, furuncles in three instances, impetigo in one and ulceration in two; in one the character was not stated.

Remission in the skin lesions occurred in twenty-nine cases.

Exposure to the Sun.—The patients were exposed to the sun in thirty instances and in twenty-one cases this exposure was known to make the skin lesions worse.

MUCOUS MEMBRANE INVOLVEMENT

Stomatitis was present in forty-seven of the fifty-five cases. In seven cases other mucous membranes were involved, usually the anus or vagina.

GASTRO-INTESTINAL SYMPTOMS

These symptoms occurred in every case but one; vomiting in thirty-four cases, diarrhea in fifty-four cases, obstinate constipation in one case and diarrhea alternated with constipation in thirty of the cases.

Remissions occurred in the diarrhea in thirty-six cases. In some cases the remissions were very short.

Forty-three patients mentioned the macroscopic appearance of the stools, which varied from light gray to dark brown or green in color. In most instances they were watery. Mucus was noted in five and blood in one. (For examination of the stools see laboratory findings further on.)

NERVOUS AND MENTAL SYMPTOMS

Fifty-four of the fifty-five patients had nervous and mental symptoms. The onset of these was from a few days to a year and a half after the first appearance of the disease, the average time being six to eight weeks. In several patients who had been nervous for years it was noticed that the nervousness was made worse by pellagra.

Emotional Manifestations.—The temper was stated to be bad in twenty-eight cases, the patients were depressed in forty-four, and cried to excess in thirty-three. In twenty-one cases the patients were stated to have ceased laughing since the onset of the disease.

Memory was affected in forty-two cases.

Hallucinations and Delusions.—These were noted in seventeen cases, in five cases delusions alone, in four cases hallucinations alone and eight cases both. In the delusion cases all were of persecutory character but one. This patient had pleasant delusions. The hallucinations were the usual ones of sight and sound.

Homicide and Suicide.—None of the patients committed homicide or suicide; one patient attempted both, and five threatened suicide.

Nervous Symptoms.—Forty-nine patients were said to be nervous, forty-three restless and forty-six had insomnia.

Paralysis.—Four patients were paralyzed. One of these had hemiplegia, one paralysis of the sphincter ani and two partial paralysis of the lower extremities.

Tremor.—In twenty-eight cases tremor was noted, tremor of the hands in eight cases, of the tongue in two, of the hands and tongue in five, of the hands and lips in two, of the hands, face and tongue in one, of the body one, and nine patients did not state where the tremor was observed.

Trophic Disturbances.—In only five cases were trophic disturbances noted, unless we include skin lesions, and these consisted of thickening and roughening of the nails.

Station.—The station with the eyes closed was unsteady in twenty cases, normal in twenty and untested in fifteen.

Gait.—The gait was abnormal in twenty-four cases, variously described as slow, ataxic, weak or staggering. It was normal in twenty cases and unobserved in eleven.

Knee-Jerks.—In forty cases the knee-jerks were present, they were absent in six and untested in nine. In twenty of the forty cases the knee-jerks were exaggerated on both sides, in one exaggerated on the right and normal on the left, in four diminished and in fifteen they were normal.

Anesthesia.—Areas of cutaneous anesthesia were observed in twelve cases, in two of which they were only noted over the lesion. There was no anesthesia found in thirty cases and it was untested in thirteen.

Cramps.—Twenty-eight patients suffered with cramps in various places. Nine had cramps in the abdomen, legs and abdomen one, abdomen and arms one, legs six, back and legs one, legs and hands one, hands one, in the sides one, cramps general, three, and location of cramp unstated in four. In twenty-four cases no cramps occurred and in three cases it was unknown whether or not they had cramps.

Muscular Wasting and Weakness.—Muscular wasting was present in thirty-five cases, not present in seventeen and unobserved in three. Muscular weakness was present in forty-nine cases, not present in four and unstated in two.

Contraction of the Hands and Limbs.—In four cases there was contraction of the thumb across the palm, in one there was contraction of the index finger and in fifty there was no contraction of the hands. The extremities were said to be contracted a few days in one case, permanently contracted in one case, in two cases the question was unanswered and in fifty-one cases there was no contraction.

Tenderness over the Spine.—The spine was tender in nine cases, not tender in thirty-four and untested in twelve.

EYES

Size of Pupils.—Pupils were normal in twenty-eight cases, contracted in eleven, dilated in nine, right dilated and left normal in one, and untested in six.

Reaction.—In forty-three cases the pupils reacted normally to light, in six the reaction was untested, in five there was no reaction to light and in one the pupils were sluggish.

Exophthalmos.—Only one patient showed exophthalmos and that was said to be congenital.

Cataract.—Three of forty-five patients had cataract. (Also see sight under special senses.)

SPECIAL SENSES AND FUNCTIONS

Sight.—Change of sight was noted in eight cases; in one of these there was diplopia, in one photophobia and in the others simply diminished vision. In forty-one cases there was no change in sight and in six the condition of the sight was not noted.

Taste.—In twenty-one cases taste was diminished; it was "coppery" in one; there was no change in twenty-four and the matter was unobserved in nine cases.

Touch.—Patients noticed change in sensation when they touched objects in fourteen of the cases, sensation being diminished in thirteen and increased in one. Touch was normal in thirty and unobserved in eleven.

Smell.—Sense of smell was diminished in six cases, normal in thirty-eight and untested in eleven.

Hearing.—Hearing was diminished in five cases, normal in forty-one and untested in nine.

Sexual Power.—This was lost in five cases, diminished in one, normal in seventeen and the question unanswered in thirty-two.

Speech.—Difficulty of speech was noted in twenty-two cases, three of which resembled mutism; in four cases the speech was weak and in the rest the speech defect was not described. In thirty-three cases there was no speech difficulty.

GENERAL SYMPTOMS

Malaise.—Forty-nine patients suffered from malaise, in four there was no malaise and two cases did not answer.

Vertigo.—Thirty-six patients had vertigo, thirteen no vertigo and six did not answer.

Headache.—Thirty-five patients had headaches, but in most of these it was noted that the headache was slight or occasional.

Pain.—In thirty-four cases pain was noted; in seven of these cases pain in the back, eight pain in the abdomen, one back and abdomen, one extremities and abdomen, seven in the extremities, one pain all over, one pain in the side and one in the mouth. In the rest the location was not stated.

Pulse.—Pulse was normal in twenty-seven cases, rapid in seventeen and slow in one. The highest pulse-rate was 142 and the lowest 65. The question regarding pulse was unanswered in ten.

Temperature.—The temperature was normal in twenty-one cases, elevated in twenty-five, subnormal in four and unstated in five. In one case toward the end, the temperature was 106 F., but usually it was very slightly elevated and only elevated in severe cases.

Salivation.—An increase of saliva was noted in twenty-eight cases, the question unanswered in two cases and in twenty-five cases saliva was not increased.

Thirst.—Excessive thirst was noted in eighteen cases, diminished thirst in four; the question was unanswered in three; and thirst was normal in thirty.

Anemia of Mucous Membranes.—This was noted in forty-two cases, the question was unanswered in six; and in seven cases no anemia of the mucous membranes was observed.

Hair.—The hair over the body was normally grown in forty-one cases, scantily grown in eight, and two cases occurred in children in which the hair on the body had not developed. The question was unanswered in four cases.

Weight.—Fifty-two of the patients lost weight, in two mild cases the patient did not lose weight and in one case the question was unanswered. The loss of weight from the time of the appearance of the disease varied from 5 to 75 pounds.

Perspiration.—This was diminished in thirty-two cases, increased in three cases, normal in fourteen cases; and the question was unanswered in six cases.

ORGANIC DISEASES

Heart Disease.—The heart was examined and found normal in fifty-three cases and two patients had heart trouble.

Lung Disease.—The lungs were normal in fifty-one cases, in two examination was not made, in one tuberculosis was present and one case was suspicious of tuberculosis.

Genito-Urinary Disease.—In forty-five cases there was no history of genito-urinary disease; four patients had had gonorrhea in the past; one had had syphilis; in one case retention of urine was present, in one cystitis and in three cases the question was not answered.

LABORATORY FINDINGS

Urine.—The urine was not tested in twenty-seven cases, tested and found normal in twenty cases. In eight cases the urine was abnormal as follows: In one case specific gravity was 1,032 and indican increased, in one a trace of albumin, in one specific gravity was 1,040 and abundant phosphates, in one pus-cells, in one a moderate quantity of albumin, in one indican increased, in one indican increased and specific gravity was 1,031. Other than as mentioned the urinary examinations were negative.

Feces.—The feces were not examined in forty-seven cases and the stools were examined and found negative for parasites in eight cases.

Blood.—Partial or complete blood-examinations were made in eight cases. The hemoglobin was tested in five of these cases and ranged from 65 per cent. to 95 per cent. The red cells were counted in these five cases and ranged from 2,750,000 to 4,952,000. Three of these patients showed secondary anemia, one showed no anemia at all and in one case the hemoglobin was 70 per cent. and the red cells 2,750,000 giving a minus color-index, indicative of essential rather than a secondary anemia. This case gave only the usual clinical manifestations. The white cells were within normal limits in the four cases in which they were counted. The polynuclears were practically normal in the six cases counted, ranging from 68 per cent. to 80 per cent.; the lymphocytes and large mononuclears were normal in the six cases and the eosinophils were increased in one case only. All of the blood-examinations were negative for malaria.

Gastric Contents.—Gastric analysis made in one case showed nothing abnormal.

REMISSIONS AND MORTALITY

Of the fifty-five patients, eight are in their first year of the disease and alive, twelve died the first year of the disease, twenty-eight had remissions, three continued over a year without remission and it is unknown in four cases whether remissions occurred or not. Of the twenty-eight patients who had remissions sixteen have had only one each and the rest have had from two to five each. All the remissions were in the winter, but one patient had one remission in the fall and another in the late winter and one patient had three remissions, all of which were stated to have been in the summer. Most of the twelve patients who died the first year of the disease, died within the first six months. One died in five weeks.

TREATMENT

These patients were given various treatments, arsenic being the most popular. Some patients died while taking the arsenic and others had remissions. It is impossible to say whether the remissions occurred because of, or in spite of, treatment. Various local applications were applied to the cutaneous lesions but without beneficial results. Bismuth, opium, etc., were given for the diarrhea but in many cases it persisted while these remedies were being taken. In five cases I gave or suggested hexamethylenamin, with apparently very striking results. After three or four days the gastro-intestinal, cutaneous and nervous and mental symptoms began to clear up and the patients shortly went into a state of remission.

CONCLUSIONS

From these statistics the following are some of the conclusions which may be reached:

1. Pellagra may occur at any age from childhood to old age.
2. In the Southern states, although the negro forms the majority of the lower class, yet pellagra is most common in the white.
3. The disease, while affecting chiefly the lower classes, is occasionally seen among those of good hygienic and social surroundings.
4. The disease is widely spread and did not occur in local epidemics.
5. The disease in the cases reported is more common in rural districts than in the cities.
6. The majority of cases occurred in the spring and early summer.
7. The gastro-intestinal symptoms, especially the diarrhea, are usually the first manifestations of the disease.
8. The ingestion of maize or maize products, whether spoiled or not, is not alone the cause of pellagra.
9. Patients whose constitutions are depleted by pernicious habits or chronic diseases are not rendered thereby more susceptible to pellagra than those not so affected.
10. The backs of the hands are always affected in the cutaneous lesions of pellagra and the lesions are always symmetrical.
11. Exposure to the sun cannot account for the cutaneous lesions.
12. Stomatitis is almost a constant symptom.
13. The nervous and mental symptoms conform to no known nervous disease or form of insanity.
14. The nervous and mental symptoms form no distinct clinical entity.
15. The eye symptoms are not pathognomonic.
16. Emaciation is practically constant.
17. The special senses are only occasionally affected.
18. Pellagra is not *per se* a febrile disease, and when an elevation of temperature occurs it may frequently be accounted for by a complication.
19. A moderate anemia is found in most of the cases.

20. The heart, lungs and genito-urinary organs do not seem to be particularly affected by pellagra.

21. Examinations of the urine, feces and blood show nothing pathognomonic of pellagra.

22. The cause of pellagra is unknown and the study of these cases throws no positive light on the etiology. Patients may have pellagra who do not eat corn products. Sunlight does not account for the condition. In these cases no parasite, toxin, bacteria nor insect has been isolated as being the causative factor.

23. The disease is not communicable by ordinary contact.

24. Three great systems are affected: the digestive tract, the cutaneous surface and the cerebrospinal and peripheral nervous systems and their involvement seems to be in the order, named.

25. Remissions occur in over half of the cases.

26. Death frequently occurs in the first attack.

27. It is too early in the study of the disease in this country to estimate the mortality. Probably 50 per cent. die during the first two years.

28. In these cases it cannot be said that any patient is more than apparently cured as it may simply be a remission.

29. No specific cure for the disease has been found, and the remedies in general use are of doubtful value. Hexamethylenamin may possibly have curative properties.

SOME STATISTICS OF OTHER CASES

Return postals were sent to various institutions in which pellagra was thought to exist. Replies were received reporting 598 cases. The question was asked, "How many of your patients are known to have died of pellagra?" It was found that 226 of the 598 patients had died, leaving 372 living or unaccounted for.

Another question asked was, "How many living patients failed to show symptoms the following year?" Replies indicated that there were 157 which showed no symptoms to Aug. 1, 1910.

A third question was in regard to the best remedial agencies. Iron and arsenic, especially atoxyl, were used in most of the cases. The administration of these preparations, however, was not followed by brilliant results.

REMARKS

The cause of pellagra remains a mystery; the prognosis is grave, and as yet treatment is inadequate. The disease is one of problematic interest to the hygienist, the internist, the dermatologist, the neurologist and the alienist. We can not believe that a disease so serious and with such striking characteristics can have existed in the United States for more than a few years without recognition. It therefore behooves us to investigate all theories as to its cause from an impartial standpoint, until the cause is absolutely proved, and to adopt as far as practicable such suggestions for its treatment as may seem reasonable. In regard to the latter, it would be advisable to send pellagra patients to the far north before spring sets in and see if the colder climate would prevent recurrences. Several patients have told me that in the winter remission they felt ill on warm days, and one stated that the back of the hands would redden temporarily on these days. We might also try protecting exposed parts with gloves and veils.

The hexamethylenamin treatment was tried by me because of its property of forming formaldehyd in the body secretions and because of the probability of pellagra being an infectious disease, the exact character of

which is unknown. Hexamethylenamin was given to five patients in doses of from 5 to 7.5 grains four times a day over a period of about three weeks, and all other treatment discontinued. Two of the cases were so severe that it looked as if death would be the only outcome while the other three cases were of moderate severity. Such prompt and striking improvement followed the administration of hexamethylenamin that although the number of cases in which it was used is very small I feel that it deserves a more extensive trial.

208 East Franklin Street.

DISCUSSION ON PELLAGRA

At the St. Louis Session of the American Medical Association, June, 1910, the Section on Dermatology devoted Wednesday and Thursday mornings to the presentation of cases of pellagra and the discussion of that disease.

WEDNESDAY MORNING SESSION

DR. R. P. PRICE, Nevada, Mo.: I take pleasure in presenting two patients, both inmates of State Hospital No. 3, Nevada, Mo. They were treated for some time before we were aware of the character of the disease. The first case began with malaise and loss of appetite, followed in a short time by diarrhea and stomatitis and inflammation of the backs of the hands; there was also a small girdle extending around the wrists. These symptoms were treated symptomatically with little avail. I put the patients on iron, quinin and strychnin, Fowler's solution, with fruits and lemonades every two hours. This seemed to clear up the symptoms for a while; however, they returned in two or three weeks. The second patient has been in the hospital a little more than a month. The only symptom on admission was an inflammation on the backs of the hands. The diagnosis of her mental condition was maniac depressive insanity. She has run a subnormal temperature throughout the entire course. At this time she has developed diarrhea and stomatitis. I have two other cases at the hospital which developed in the same wards that these patients were in.

DR. A. RAVOGLI, Cincinnati: Pellagra is most commonly observed in Italy among the poorer classes and has been called a disease of poverty. It is supposed to be due to the fact that during certain seasons of the year these people are compelled to subsist on decayed or unripe maize which takes a greenish appearance. This, in many families, forms the staple article of food during the winter months. Under the microscope, this unripe green maize shows a peculiar fungus which has been called *Sporisorium maydis*, and it is to this that the occurrence of pellagra has been attributed. These patients after a time take an aversion to this article of food, and complain of burning of the throat. This is followed by gastric and intestinal symptoms, usually diarrhea. This constitutes, practically, the first stage of the disease. Afterward, there is an erythema of a deep, brownish color, affecting the backs of the hands and the forehead and neck—usually the parts exposed to the sun. The eruption becomes scaly in character and disappears in the cold weather, leaving atrophic scars. This skin manifestation is characteristic of the disease. These patients usually improve during the summer, when the quality of their food is better. In the more advanced cases the mental faculties begin to fail, and many of these patients commit suicide, usually by drowning. Others die of some complication or from the intestinal symptoms, colliquative diarrhea. The prognosis of the disease in the early stage is not so bad, and I have seen many patients improve under better hygienic surroundings and tonic treatment. In the later stages, the prognosis is absolutely bad and only death can relieve the patients from their miserable condition.

DR. JAMES W. BABCOCK, Columbia, S. C.: We are all inclined to regard pellagra as a new disease in this country.

As a matter of fact, it was reported in the United States as far back as 1864, and since then it has been observed in many institutions. Cases have now been reported from 28 states. It is prevalent in some of the asylums in California, and recently a number of cases have been found among the inmates of Blockley Hospital, Philadelphia. To-day, pellagra in this country presents a very momentous question. As to the etiology of the disease, I do not think that Americans are quite prepared to accept the maize origin of the disorder. The theory that it is due to a specific infection by a parasite has been advanced notably by Sambon of London and the strong resemblance that has been noted between this disease and sleeping sickness is suggestive that it is communicated by a gnat or sand-fly. One of the striking features of the American type of pellagra is its high mortality. In Alabama, in one asylum, the mortality was 68 per cent. In one of the public institutions in Columbia, South Carolina, out of 605 admissions, 92 had pellagra, a percentage of 15. Another interesting feature is the variety of mental symptoms shown by these patients. They are usually described as those of melancholia, although they may manifest themselves in many forms, from simple neurasthenia to manic-depressive insanity, and may even simulate general paresis of the insane. It has been truly said that when we know what pellagra is, we may have a much better understanding of insanity itself.

DR. WILLIAM T. CORLETT, Cleveland: The cases of pellagra that I have seen in this country have been of a severe type; much more severe than I have seen in other countries. Most patients here find their way into asylums, while in some foreign countries, notably the West Indies and Egypt, one sees more cases outside of institutions—in short, there the affection seems less severe. In this regard it may correspond to many other diseases which at first, when new in a country, manifest themselves in a more severe type. As to the distribution of the disease in this country, in Ohio we have had one case of pellagra, so far as is known, and in the clinics of the large American cities, men who are familiar with the disease have not reported it, except in one or two instances. This shows that pellagra in America is mainly confined to certain localities. In the recognition of the disease, we must remember that pellagra is a constitutional disorder, and that one cannot with safety make a diagnosis from one symptom alone.

Many cases of pellagra, even those shown here, although in one the skin lesions are typical, could scarcely be recognized from the cutaneous lesions alone. Other skin eruptions, such as simple erythema, inflammation, or eczema, may resemble the skin lesions of pellagra so closely that even the most skilled are liable to be mistaken. In the first case shown to-day, the condition of the mucous membranes is also typical, but the simple pigmentation of the skin is not sufficient to rest a diagnosis on, because it may be due to various causes. I have a colored photograph of a case of eczema which might well be mistaken for pellagra, but in my case we have only cutaneous symptoms.

Dr. Ravogli has stated that the poorer classes in Italy subsist largely during certain seasons of the year on damaged corn, and this has long since been advanced as the chief etiologic factor of pellagra. In this country, however, so far as we can trace, the disease is not limited to communities where corn is freely used as an article of diet. We have no positive proof thus far that Indian corn is responsible for the disease in this country. It may be that the use of corn in large quantities predisposes to the disease, but we are not in a position to condemn Indian corn as the sole etiologic factor of pellagra.

DR. JAMES W. BABCOCK, Columbia, S. C.: Pellagra in this country is by no means confined to institutions, nor is it limited to the poorer classes. A number of cases have been reported among well-to-do people. The disease, so far as we know, is not communicable in the ordinary sense of that word, although there are instances in which several members of the same household were affected. There is no doubt that there is an extraordinary relationship between pellagra and insanity. Preexisting insanity is apparently a predisposing factor. The skin lesions of pellagra are not

confined to the exposed surface, and many of these patients have lesions about the thighs, vulva, and anus. Cases have been reported in which women who have been operated on for relief of neurasthenic conditions have immediately afterwards developed the lesions of pellagra. There is still a great deal of mystery about this disease. We have just learned enough about it to warn us not to be too dogmatic in our assertions regarding it. I have seen a few cases in which there was glandular enlargement; in a case which I saw recently the parotid was enlarged before the appearance of the dermatitis. It is claimed that the disease is always associated with neurotic symptoms, although these may not be pronounced. As to the time of its occurrence, there is no age limit: I have seen it in a child in arms and in very old people.

DR. J. M. KING, Nashville: We do not know how pellagra is transmitted, nor whether the germ is a fungus or a protozoon. With reference to communicability we have had some very interesting cases in the south. In one institution, a Baptist orphanage, 17 cases have developed, the disease being introduced by a child 3 years old. That child was a member of a family of four, and all four later developed the disease. Following this, 12 or 13 other children in the institution became similarly affected. Whether the mode of transmission is by a fly or some other insect or through the food, we do not know. In the country, several miles from Nashville, a woman developed the disease, and shortly afterward her husband became similarly affected. In another case, the disease was apparently transmitted by the washing of clothes and I have heard of several instances in which the disease affected two persons who were intimately associated. In the family of a Methodist minister the wife and daughter contracted the disease in rapid succession. I have seen the disease among the very best classes—white people in the better walks of life. In treatment, for the stomatitis I have found that a solution of silver nitrate, from 10 to 15 grains in glycerin and water, together with applications of peroxid of hydrogen, gave the best results, and internally I give a tonic mixture of iron, quinin and strychnin. This treatment should, of course, be combined with good food and a hygienic environment.

Of the 17 cases that developed in the Baptist orphanage, 2 patients have died, and one is now in the terminal stages of the disease. The others are at least temporarily free from the disease. From the observation of our cases and the post-mortem findings, we have come to the conclusion that this is primarily a disease of the alimentary tract. The skin becomes so susceptible to the rays of the sun that an erythema is produced. I recently saw one patient who had the disease for 2 years, and in whom the skin manifestations did not appear until a week or so before death. It is unquestionably a constitutional disorder, and probably of gastro-intestinal origin. The diagnosis rests on the skin lesions and the patient's mental condition.

DR. JOHN D. LONG, Washington, D. C.: During the past few months, I have been making some studies and observations of pellagra in South Carolina, and have been particularly interested in the microscopic findings in the stools of pellagrins, namely, muscle fibers, starch, crystals of various kinds, fats, oils, mucus, pus, blood, vegetable cells and fibers, and parasites, such as amebas, flagellates, ascaris, uncinaria, trichuris, oxyuris, etc. These findings are of interest in connection with the possible etiology of the disease. I was inclined to believe that the disease was due to some intestinal toxin, and this view was strengthened by the fact that in the milder cases, those that were not too far advanced, the mental symptoms were relieved very markedly by free elimination through the intestinal tract. In the more advanced cases the patients who were actually insane did not respond so well to treatment. The result of *x-ray* findings in these cases showed the presence of a number of spinal deposits, with pressure on certain spinal nerves and consequent interference with the function of those nerves. The presence of these spinal deposits was verified in one case which we had an opportunity to examine post mortem.

THURSDAY MORNING SESSION

DR. GEORGE A. ZELLER, Superintendent State Hospital, Peoria, Ill.: It is through the courtesy of the Governor and the Board of Administration of the State of Illinois that I am able to show these seven cases of pellagra. In 1908, roundly speaking, about 1,000 cases of pellagra were reported in this country; in 1909, 5,000 were reported, and this year the number seems to be increasing in the same proportion. The disease is characterized by slow but constant extension. It has been known in Italy for over a century and a half, and has been the object of careful study there by Lombroso and others. In the patients brought here this morning, the pigmentation of the skin, especially on the backs of the hands, which is usually very characteristic of the disease, is not very pronounced at this season of the year. While it is not believed that pellagra in this country has existed in the past to the same extent as it does now, still there were probably many cases that went unrecognized, especially in public institutions, and in retrospect now we see that in the insane patients in whom we had to apologize for the condition of the hands and arms we were really dealing with cases of pellagra. The public is gradually waking up to the importance of this disease, and in Great Britain, the king has recently appointed a commission to study the spread of the disease throughout the empire. The Governor of the State of Illinois has also appointed a commission, headed by Dr. Frank Billings. Many who have given this subject their consideration are taking a middle ground between the unconcerned and the alarmists. I represent the latter. I really feel that the situation is alarming. These patients have been brought here for study and instruction. All have been officially declared insane, and they have been in the hospital for varying lengths of time. In these patients, at present, the intestinal symptoms are lacking, but they will come later.

Pellagra (Italian, *pelle*, skin, and *agra*, rough) was first described by Frapolli in 1771. It has also been known as Alpine scurvy and sunstroke of the skin. It has been confused with leprosy, eczema of the hands and other cutaneous affections. Many unsuspected cases have recently been discovered in various public institutions. The U. S. Government, through Captains Siler and Nichols of the War Department and Dr. C. H. Lavinder, of the Public Health and Marine-Hospital Service, is now investigating the subject abroad, and Dr. John D. Long, of the latter service, has been pursuing investigations along similar lines in the South. In a city of 75,000 people, I recently saw a woman who had this disease for 7 years. She had been treated, at various times, by 12 physicians for supposed eczema and other conditions. Finally, she consulted a physician who had seen some of these cases at our institution, and he was able to make a correct diagnosis. She died recently with an undisputed history of the disease dating back 7 years. There are doubtless many similar cases in various cities throughout this country—cases of pellagra that have gone unrecognized, and the disease may be extending gradually, as has been the experience in Italy. Illinois was the fifteenth state in this country to report pellagra, and since then, cases have been reported from ten additional states. There has been some talk of a national congress for the study of pellagra this summer, but I question whether this would be an opportune time for such a meeting. I think it would be better to wait until the men who are studying the disease abroad are prepared to give us the results of their investigations, and in the meantime those men who have the opportunity should take up this work as a special study and learn what they can in regard to this mysterious malady.

As to the treatment of pellagra, we have had the best results with arsenic. On the theory that the causative factor of the disease was intestinal and due to the presence of a parasite or ameba, it has been suggested that the bowels be flushed through an appendicostomy wound, but so far nothing has been done along that line.

DR. JAMES W. BABCOCK, Columbia, S. C.: Dr. Zeller and I can tell you frankly that anyone who shows special interest in pellagra, or who tries to direct the attention of the med-

ical profession to this important subject, is going to be criticized not only by the laity, but by our own profession as well. In the South Carolina asylum there were last year 605 admissions, and of these, 92 patients had pellagra, and because I have attempted to call attention to the importance of this subject, a brother physician, a fellow member of the South Carolina State Medical Society—who happened to be also a member of the state legislature, announced before that body that "Babcock is crazy on pellagra."

The subject of pellagra is a momentous one, particularly to the alienist. Two and a half years ago it was generally unrecognized in the United States. We are frequently told that it is a new disease, but when we look back to the musty records of the past, we find that two cases were reported by asylum physicians as far back as 1864; one by Dr. Tyler, of Somerville, Mass., and one by Dr. John P. Gray, of Utica, N. Y. Dr. W. J. W. Kerr, now of Corsicana, Texas, who was assistant physician of the Andersonville Prison during the Civil War, is satisfied that one of the causes of the mortality in that institution was due to pellagra. In 1883 a case was put on record by Dr. Samuel Sherwell of Brooklyn, N. Y. Subsequent to that, other cases were reported again by Dr. Sherwell and by Dr. Harris of Georgia. The first epidemic was reported by Dr. George H. Searcy, of Alabama, in 1907, who discovered a number of cases in the state insane asylum for negroes at Mt. Vernon, and in the same year I independently reported the presence of pellagra cases in the South Carolina Hospital for the Insane. Since then, patients suffering from this disease have been found in many other asylums, and to-day we have records of pellagra cases in 28 states, including California, where the disease is believed to have existed in one institution for the past 7 years. I have no doubt that there are at least 5,000 cases of pellagra scattered throughout this country, from the Atlantic to the Pacific, and from the lakes to the gulf. If I did not know from personal experience what unkind things have been said of physicians who have directed attention to this subject, I should be unwilling to admit that one medical man would raise his voice in criticism of another who is making an effort to emphasize the importance of the situation we are facing to-day. If pellagra has existed in this country for some years why was it not recognized earlier? Simply because the great medical authorities told us that it was an Italian disease. Osler, in the edition of his "Practice of Medicine" prior to the latest, says that pellagra has never been observed in the United States. I know a brother physician who recognized pellagra in the South Carolina penitentiary in the eighties, but abandoned his diagnosis for lack of authority from the medical writers he consulted. Five years ago, at a meeting of the South Carolina State Medical Society, an unmistakable case of pellagra was brought before one of the very best diagnosticians in the United States; he studied the case for an hour and then said the patient had "glossitis." Yet, in the face of all this, we are told that we are crazy about pellagra; but after a physician has seen patients die of this prevalent and loathsome but unrecognized disease, and at last thinks that he has light upon a dark subject, he is bound to raise his voice in warning in regard to this insidious and fatal malady. Let me say in passing that Dr. Walter Wyman, the head of the U. S. Public Health and Marine-Hospital Service, more than anyone else in the United States, deserves our gratitude for the manner in which he has taken hold of the pellagra problem. He was broad-minded enough and strong enough to say, in 1908: "Yes, we will investigate this disease," and he has never taken a backward step, although, like the rest of us, he has doubtless been subjected to criticism for the continued activity he has shown. Captains Siler and Nichols of the U. S. Army have also been very active in the matter.

DR. MARCUS HAASE, Memphis, Tenn.: My experience with pellagra has been limited to 23 cases last year, and 6 cases so far this year. They have all been outside patients—not institutional cases. They either came to the hospital, or else I saw them in consultation outside with their physicians, and they were not cases in which the mental sym-

toms were pronounced. Of the 23 patients whom I saw in 1909, 5 died. The age of the youngest of my patients was 3 years, and the oldest was 70. I would hesitate to make the diagnosis in these cases from the skin lesions alone: other symptoms are necessary for a diagnosis. As to the causative factor in these cases, the corn theory has not been taken into consideration at all, excepting that cereals have been excluded from the diet of these patients.

DR. TINSLEY BROWNE, Hamilton, Mo.: I wish to report a case of pellagra that occurred in Northwestern Missouri, of about 3 years' standing. It was the first case of the kind I had seen, and I did not know what it was. The patient's hands first broke out with what was supposed to be sunburn. Then he developed an uncontrollable diarrhea and gradually became insane. The eruption on the hands recurred the following year. The man was a dentist, 55 years old, and had been a great user of the corn products.

DR. OLIVER S. ORMSBY, Chicago: The commission appointed by the Governor of the State of Illinois to investigate pellagra is engaged in various ways getting information both clinical and experimental but has nothing to report as yet. During the winter while the disease has been in abeyance, the work has been directed largely toward investigation of the corn and other food products. There is a special hospital at Kankakee where pellagra patients are kept under observation and it is hoped to accomplish something in this study. We all feel greatly indebted to men like Dr. Zeller and Babcock who through their enthusiasm and knowledge have awakened both the official and lay public to the importance of the subject and thereby made such an investigation possible. In regard to the diagnosis of pellagra, some mistakes have of course been made. Cases of eczema and other skin conditions have been erroneously diagnosed as pellagra. When this subject first came up, physicians visited the hospitals and saw these patients, and then went over the records, thinking that perhaps some cases might have escaped notice, but in this respect their experience was different from what it had been in connection with other new diseases. In the early experience, in blastomycosis, for example, we were able to recall unrecognized cases in the past, and the same is true of sporotrichosis, but it was not so of pellagra. We could not find the record of a single case in the past that we felt sure was an example of this disease.

DR. HOWARD FOX, New York: It is perhaps presumptuous for a New York man to discuss pellagra on this occasion as in New York we have seen almost no cases of the disease. The interest which pellagra has excited among physicians in New York was shown at one of our meetings last fall when Dr. Babcock and Dr. Watson read papers on the subject. Reference has already been made to the two cases that have been seen and reported by Dr. Samuel Sherwell of Brooklyn. Dr. C. H. Lavinder has also seen a case at the Marine-Hospital on Staten Island. Another case of pellagra has been seen at Ward's Island and still another recently at Newark, New Jersey. The subject is of particular interest to me from its dermatologic aspect. From the descriptions in the text-books and especially from the excellent volume of Ludwig Merk there is no question in my mind that many of the cases seen in this country are identical with the cases of pellagra abroad.

DR. ISADORE DYER, New Orleans: I had the privilege of studying the cases of pellagra which were investigated by Dr. Searcy during the first outbreak which was noted in this country, and which was, perhaps, the chief cause of inciting interest in this unusual disease. Since then, the city of New Orleans has produced a considerable group of cases of pellagra derived from the neighboring cities and located in the Charity Hospital. Comparatively few cases have occurred in the State of Louisiana proper. There are two insane asylums under the public direction, and in both of these a number of cases have been observed in the past few years. The statement that pellagra exists in this country I wish to endorse as a dermatologist, and say that in my opinion, it is a new disease. The first case I saw was sent to me by a country physician of Alabama who recognized it as pellagra. This was prior to the study

of the Mount Vernon cases by Dr. Searcy. I did not concur in the diagnosis of the case sent, regarding the condition as a toxic erythema and treating it as such. This patient ultimately recovered, which strengthened me in my belief that the disease was not pellagra. My later observations of other similar cases led me to change my opinion of this original case, and to accept the diagnosis of the country physician that the case was one of pellagra. In regard to the care of this disorder, my experience has been limited to about 10 cases. I have seen patients in New Orleans in various stages of the disease, largely under the direction of Dr. Bass, who has done a great deal of work in connection with pellagra in Louisiana, and who has observed more cases than any one else in the city.

I am not an alarmist in relation to pellagra; I am a conservative. I believe that this is a disease which may be cured, and I am prompted to make this statement from my own results. In some of my cases, the disease was so far advanced that the patients made their own diagnosis. While there are certain skin diseases which are liable to be confused with pellagra, I differ with those who claim that the skin lesions of this disease are not distinctive and cannot be differentiated from ordinary sunburn. While there are atypical cases which it would be difficult to recognize, there are classical cases in which the skin lesions are characteristic. In my investigation of this disease, which has been limited, I have learned to class these cases as belonging to the erythema group, and the internal or other evidences which they present argue in favor of that belief. I consider a persistent erythema limited to the hands, neck and chest as almost as strong a diagrammatic confirmation of pellagra as are the lesions of leprosy or those of tubercular syphilis. In the treatment of all my cases of pellagra I have used quinin hydrobromate, and even in advanced cases, with stomatitis and diarrhea, I have often given 10 grains 3 times daily, and have kept it up until those symptoms have been controlled. The dose can then be reduced. In addition, I have used arsenic, which I believe is of distinct service. None of my patients has died, and some are now free from the symptoms of the disease. I believe that quinin is of great service in the treatment and cure of pellagra.

DR. A. J. VANCE, Harrison, Ark.: Pellagra is described as a disease of Southern Europe, and until recently it has been considered foreign to our list of ills. The first report of the disease was in Spain in 1735, about 40 years after the introduction of Indian corn. Frapolli of Milan was the first to describe the disease and to call it pellagra (in 1771). He declared it had existed since 1578, and since then Italy has been a hotbed for it. In 1884 the mortality was 13 per cent. In 1905 it had been reduced to 4.3 per cent. and in 1907 it had been still further reduced to 0.7 per cent. Marzari was the first to call attention in 1810, to the relationship between the use of corn and pellagra. Vincenzo Setti in 1826, asserted the main cause of pellagra to be a fungous growth on the corn, producing decomposition of the oils in the corn. In 1776, an ordinance was passed in Venice prohibiting the sale of corn having a bad taste or odor. There is nothing to indicate that pellagra is caused by corn *per se*, but by corn not fully matured and which has been stored in damp places and allowed to mold.

With the limited experience of physicians in the United States, the prognosis is considered grave. Statistics are meager and unsatisfactory, based on asylum cases which give a mortality of 67 per cent. of the patients; 10 per cent. become insane and these rarely ever recover. Pellagra is essentially a chronic condition. Pellagrins are said to live from 20 to 30 years. The disease is also liable to recur months after recovery seems to be complete, and death frequently follows the second or third attack. In addition to the eruption on the dorsal surface of fingers and hands which is very much like sunburn, we find diarrhea, sick stomach, stomatitis, and ulcers on mucous surfaces, in mouth, rectum and vagina; later the patient is nervous and probably delirious.

Has Dr. Babcock observed a peculiar odor of the feces so characteristic that a diagnosis can be made? Dr. Cole of

Mobile has been getting good results from the transfusion of blood from cured pellagrins, and even from healthy persons who have never had pellagra. If Dr. Babcock and Dr. Zeller are crazy on the subject of pellagra, we should be thankful for such insanity. This is a serious problem, one which many of us will be required to meet.

DR. JAMES W. BABCOCK, Columbia, S. C.: Physicians are waking up to the fact that pellagra is a big subject, and to the asylum physician it is a different problem from what it is to the dermatologist. To the asylum physician it is a very serious question. We deplore the notoriety the subject has received through the newspapers, and we are willing to admit that there is at present in this country more or less pellagraphobia. Still, it may not after all be entirely unfounded. Dr. J. D. Long recently visited Blockley Hospital in Philadelphia, in consultation with the local staff and among the patients there he recognized 9 cases of pellagra, and 16 suspects. This shows that the disease is gradually being observed north of Mason and Dixon's line. Some French authorities have stated that there were probably only certain classes that were susceptible to this unknown toxin, those who eat maize, alcoholics and the insane. Dr. Vance referred to the peculiar odor of the stools of these patients. There may be some grounds for this belief, and I know nurses who state that such is the case. There is perhaps as much foundation for it as for the belief that smallpox has a peculiar and characteristic odor.

DISCUSSION ON THE SANITARY OUTHOUSE

At the St. Louis Session of the American Medical Association, June, 1910, in the Section on Preventive Medicine and Public Health, Dr. Charles W. Stiles, Washington, D. C., exhibited some models of privies, such as have been illustrated in his article issued by the government.

DR. CHARLES W. STILES, Washington, D. C.: The average privy in the country districts is ventilated between the boards and every other way, is open in the back, and is not over an excavation. From it there is bound to be a spread of the various soil pollution diseases: typhoid fever, amebic dysentery, bacillary dysentery, hookworm disease, etc. It is the exception that I find a privy of a better type than that on the farms. It is my belief that I do not usually find, medically speaking, a better type of privy in the suburbs of cities; although, from the standpoint of construction, the suburbs usually have a much better type. One can readily see how disease can spread from such a structure.

After studying the matter from several points of view, I have prepared a design for a sanitary privy. It must be private, must prevent the spread of disease, and must be cheap. My design can be built, so far as the material is concerned, for from \$5 to \$10, the cost varying according to the price of material in different localities. It is closed in the back, and underneath is a water-tight pail, tub or barrel. There should be cleats, so that that pail will always center; and it is best to have the top of the pail come snugly up to the seat. By using a fluid disinfectant, or simply water, with a cup of kerosene oil on top of it, the flies can be kept away from the excreta. If a fluid is used, the pail must be deep enough to protect from splashing.

One of the great problems of the outhouse is to make the privy as little disagreeable as possible. One reason why people avoid the privy in hot climates is that it is a disagreeable place. To overcome that point I have put in five ventilators. The door should close of its own accord, with a spring. Most house privies have from two to four seats. I see no advantage in that; and the expense can be reduced by having a single seat. There should be a lid to the seat, so arranged that as soon as a person rises the seat will fall of its own accord. For children, a separate smaller seat can be used, shoved into place according to necessity.

This privy is protected against flies in various ways: first, by the screens, by the automatically closing door and coverlid, by a tight door in the rear and by the use of a fluid disinfectant. The fly protection can be carried one point further by painting the privy dark. Flies are attracted by light colors, mosquitoes by dark colors; but I think the flies are amply guarded against by the ventilation, the fluid in the pail, the screens, the automatically closing doors, and the rear door (for removal of pail) falling down so that it has to be raised.

The Public Health and Marine-Hospital Service issues a reprint giving the carpenter's estimate for the lumber, showing the lumber sawed up into the proper shapes, and giving full instructions from beginning to end, so that any schoolboy of 12 or 14 years of age can construct a sanitary privy for his home. Recently I have induced some of the schools in the South to introduce the sanitary privy as one of the regular objects to be constructed in the manual-training classes. They can just as well build a privy as anything else.

DR. J. N. HURTY, Indianapolis: I hope that the papers of the land will soon—say within the next year or two—commence to appreciate the work of sanitarians. As we know, there are 2,000,000 people in the South rendered inefficient, made burdens on the states in which they live, and all because of a preventable disease. When first pointed out by Dr. Stiles, his first reward was ridicule. I don't know that the papers have ceased ridiculing it yet; I would not be surprised to find that they are still making fun of this great discovery of the cause of so much misery, so much inefficiency, so much sickness and so much shortening of life; but let us hope that they will get hold of the idea presently. This is not a savory or beautiful subject, but it is very important.

DR. CHARLES W. STILES, Washington, D. C. [Replying to questions asked by several members]: As to the destruction of infection by disinfectants, sufficient studies have not yet been made. Any thing which will keep oxygen from the hookworm eggs acts toward destroying them. At the same time, we must recall that in the dry-earth system the night soil is not sufficiently covered with dirt, and we cannot get people to keep them covered. I am coming to the view that a fluid disinfectant, if only water and kerosene oil, is perhaps after all the safest; but that point is still *sub judice*.

As for the final disposition of the night soil, any farmer can put a pail like that on two stones, make a fire under it and thoroughly disinfect the foul material. If two pails are provided instead of one, one pail may be utilized for a week and then be set aside to ferment; this is an additional safeguard against the spread of disease, because fermentation breaks up the fecal material entirely, and the ova are so destroyed.

I recommend a privy raised from the ground to avoid rats. A privy which is built down to the ground all the way around provides a breeding place for rats. This is avoided by the opening under the floor.

Vaccine Therapy in Skin Diseases.—T. C. Gilchrist, in *Journal of Cutaneous Diseases*, states that in the treatment of cutaneous affections vaccine therapy is a distinctly valuable adjunct to our therapeutics. The *Staphylococcus albus* vaccine is of undoubted value in all pustular affections of the skin but especially in treatment of relapsing furunculosis, staphylococcus dermatitis, sycosis vulgaris, in certain forms of eczema, pustular rosacea and in acne when the disease is mostly secondarily infected with the *Staphylococcus albus*. He has also found vaccines of value in erythema multiforme, especially of the relapsing bullous type, and in rosacea, where the flushings were decreased by the vaccine therapy. It was also helpful in dermatitis herpetiformis and pityriasis rosea. He would recommend that vaccine therapy be tried when the disease does not yield to the usual method of treatment. *Bacillus acne* vaccine be found of value in the chronic nodular relapsing types of acne vulgaris, and in his hands, in a great many cases it has proved a curative agent.

THE MAKING OF A SURGEON

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It is a good principle in life, no doubt, for every one to be charitable in the judgment of others, and it is also commendable to look well to our own preparation and worthiness before we criticize or find fault with the work of others. But there is a kind of professional patriotism that prompts one to take pride in his calling, and a true humanitarianism that leads us to consider the rights and claims of our fellow beings to the best that can be given them. With this spirit, let us for a few moments consider the requirements that might reasonably be made of one who makes pretenses to the practice of surgery. We recognize that certain standards have to be reached by every one before a license to practice any branch of medicine can be obtained: a diploma from a recognized medical college, and a successful examination before a board of state examiners. A certificate thus obtained gives the candidate the legal right to practice all branches of medicine, whether they be surgery, gynecology, ophthalmology or internal medicine, without interference.

But should not the question of special fitness be raised, especially with regard to those who pretend to hold positions in public institutions, or those of a private character, receiving state aid? In these cases it is not only the right, but the duty of hospital managers, trustees, or directors, to inquire definitely into the ability of their appointees to do the work to which they are assigned. In private life the patient exercises this right, the right to choose his physician, surgeon, oculist, or any other specialist, but to patients in hospitals this right does not come. They must take the physician or surgeon chosen by the governing board, and the responsibility these boards incur may be inferred from a very imperfect knowledge of the kind of work that is done in many hospitals.

The reasons that actuate hospital boards in choosing members of their staffs are various and sometimes very interesting. It is the wish of some boards to extend the benefits of the hospital to as many physicians in the neighborhood as possible—to have a kind of open shop; hence a very large staff and a short term of service. In other cases appointments are made for political reasons, to represent various nationalities, or different religious creeds: "Could the force of folly any further go?" you ask, but we know that just such conditions do exist. Rarely is the question raised of special ability to do the work to which the applicant is assigned.

We know that this is all wrong. All over the country there are men acting as surgeons to hospitals who never do any surgery except during the few months in which they are assigned to hospital duty. Furthermore, these so-called surgeons never go away to learn from real surgeons how the work should be done; they are so self-sufficient that they cannot be taught.

The question is pertinent, why this mad desire to be surgeons should possess so many men on entering the profession. The brass-band enthusiasm by which public journals herald the results of modern surgery turns their heads and leads them to overlook the equally wonderful conquests of internal medicine. Good physicians are needed in greater numbers than good surgeons. Rarely a human being lives for a great length of time without requiring the services of a physician, but many—indeed, the great majority of the human family—

never stand in need of a surgeon. And the wonderful triumphs of modern medicine: robbing diphtheria of its terror; the fight against tuberculosis; and the signs of promise in the horizon, the triumph over malarial diseases and yellow fever enabling the government successfully to dig the Panama canal—these are some of the wonders of internal medicine that are equal, if not superior, to anything accomplished by surgery.

It was my pleasant duty a short time ago to address a letter to a number of eminent surgeons of the country, asking each to give me briefly what he considered the essentials in the making of a surgeon. To this letter I have had the following replies:

DR. WILLIAM L. RODMAN, Philadelphia: Some one has said that a surgeon should have the heart of a lion, the eye of an eagle, the hand of a woman. But valuable as these assets undoubtedly are, they are inadequate. In the first place, I consider a thorough anatomic foundation most necessary. Many of the best surgeons and teachers of surgery have previously taught anatomy. At this time, when there are so many good hospitals and experienced surgeons needing assistants, there is no excuse for one contemplating a surgical career not to have had from one to three years as first assistant to a surgeon of recognized standing. In this way will he learn not only what to do and how to do it, but also that which is vastly more important, what not to do. Good judgment, or "horse sense," is both the rarest and most essential quality in a surgeon. "Fools rush in where angels fear to tread." A very large percentage of the ill-advised operations in surgery are done by those who have never had a careful surgical training.

A successful surgeon should of course be a liberal reader of current literature, should be active in societies, and above all things, visit the clinics of other men. It is so easy to be narrow, so difficult to be broad. Lastly, I consider that surgeons of this day, superior as they are in many respects to the former generation of surgeons, could with advantage imitate them in the careful preparation and intelligent post-operative treatment of their patients. Too much is left to house surgeons and nurses. There are many good operators, but fewer surgeons. The words "operator" and "surgeon" are frequently used synonymously, but alas, what a difference!

DR. J. WILLIAM WHITE, Philadelphia: Surgery is a highly technical occupation resting fundamentally on the general principles of biology—normal and pathologic—and requiring, not only clear thinking based on broad knowledge—as do all medical pursuits—but also a certain degree of manual dexterity. In the making of a surgeon these essentials should, so far as possible, be complied with.

A young man or boy, destined to be a surgeon, should be familiarized with the principles of evolution and of natural science and the general laws of plant and animal life, and should be especially instructed in comparative zoology. He should be taught at least elementary physics and chemistry, and it would be of distinct advantage if during this period his eye and hand were educated by animal dissection and experimentation in a biologic laboratory.

It is axiomatic, however, that his work with animals should inflict on them no pain or suffering. While this may be necessary in rare instances, when a trained experimenter is investigating problems related to the welfare of the whole human race, and indirectly to that of the lower animals themselves, the student who is taught by precept or example to disregard it will lose something that will be of far more value to him later in life than even facility in recognizing structures and tissues, in tying blood-vessels, and in differentiating normal and diseased conditions, serviceable as such knowledge would be to him when he begins his real surgical labors. Practical work in a physical and in a chemical laboratory would aid materially in the combined training of hand, eye and brain that is aimed at.

He should have such general education in addition as will enable him to understand and to write his own language, and, if that is English, to read French and German also.

The latter languages are desirable, not only because of the storehouse of useful knowledge that is thus opened up to the student of surgery, but because acquaintance with them leads to clear and precise use of English in speaking and writing, an accomplishment the value of which it would be hard to overestimate.

With this equipment, the graduated theoretical and practical courses in medical schools of the first class would meet the next indications, would be infinitely more valuable to the average student than they ordinarily are, and would leave him at the time of taking his degree ready for the next and final stage of his education as a surgeon. This will last throughout life and may be divided, as Gaul was, into three parts: first, experience; second, experience; third, experience!

DR. J. F. BINNIE, Kansas City, Mo.: 1. Material to work on, viz., a gentleman in good health and blessed with common sense.

2. Preliminary training: good school education, with preferably some manual training. College training, with special courses, if possible, in physics and biology.

3. Good professional training for general practice.

4. Term as intern on medical side in a good hospital.

5. Term as intern on surgical side of a good hospital.

6. Experience as assistant to a good surgeon and as much dispensary work as possible.

7. Membership in a good review club and hard work in it.

8. Preservation of the common sense originally present.

9. Preservation of the health by being temperate in all things, and not too much dignity to permit indulgence in proper amounts of tennis, golf, open air, trashy novels and fun.

DR. GEORGE EMERSON BREWER, New York: The surgeon should, primarily, be a man in the broadest sense of the word. He should possess by inheritance, or acquire by early training, a broad philanthropy and uncompromising integrity. In addition to his technical training, he should cultivate a habit of accurate observation, prompt decision, and logical action. While tolerant of the opinions of others, and amenable to reasonable argument, his training and experience should be such as to enable him to rely on his own judgment in moments of grave responsibility.

DR. HOWARD KELLY, Baltimore: I believe that the training for a surgeon should come through several years of hospital work, under good men. The young surgeon should begin at the bottom, and learn every detail that has to do with surgical work, up to the doing of operations. This presupposes laboratory work, ward work, reading, assisting at operations, operating, first in simple, then in more difficult cases. I believe a training of this kind can be secured only by four or five years' hospital work.

DR. GEORGE W. CRILE, Cleveland: While I think "surgeons" may be made, yet I have thought that they are largely born. The making part of them, in my opinion, consists most effectively in the development of a deep interest in the work; accuracy of observation; industry, and infinite patience. I would recommend these merely as essentials, but after all it is work, work, work, that counts.

DR. ALBERT J. OCHSNER, Chicago: First, the man to start with must be a tremendous worker. He must have the quality of thoroughness and patience, and he must be studious. Then he should have a thorough pre-medical course of at least four years, specializing in languages and science, particularly in German and French; in biology, physiology, comparative anatomy, and he should take a long laboratory course in bacteriology; a fairly thorough course in zoölogy, botany, and chemistry, histology, and embryology.

His medical studies can be accomplished in any one of a dozen of the best schools in the country equally well. He should then serve as an intern in a hospital in which there is a good medical and pathologic service for at least two years. Then, he should become an assistant to a real surgeon for at least five years, giving all of his time to examination of cases, assisting in operations, and after-treatment, examination of pathologic tissue, and research work. Later on he should spend at least one month every year seeing other surgeons work.

DR. JOHN B. MURPHY, Chicago: First of all you must have the man; that is, an individual of strong moral courage, positive convictions, sterling integrity, and a keen recognition of a sense of obligation to his fellow-man. To make a surgeon of him he should have a good medical education. After graduation, he should have an internship of at least one and one-half years in a large general hospital, and work in all of the departments of the hospital. Then he should spend one to three years assisting a surgeon and diagnostician. All of this time his attention should be devoted keenly to surgical pathology.

DR. JOHN C. MUNRO, Boston: 1. Good health.

2. An ingrained regard for the truth; patience and the willingness to make sacrifices without self-consciousness.

3. Education in a school that grounds its pupils well in fundamentals.

4. Training for a year or more in a general hospital that affords opportunities to gain a broad training in internal medicine, as well as in the surgical wards, laboratory diagnosis, and the handling of all classes of people.

5. Special work in acquiring a fundamental knowledge of anatomy and physiology.

6. Apprenticeship in the service of a skilled surgeon for from one to five years, supplemented by research work in animal experimentation, or literary investigation, as seems best.

7. The ability to discriminate the useful from the useless when observing the work of other surgeons, and to modify one's own work thereby.

8. A working knowledge of the principal advances in medicine, therapeutics, etc., and as intimate a knowledge as possible of all definite surgical advance.

9. A reading knowledge of German, French, and Italian.

10. Study abroad only after several years of practice, when certain subjects can best be investigated. Especially charity towards the work of others, modesty in respect to one's own work, and sympathetic honesty toward the sick that apply for aid.

DR. WILLIAM J. MAYO, Rochester, Minn.: 1. A broad pre-medical education.

2. A good medical education.

3. A year as medical intern.

4. A year in pathology, not neglecting gross pathology for a minute.

5. A surgical internship.

6. Five years as an assistant to some active hospital surgeon, all the spare time in general practice, with especial reference to general diagnosis.

7. A life of hard work with frequent trips to visit surgical clinics, attend medical societies, and take part in discussions.

8. Not less than one hour a day with journals and books, and a credit and debit account of time.

From the above permit me to generalize and point out what seem to be some of the essential elements in the making of a surgeon:

First, the man. It is axiomatic that some individuals, if not all, are fitted by Nature, or Nature's God for certain kinds of work.

Our spoken language recognizes the truth in the word "calling." "Avocation" means the same thing. May not this be the way the Great Creator calls men to do His work in the various walks of life?

Poeta nascitur non fit, is a very old and trite saying, but a true one. Happy is the man who recognizes this calling, or interprets it aright and prepares himself accordingly.

"What's a' your jargon o' your schools—

Your Latin names for horns an' stools?

If honest Nature made you fools,

What sairs your grammars?

Ye'd better taen up spades and shools,

Or knappin-hammers.

"A set o' dull, conceited hashers
Confuse their brains in college-classes!
They gang in stirks, and come out asses,
Plain truth to speak;
An' syne they think to climb Parnassus
By dint o' Greek!"

Thus does Burns characterize the pretenders who would obtrude themselves into the sacred realms of poetry.

What are some of the characteristics which we may reasonably look for in one designed by Nature for the work of a surgeon?

As quoted by Dr. Rodman, an old writer says that the surgeon must have the eye of an eagle, the hand of a woman, the heart of a lion; in other words, far-seeing, quick perception, manual dexterity, and courage. Manual dexterity is of great importance: the surgeon must be a handy man. A man with a hand like a ham may become a skilful surgeon, but that is not likely. Some have regarded this work as mechanical; it is that, but much more. The surgical mechanic will never get very far. Marion Crawford says that "surgery is a fine art." That is a more fitting definition, but it does not cover the ground.

There is no kind of work that calls for such a display of physical and mental activity as that under consideration. Every day of his life—yes, many times a day—the surgeon must be the court, the jury, and attorneys on both sides of the case—for what else is a diagnosis?

He must carefully elicit the evidence on all sides, must sift the same by careful cross-examinations, must render the verdict, and finally must pass sentence and carry the sentence into effect.

Added to these physical and mental characteristics, he must be a normal man mentally and physically, possessing cheerfulness, hopefulness, inspiring confidence, and the most perfect optimism. He must be healthy, tireless in his industry, and conscientious, for all science is dependent on conscientious uprightness, and the Golden Rule is applicable in no walk of life more than in practicing surgery.

Second, as to the surgeon's education, the curriculums of the best medical colleges have been so extended and are so complete that their graduates all have a well-grounded preparation for work, and we have no right to complain or to criticize. The preliminary requirements for entering are yearly becoming more and more complete: several of our best schools require a degree of A. B., or its equivalent.

To the preliminary requirements, and the education the student receives in college, there is no objection to be urged. On the other hand, they should receive words of commendation only, and this brings me to the third and final topic.

Third, as to training for work, granting, now, that we have the man fitted by inheritance, endowed by Nature with all the inborn traits above referred to, that the future surgeon's preliminary preparation has been of the best, that he has completed the requirements of graduation in the best medical colleges, and has served a term of one or two years in a general hospital, wherein he may have a wide experience in medical and surgical work, under the care and direction of chiefs of the various departments, is he now prepared to do the work of a surgeon? Many eminent writers have urged that in addition to this hospital practice the young surgeon should have several years' experience in private practice, for it is urged that the conditions are very different in

private life from those observed in hospital work. This may or may not be important, according to the kind of training he may have had in his hospital life: a general hospital with a large medical service may be sufficient, though I think that the discriminating judgment that comes from several years of general practice renders him a better balanced man in the matter of diagnosis.

But, now, is the surgeon fitted to do operations of importance? Let me quote from surgeons named above as to requisites.

Rodman says: "One to three years as first assistant to a surgeon of recognized standing.

White: Experience, experience, experience.

Binnie: "Experience as assistant to a good surgeon."

Kelly: "Several years of hospital work under good men. I believe that training of this kind can only be secured by four or five years of hospital work."

Ochsner: "Assistant to a real surgeon for at least five years."

Murphy: "He should spend one to six years assisting a surgeon and diagnostician."

Munro: "Apprenticeship in the service of a skilled surgeon from one to five years."

Mayo: "Five years as an assistant to some active hospital surgeon."

One of the most eminent surgeons of the West acted as assistant to a real surgeon for a period of nine years, rarely or never receiving a fee for his services; but that man to-day is a power wherever he goes. In his clinic, which is one of the largest and most interesting in the country, you will find visitors from all parts of this country and Europe, and in the deliberations of the Surgical Section of the American Medical Association, or the American Surgical Association, crowds hang on his words of wisdom, and attest their respect for his skill and great surgical knowledge.

Were surgery nothing more than a trade, the apprenticeship should extend over several years: a machinist must have at least three years' training before he is permitted to do a machinist's work; and is the human body of less importance than a machine?

Surgery has been called a fine art. What years the young painter or sculptor must spend in training before his work can command respect, or appreciation! Surgery is more than a trade or a fine art. It is the grandest warfare the world knows about: the conflict of the forces of scientific skill and training against the wickedest foes to human life, in which the battlefield is the sentient, quivering, suffering human body.

And finally, several of the eminent men quoted above advise the surgeon to go out and see the work of his fellows.

"He should spend at least a month every year seeing other surgeons work," says the wise Ochsner: "Frequent trips to visit surgical clinics," says the dominant Mayo. And those who have acted on this advice know only too well what the benefits are: the inspiration, the mental uplift that comes makes one feel that he has been associating with the immortals.

109 South Franklin Street.

Gastric Capacity of Infants.—The gastric capacity at birth is reckoned as 1 per cent. of the body weight, so if the child weighs 100 ounces, its gastric capacity is 1 ounce, and during the early months 1/30 of an ounce is added for each day of life.—N. Winslow, in *Hospital Bulletin of the University of Maryland*.

HOOKWORM DISEASE IN MINES OF
CALIFORNIA

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The occurrence during the past year of several cases of hookworm disease in miners in California led me, under the auspices of the California State Board of Health, to investigate the subject for the purpose of determining whether or not the infection had become endemic in the mines.

While imported cases of hookworm disease are not infrequently observed in this state, sixty having been reported by me over five years ago,¹ its occurrence among miners had not previously been noted here. Attention was first drawn to the occurrence of the disease in Jackson, Amador County, by Dr. F. F. Sprague, and later by Dr. E. E. Endicott. Both of these physicians believed that the infection occurred in the adjacent gold-mines, but as the cases observed were all either in persons who had been exposed to infection in other parts of the world or in foreigners of not many years' residence here—Italians, Austrians or Cornishmen—many of whom we know are infected with hookworm before coming to this country, it was necessary to obtain more conclusive evidence before it could be considered that the disease had gained a foothold here. Further, the fact that the disease has not been reported as originating in any mines in the United States, made it appear that we were dealing, in all probability, with imported cases only.

In order to prove conclusively that the disease occurred endemically in a mine it would be necessary to demonstrate the larvæ in the soil from the workings, or to find the disease in a person who had not been exposed to infection elsewhere for at least seven years and preferably ten years. On account of the wandering habits of many of the miners, and the very small number of Americans employed, very few men were available for the purpose of such investigation.

In Mine 1, the results were as follows:

CASE 1.—F., American, native of California, never out of this state; health good except for occasional attacks of abdominal pain, due, it was believed, to chronic appendicitis. Ova of hookworm present; eosinophilia 15 per cent.

CASE 2.—M., American, native of California, never out of state; mining for past two years, always in this mine; health good. Ova of hookworm present; eosinophilia 13 per cent.

CASE 3.—K., nativity not known; not out of California during past forty-eight years; resident of Jackson for last seventeen years; health good except for eruption on leg extending over considerable surface, a typical ground itch. Ova of hookworm present; eosinophilia 12 per cent.

CASE 4.—N., native of England; resident of California for twenty-five years; employed in this mine for fifteen years; according to his own statement health had not been good for some time; shows evidence of moderate anemia. Ova of hookworm present in feces; blood not examined.

CASE 5.—L., nativity England; nine years in Jackson; health, according to his own statement excellent; anemia quite apparent, however. Ova of hookworm present; eosinophilia 5 per cent.

CASE 6.—F., Italian; eight years in California; five years in Jackson; unable to work for past five months on account of weakness. Ova of hookworm present; eosinophilia 12 per cent.

Specimens of earth were taken from various parts of the mine where conditions of heat and moisture were

suitable for the development of the parasite, and in one from a cross-cut at the 1,600-foot level hookworm embryos were demonstrated.

In Mine 2 it was impossible to obtain feces for examination. Larvæ of hookworm were demonstrated in specimens of soil taken from the workings.

In Mine 3 several cases were found, but none had been in California a sufficient number of years to be of any positive value for the purpose of this investigation. No examination was made of the workings of the mine.

EXTENT OF INFECTION

The men were looked over in mines 1 and 2 after they had finished work, and were bathing and changing their clothes. Evidence of the disease was everywhere to be seen. The peculiar color of the face, which is so often found in this disease, even when the blood shows but slight reduction in the hemoglobin, was observed quite generally. Quite a number showed moderate anemia, while occasionally it was quite pronounced. It should be borne in mind that we are now considering only those men who were able to work; those so ill that they were unable to work will be referred to later. Several cases of ground-itch were observed, the arms and hands being the most frequently affected parts.

On account of the difficulty of obtaining a sufficient number of stools to form an estimate of the percentage of infected persons in the mines, blood-smears were taken and the eosinophils counted with the following results:

MINE 1.—Specimens were taken from eighteen miners. Some men were selected who showed evidence of disease. In all examinations 100 cells were counted and Wright's stain, or Oliver's modification of it, was used.

Number of Patient.	Per cent. of Eosinophilia.	Number of Patient.	Per cent. of Eosinophilia.
1	13	10	13
2	24	11	21
3	17	12	9
4	12	13	10
5	18	14	18
6	7	15	3
7	15	16	20
8	13	17	11
9	5	18	12

Number 9 was referred to previously as an infected subject with nine years' residence in Jackson, so that the probabilities are that all of the eighteen are infected, except possibly Number 15, who shows an eosinophilia of 3 per cent. Stools were also obtained from the following on this list and all contained ova of hookworm: Numbers 4, 7, 8, 20.

Feces from eight individuals in this mine showed seven positive. The negative stool came from an assayer whose work until comparatively recently had been entirely above ground. The infection in this mine, it would appear, is close to 90 per cent.

MINE 2.—Men showing evidence of the disease were in some cases selected.

Number of Patient.	Per cent. of Eosinophilia.	Number of Patient.	Per cent. of Eosinophilia.
1	8	8	4
2	3	9	7
3	0	10	8
4	6	11	4
5	5	12	24
6	2	13	8
7	3	14	15

It was impossible to obtain stools from any on this list. The conditions in this mine were very good, there being less moisture throughout most of the workings than in the other mines. Yet from the appearance of the blood, ten out of the fourteen examined, or 70 per cent., should be looked on with suspicion.

1. California State Jour. Med., April and August, 1905.

MINE 3.—Blood was taken from the first eleven men who happened along. No selection was made in any case, with the following result:

Number of Patient.	Per cent. of Eosinophilia.	Number of Patient.	Per cent. of Eosinophilia.
1	5	7	20
2	11	8	14
3	7	9	0
4	14	10	15
5	6	11	5
6	14		

Here it would appear that all but one are infected, or over 90 per cent. In Number 10 and Number 11, the only ones on this list from whom stools could be obtained, ova of hookworm were found present. Of course it should be remembered in considering the increase in the eosinophils that such might be due to infection with other parasites, but in the examinations of all the stools that could be obtained, evidence of other parasites was generally lacking. In one case *Strongyloides stercoralis* was present, and in another, *Trichocephalus dispar*.

CONDITIONS IN THE MINES RELATIVE TO DEVELOPMENT OF THE DISEASE

1. *Temperature*.—It has been shown that in mines with a temperature below 70 F. the disease makes but little headway. In the mines of Jackson, in portions where the men are working, the temperature is usually kept, by forced draft, below 70 F., but in abandoned portions and adjacent cross-cuts, the only places where a man would be likely to deposit his excrement, the temperature was often as high as 80 or 90 F.

2. *Moisture*.—A sufficient amount of moisture was found in portions of all of the levels visited.

3. *Disposal of Excrement*.—Although there are rules in force against the contamination of the workings with feces, it was not very difficult to find evidence that these rules had been broken. The arrangement of tanks in the shafts for the use of the men is open to criticism and is believed to be one of the modes of infection.

ECONOMIC ASPECTS

There is no question but that the general efficiency of the men is noticeably impaired. At one mine, employing about 300 laborers, it was stated that a reserve of about twenty-five men had to be available to replace those who, on account of sickness, did not appear for work. Many of the men have to take time off now and again to recuperate. Several who were unable to work stated that when they arrived in Jackson they were perfectly strong and well. A large number of these men were encountered on the streets, some of them presenting marked degrees of anemia.

The greatest loss to the mine operators is occasioned by the large number of those moderately affected. In one mine a superintendent who was infected ascribed his somewhat poor physical condition to the results of an illness which occurred a couple of years ago. Another man occupying a responsible position had to be given a vacation every now and then on account of declining health. He presented a quite noticeable anemia, and on examination of the stools, showed a heavy infection. Any number of similar cases could be cited but these examples should be sufficient to show very clearly that the average miner infected with hookworm cannot do the work of a normal man. A loss of 20 per cent. in the efficiency of those infected would be a conservative estimate. That would mean in Mine 2, for instance, where over 300 men are employed at an average of about \$2.50 per day, estimating the number of those infected as low as 50 per cent., a loss of over \$20,000 a year.

When it is remembered that nearly 30 per cent. of all deaths in Porto Rico are due to hookworm disease, it is safe to say that directly and indirectly many have died from the infection contracted in these mines.

The danger of the disease being spread in the neighboring valley should be considered, especially as the sanitary arrangements for the disposal of sewage in the town of Jackson are very poor, and as many of the infected miners who are too ill to work in the mines, live on near-by farms until recuperated.

The extent of infection throughout the gold-mines of California can very readily be estimated. The conditions of heat and moisture necessary for the development of the larvæ are more or less the same in all of the mines and all employ the same class of labor. It is believed that it will be found that all of the mines of California are more or less infected, and that probably conditions will approximate those found in Jackson.

The same statement can be made for Virginia City, Nevada. While the mines of Sutter Creek, near Jackson, were not visited, cases which undoubtedly were contracted there were seen. The origin of the infection of the California mines undoubtedly extends back many years. It was probably introduced by laborers from Cornwall, Austria or Italy, in which countries the disease occurs extensively in the mines.

SUMMARY

It may be stated in summary that:

1. Hookworm disease is endemic in certain mines of California.

2. From 50 to 80 per cent. of those working in these mines are infected.

3. The infection undoubtedly is present in practically all of the gold-mines of California, and in those just over the border of Nevada.

In conclusion I wish to express the belief that hookworm disease is endemic in many mines in various parts of the United States. In many of the so-called cold mines, portions are found where the temperature is constantly high and moisture is present. In all probability most of the mines of this country have been exposed to infection, for in nearly all of them may be found Hungarians, Austrians, Italians or Cornishmen, some of whom are certain to have brought the infection with them from the mines of their countries.

240 Stockton Street.

REPORT OF A CASE OF SPLENIC ABSCESS

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This case presented a variety of symptoms which, as far as the spleen itself was concerned, were absolutely negative and it was not until autopsy that a large splenic abscess was discovered. In view of the extreme rarity of this condition and of the lack of symptoms indicating splenic trouble it is believed a full report of the case would be not only instructive but of historical interest.

History.—M. P. V., fireman first class, U. S. Navy, was admitted to U. S. Naval Hospital, Philadelphia, March 2, 1910, with a diagnosis of appendicitis. (Case paper No. 67.) The patient was aged 29 years and 2 months, unmarried and denied syphilis; did not use alcohol or tobacco; had always been in robust health, and, about a year previous to admission,

had two months of tropical service. Although the skin had been noticeably bronzed since childhood nothing indicating gall-bladder trouble could be elicited. A careful inquiry as to gastro-intestinal disturbances and family history was also negative. Heart, lungs and kidneys were apparently normal.

Examination.—On admission to this hospital there was marked rigidity of right abdomen and extreme tenderness over the appendix; temperature 100.4 F.; pulse 78, regular and full; respiration normal; tongue coated and bowels costive. The attack began with epigastric pain and nausea on the day before admission, the pain in a few hours being centered over the appendix; patient vomited before reaching the hospital; white count 13,000. An immediate operation was decided on.

First Operation.—The abdomen was opened by the Battle incision and the appendix found greatly distended, with a small gangrenous perforation at its base, through which fecal matter had escaped. There was also a gangrenous spot on the cecum surrounding the base of the appendix. The appendix was removed, and in addition the gangrenous spot on the cecum was surrounded and buried by a purse-string suture, over which a continuous Lembert suture was introduced. The parts were dried and cleansed by mopping with gauze and a cigarette drain of iodoform gauze brought out through the wound. A rubber drainage tube was passed down into the pelvis and the wound closed with the exception of a small opening for the drains. The patient was placed in Fowler's position and Murphy's proctoclysis started.

Subsequent Course.—On March 10 there was a free discharge of pus from the cecal drain which had a fecal odor. This gradually lessened and the patient passed through an uneventful convalescence with the exception of the development of a small abscess in the rectus muscle, the result of a stitch becoming infected. On March 24 the sinus had completely closed, one of Bier's hyperemia cups being used for five days.

April 1, 1910, the patient had a slight chill in the afternoon followed by profuse sweating. The temperature ranged from 99 F. to 103 F., and a slight pain developed over the gall-bladder region, but the liver dulness was not increased. For seven days after this there was an afternoon chill, fever and sweat, the temperature reaching usually 104 F. Daily white counts never ran above 8,000 and numerous differential counts were normal. The test for iodophilia was negative at this time as were also the urine, sputum and feces. The tongue was thickly coated and anorexia was marked. Repeated blood examinations were negative for the malarial parasite and several Widal reactions were also negative. The Cammidge reaction was negative, as was also a culture of the blood. Iodophilia now began to be positive and patient developed a slight cough, though no lung involvement could be made out. The pulse at times reached 100 but was usually between 70 and 80. Although there was no pain or tenderness in the loin or operation scar the latter was incised and probed but nothing unusual found. The pain over the gall-bladder region increased somewhat and at this time there was quite a perceptible deepening of the bronzed condition of the skin. The lungs and entire abdomen were repeatedly examined but, with the exception of the tenderness over the gall-bladder region, nothing abnormal could be found. At no time could the spleen be palpated nor was there ever the slightest pain elicited by the deepest pressure in this region.

Second Operation.—April 8, a Bevan incision was made over the gall-bladder and the latter found to be imbedded in a rather dense mass of adhesions and these when liberated disclosed a very much thickened and dwarfed gall-bladder. This was incised and explored, as were also the ducts, but no stones were found. The head of the pancreas seemed to be enlarged and harder than normal. The gall-bladder was drained with a Mixer tube and for two days there were no chills or fever, but at the end of that time the pyemic condition began again. The gall-bladder drained well but the symptoms were practically the same as before operation with the exception of the development of a systolic murmur heard loudest at the base. April 31 an aspirating needle was introduced in the eighth intercostal space in the axillary line and the liver was needled in five different directions without locat-

ing pus. The symptoms of marked sepsis continued and the patient finally died of exhaustion on June 9.

Necropsy.—Cutaneous surface was deeply bronzed; emaciation marked; adhesions in right iliac fossa broken up and revealed small, firm, smooth scar in cecum at the site of the excised appendix; ascending colon dissected up to right kidney pouch with no indication of any previous inflammatory condition; gall-bladder firmly adherent to abdominal wall at site of operation wound. On palpating in left abdomen it was found that a mass of small intestine and omentum was closely adherent over the spleen, which could hardly be felt through the distended intestine. The intestinal adhesions were carefully broken up, showing the spleen to be about two and a half times as large as normal and closely adherent to the stomach and diaphragm. In breaking up the diaphragmatic adhesions a large pus sac was opened in the discolored, friable spleen. This sac was located in the center of the spleen and was about the size of a goose-egg. Two smaller abscesses about the size of a pigeon's egg, were located at the periphery. The splenic vein was thrombosed up to the vena cava. On sectioning the liver, which was slightly enlarged, there was to be seen widespread fatty degeneration, with here and there small necrotic spots about the size of a pea. Both ventricles of the heart were dilated and the left ventricle very much thinned. There were to be seen greenish-yellow nodules and patches on the flaps of the mitral valve and left ventricular endothelium, showing the presence of endocarditis. Lungs and pleurae were apparently normal. The head of the pancreas was enlarged and nodular. Both kidneys were slightly enlarged and showed minute areas of fatty necrosis. The small intestine was blanched and contained a small quantity of tenacious greenish yellow material.

The post-mortem findings clearly indicated a widespread pyemic condition with a primary focus in the spleen, and it would seem that the lesson to be learned from the history and findings in this case is that the splenic condition could only be diagnosed by exclusion. Systematic writers on this subject invariably refer to pain in the left side high up. At no time was there the slightest pain in this region, nor could the spleen be palpated. It is believed that the splenic abscess resulted from the gangrenous pyogenic condition of the appendix and cecum. Had there been the slightest suspicion that the spleen was diseased a splenic puncture would have been done. It is further believed that the splenic puncture should have been done shortly after the gall-bladder operation, in view of the fact that everything but the spleen had been excluded. Had this been done the abscess in the spleen could have been drained posteriorly with a possible chance of saving the patient. Of course this latter conjecture is not free from the criticism that the patient could not have lived any way on account of the pyemic condition which was in all probability present at that time, but there is no question as to the fact that at least the patient's chances of recovery would have been greatly improved had the abscess been located and drained, and of course the sooner this was done the more favorable the prognosis.

IDIOSYNCRASY TO ASPIRIN

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In THE JOURNAL I recently read a communication¹ in regard to idiosyncrasy to aspirin, of which I had an almost parallel case on November 19.

On the advice of a friend a young man took a five-grain tablet of aspirin for headache. In about one hour, still suffering, he took another, and then lay down on a cot in his office. In a few moments he arose and remarked to some one present,

1. Berl. klin. Wehnschr., 1893, No. 19.

"I feel mighty queer, and can hardly see." He then looked in the mirror and exclaimed, "What is the matter with my face? I am going to a doctor!" He walked nearly two blocks to my office, and in attempting to walk up to the door (just three steps up from the pavement) fell, and then had to be assisted into my office. He hurried in without waiting to knock, and in a voice which indicated great distress, exclaimed, "Doctor, some one has poisoned me." This was probably about half-past one, and about an hour and a half after taking the first tablet. The mucous membranes of his eyes, nose and mouth were very edematous. The eyelids and lips were everted and swollen to twice the normal size, the conjunctivæ very much congested; the patient could hardly breathe through his nose at all. Tonsils and uvula were in a state of congestion, the articulation was very indistinct, and when the patient attempted to raise his voice to a higher pitch, it had a peculiar metallic sound, which would end with a muffled tone. The veins in his temples and throat were knotted, and in places were standing out like hard cords. I found his circulation 136, respiration 24, afterward going down to 12, temperature normal. His face was greatly flushed, and this, with the eversion and swelling of eyelids and lips, made him a ghastly-looking object.

I made him lie down on a cot, and as he seemed to have considerable trouble in breathing, removed his collar and opened his shirt. I had the nurse give him a hypodermic injection of digitalin, bathe his face, neck and head with hot water, and apply continuous hot towels, and keep him quiet. Later, as he complained of great pain in the shoulders and neck, I also applied continuous hot pack to those parts, and, as the circulation remained weak, ordered hypodermic of strychnin. At half-past two he suddenly fell into a profound sleep; his circulation slowed down and became stronger, but respiration continued very slow, and seemed almost to stop at times. His slumber was so profound that the removal and the replacing of the hot towels did not seem to disturb him at all. I allowed him to sleep until nearly four o'clock, when I awakened him and had him conveyed to his home, which was about three miles in the country. He stood the trip all right, and after getting into bed he almost immediately fell asleep again. In about three days the edema had disappeared from face, nose, eyelids and mouth, but the throat remained irritated for at least ten days longer, and the patient was slow in regaining his strength.

The report of H. E. W. and this case show that some have a decided idiosyncrasy to this drug, and that it should be listed as one of the dangerous drugs, which should not be retailed indiscriminately to the laity.

THE USE OF CYLINDRICAL GAUZE AND COTTON DRAINS IN DISCHARGING EARS

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Aural surgeons must have witnessed the efficiency of gauze drainage in the ear following mastoid operations. The pus is constantly carried by the moist gauze packing in the external auditory meatus to the preferably wet gauze protective dressing. The solution with which this dressing is moistened should not be strongly antiseptic or irritating. Normal saline is excellent, although to encourage osmosis I sometimes employ a heavy sterile solution of magnesium sulphate. The packing in the auditory canal should be carried down to the tympanic membrane. There should not be any space left to serve as a reservoir for pus. This obliteration of space may be readily accomplished by placing over the outer end of the auditory canal a few folds of the end of a narrow 1 inch or 2 inch strip of gauze packing which has no

loose threads on its margin, and then with a rough or screw-ended probe pressing the gauze directly in, until it touches the drum head. If a smooth probe is used or no fold made in the gauze the probe is likely to slip through the single layer of gauze, irritating the canal or injuring the ear-drum instead of carrying the gauze before it.

In acute or chronic otorrhea, a gauze drain is also very useful, but requires changing once or twice a day, which must be done by the surgeon, since such a drain cannot be inserted safely by untrained attendants. A few aurists, in certain cases, advocate gauze drainage but the patient must be in a convenient hospital or make frequent visits to the aurist's office which in practice is likely to be either too inconvenient or too expensive, or both. To overcome these objections I employed for some time a drain which my office assistants made by rolling a narrow strip of gauze doubled on itself on the end of a sterile toothpick, giving it stability by wrapping its central part with thin gutta-percha gummed together by any unirritating sterile ointment. It presented the appearance of a diminutive cigarette, $\frac{3}{4}$ to $1\frac{1}{4}$ inches long, about $\frac{1}{8}$ inch in diameter, with the gauze projecting about $\frac{1}{8}$ inch beyond the surrounding gutta-percha and with a toothpick sticking in the unravelled end of the gauze. The drain was made loose on the toothpick before being introduced. After its partial introduction the toothpick was withdrawn and its opposite dull end was used to press the gauze drain well into the ear. The outer end of the canal was then packed with gauze to help retain the drain in place and to absorb any excess of discharge when there was more than the drain could contain. Gauze is much more serviceable than cotton for this purpose.

Similar drains are now being manufactured. At first drains made altogether of gauze tightly wrapped by machinery were tried, but they were too stiff, hurting the patient on introduction. Drains made wholly of cotton were not stiff enough to be introduced. The cylindrical gauze and cotton drains which I recommend consist of cylinders of cotton wrapped in gauze, which is both soft and pliable, so as not to injure the delicate tissues of the ear, although sufficiently firm so that they can be readily introduced. They are supplied sterile, ten in an envelope, each six inches long. They may be cut by sterile scissors to any desired length, depending on the depth of the external auditory canal, and are supplied, of proper length, to the patient, in dry sterile two-dram vials or wrapped in sterile gauze. These drains are also very useful in draining small abscesses or cavities anywhere, and are easily introduced. They may be used any desired length. Several, side by side, may also be employed for drainage, as in some mastoid wounds.

They are easily introduced into and removed from the external auditory meatus by any simple forceps. They may also be introduced by first impaling them on the end of a sterile toothpick, using the latter as a handle. When there is much discharge I have the patient keep one in the ear day and night, putting a fresh one in every morning and evening; but after the discharge is much lessened it is employed only at night. After its removal, if there is any excess of discharge, it should be wiped away with cotton on the end of a sterile toothpick. Any drops which the aurist may wish to employ, *e.g.*, 5 or 10 per cent. phenol in glycerin, compound tincture of benzoin, boroglycerid solution, or boric acid and alcohol solutions in different strengths, may be warmed and poured into the upturned

ear and allowed to remain for several minutes, when the excess may be removed and a fresh drain introduced. In order to protect the skin and prevent exco-riation by the discharges, once or twice each week a small amount of some ointment, *e. g.*, zinc oxid or calomel, 2 per cent., may be smeared by a cotton-wrapped applicator on the outer two-thirds of the canal, or a very little may occasionally be placed on the sides of the drain but not on its ends.

Dry gauze will absorb more discharge than wet gauze, but the latter, especially if a heavy salt, *e. g.*, magnesium sulphate, has been dissolved in the water, will encourage free osmosis and more readily absorb and carry away the discharge. If the outer gauze pad retainer is used moist, as I think in certain severe cases it should be, the whole should be covered by a large thick dry gauze pad to protect the ear from changes in temperature and infection from without. This pad may be readily fastened in place by a binder similar to Beck's, made of gauze with three tapes, one over the head meeting the others, which are first tied around the neck.

I think that the drain is particularly serviceable in acute cases and in chronic cases with much discharge. When the pus is carried away from the inner end of the auditory canal drainage from the middle ear is encouraged. The gauze pads over the outer end of the drains should be removed whenever saturated with pus, and in many cases the drainage is so free that they must be changed very frequently. I have never experienced any trouble in having patients use the drains, and have had no accidents with them. I do not think that more granulation tissue has appeared than in corresponding cases with inferior drainage, if as much.

500 Everett Building.

MUST THE TINCTURE OF GUAIAEC BE FRESHLY PREPARED?

HORACE W. SOPER, M.D.
ST. LOUIS

Since Weber's modification of the guaiac-turpentine test for occult blood in the feces and stomach contents,¹ every writer on this subject has uniformly insisted on using only the freshly prepared tincture of guaiac. Many have advised that the interior of a fragment of guaiac should be selected. During the past two years, I have experimented with older tinctures, controlling the reaction by the freshly prepared tincture. To my surprise, I found no evidence of deterioration; in fact, I often observed a more sensitive reaction from the older tinctures.

The method of preparing the tincture is as follows: Rub the guaiac resin in a mortar to a fine powder, slowly adding 95 per cent. alcohol. Be sure to have a residuum of guaiac in the mortar, thus insuring a strong tincture. Filter and keep in a glass-stoppered bottle. Dilute a portion of this stock tincture with 95 per cent. alcohol (tincture 1 part, alcohol 5 parts) and keep in smaller glass-stoppered bottle for daily use.

The stock tinctures used varied in age from two months to eight months. The diluted tinctures were kept only several weeks, but never showed any loss in the delicacy of the reaction.

The advantages secured by this method are obvious. The daily preparation of the tincture is a nuisance;

moreover, the guaiac resin contains many insoluble particles. Therefore the daily prepared small quantity of the tincture must vary much in strength. The tincture made in larger quantities is more uniform and in my experience is more sensitive and does not quickly deteriorate.

AN EASY AND PAINLESS METHOD OF REMOVING ADHESIVE PLASTER

E. J. G. BEARDSLEY, M.D.

Chief of Out-Patient Medical Department of the Jefferson Medical
College Hospital
PHILADELPHIA

Such a frequent and simple procedure as the removal of adhesive plaster from the skin of a patient is not infrequently accompanied by considerable pain and discomfort. Especially is this true if the plaster has been placed over hairy surfaces, or if the hair has grown subsequent to the application of the plaster. The usual methods of aiding the removal of the plaster by the use of benzin, alcohol and peroxid of hydrogen are not particularly effectual while, in themselves, these agents often add to the patient's discomfort.

I discovered by accident that oil of wintergreen when applied to adhesive plaster removed completely the adhesive elements in a very short time and since that time I have found this agent a most useful one for this purpose. It is necessary only to use a small amount of the oil, which is applied directly to the plaster and easily spreads itself throughout the adhesive material. As far as I am aware this agent is not in common use for this object and as the aim of a physician or surgeon is to relieve instead of causing pain it seems well to call the attention of the profession to the value of the method. When extensive areas of plaster are to be removed the application of an ointment of *adepts lanae hydrosus* with 10 per cent. of oil of wintergreen incorporated is even more useful than the oil alone.

THE TREATMENT OF EXOPHTHALMIC GOITER WITH SPECIFIC ANTISERUM

ALONZO ENGLEBERT TAYLOR, M.D.
PHILADELPHIA

Several years ago I prepared what may be termed anti-thyroid serum, according to the directions of Beebe, and had the serum given a trial in the treatment of exophthalmic goiter, with negative results. The results were not published at the time on account of the feeling that possibly the negative character of my results might have been due to slight variations in technic as compared with that of Beebe, and I did not wish to cast a doubt on positive work of this nature so long as the subject was in a state of active experimentation. Since that time negative results have been noted by several observers and it is felt that my results should be published.

The work was done in the University of California. The preparation of the thyroid protein was done strictly according to the published procedure of Beebe. The material was fresh thyroid glands removed by surgical operation from patients with subacute active exophthalmic goiter, the glands being used fresh from the operating-table. The animals selected for immunization

1. Berl. klin. Wchnschr., 1893, No. 19.

were Belgian hares, for reasons connected solely with the internal administration of the animal house. These animals were subjected to increasing doses of the thyroid protein, until the serum of one of them on being tested gave a good precipitation with the material used in the immunizations. The thyroid protein is quite toxic to rabbits. We lost several, and all lost weight during the period of immunization. The total final number of rabbits, eight in all, were bled to death and the serum carefully collected, freed of corpuscles and filtered through a thin infusorial filter. It was then tested for its specific reaction, which at 1 to 10 gave a large precipitation within a few minutes. From this point I made a radical change in the technic. I was not able to bring myself to feel that it was safe to dispense this native serum, on account of the possibility of the presence of tetanus spores, without chemical sterilization. I therefore added trikresol to it precisely as is done in the manufacture of diphtheria antitoxin, and allowed the serum to "lager" for six weeks. When it was tested again for its specific reaction at the end of this time, I was able to observe no change. This serum was then kept at low temperature until dispensed.

Dr. P. K. Brown, of San Francisco, tried this serum in several cases of active exophthalmic goiter, with absolutely negative results. Not only did the serum produce no change or amelioration of the symptoms or signs of the disease, but large amounts of the serum could be injected without the causation of any results whatever. In other words, the serum was neither curative nor toxic.

Observations on the serum were occasionally made after the determination of its negative value in the treatment of exophthalmic goiter. The specific reaction gradually decreased, and finally within a year after the serum was prepared, it could no longer be elicited. Evidently the precipitating protein is denatured on standing, probably through a reaction of hydrolysis.

4522 Locust Street.

CHRONIC INFLUENZAL RHINITIS PROMPTLY IMPROVED BY VACCINE THERAPY

CHARLES C. GRANDY
CHICAGO

The following case of chronic influenzal rhinitis seems to merit report because of the prompt and decisive curative effect of inoculations with heated influenza bacilli.

About four years ago the patient, a physician aged 54, had an attack of influenza and ever since there has been a more or less profuse discharge from the nose, at times so abundant that several handkerchiefs would be soiled during the forenoon, even when nasal washes were frequently used. At the time of the first examination (Aug. 4, 1910) there was a very profuse mucopurulent or purulent nasal discharge which contained many polymorphonuclear leukocytes and some bacteria, including a Gram-staining coccus and a Gram-negative bacillus. On plates of blood-agar (human), the discharge gave rise to some large white colonies composed of staphylococci, and surrounding these, many small dewdrop-like colonies which were difficult to see and which were composed of bacilli. Pure cultures were obtained on slanted blood-agar. The bacillus was not motile and was regarded as an influenza-like bacillus because it was small, Gram-negative and grew in symbiosis, forming minute colonies. A few days later, plates were again made from the discharge with practically the same results. At this time, the patient's opsonic index for the bacillus was 0.3. Contrary to expectations, this bacillus was not subject

to much spontaneous phagocytosis,¹ and no difficulty was experienced in estimating the opsonic index. A vaccine was prepared from the bacillus, by heating at 56 C., for thirty minutes, and 12,000,000 bacilli injected hypodermically without any apparent effect, except that the opsonic index now became normal; on the second day the index was 3; on the third day 5; and on the fourth day 12. Four days later 50,000,000 bacilli were injected and on the following day the patient felt sick and could not eat or sleep; the discharge did not seem quite so abundant and smears showed that leukocytes had taken up a great many bacilli; very few cocci were present in the smears, and on plating a loopful of the discharge on blood-agar, only three colonies of cocci developed, as compared with a large number of colonies of the influenza-like bacillus. Six days later the discharge as ordinarily obtained did not contain any bacteria; on sneezing, however, the material produced contained many bacilli, most of which were inside of leukocytes, some leukocytes being crowded to the utmost with bacilli. The patient was now given an injection of 100,000,000 bacilli, which did not cause any symptoms, and on the following day the nasal discharge had diminished very much. From now on the discharge decreased daily and in two weeks it had practically ceased.

The patient went to his home in Colorado August 28, and the injections could not be continued regularly after that time. In a letter dated November 4 he wrote that he had been in the best of health, but that there was still a little discharge.

1743 West Harrison Street.

RÖNTGENOGRAPHIC EXAMINATION OF THE BLADDER

JOHN M. GARRATT, M.D.
BUFFALO

Considerable progress has been made of late in the diagnosis of displacements of the stomach and large intestines and in demonstrating irregularities in their walls by means of the Röntgen rays, following the ingestion or injection of bismuth solutions. It has occurred to me that distention of the urinary bladder with bismuth solution and immediately taking a Röntgenograph would be of value in outlining its (a) position, (b) size and (c) conformation and that irregularities in the vesicle wall as, (d) projection of tumors, (e) diverticula or pouching and (e) anomalies could all be diagnosticated and the approximate size and shape of the deformity would be shown in a permanent record.

It is not always easy or advisable to use the cystoscope in certain diseases of the bladder, and in some forms of prostatic hypertrophy it is practically impossible to insert the instrument; while in some instances it would be an absolutely dangerous procedure. In most cases there is no objection to it, and it is easy to insert a sterile catheter through which passes the solution used to bring about the distention. The process is completed by taking the Röntgenograph.

TECHNIC

Pass a sterile, soft catheter and irrigate the bladder with boric acid solution. When the washings come away clear, measure its capacity, with the bladder empty, distend with the measured quantity of the following solution:

R	Gm. or c.c.
Bismuthi subcarbonatis	50.
Kaolini	250.
Aquæ destillatæ	1000.

(Formula of Dr. Haenisch of Hamburg, Germany, and used by him in examination of the large intestines.)

1. Tunnicliff and Davis: Spontaneous Phagocytosis of Fusiform Bacilli and Influenza Bacilli, Jour. Infect. Dis., 1907, iv, 66.

Take at least two Röntgenographs, one in the ventral recumbent position with the anode centered over the sacrococcygeal articulation; this should be a standard exposure for the bladder, always preserving the same distance from anode to plate. Center as above and a Röntgenograph will result from which reliable comparison as to size, position and conformity can be made. The second exposure can be taken at any desired lateral or dorsal angle. The proper angle found, stereo-Röntgenographs would be of great value.

The bismuth solution is well borne by the bladder. In one patient with cystitis it was the only injection which he could retain with comfort. The solution can be removed by irrigation after the exposures have been made, or allowed to pass off naturally. The danger of bismuth poisoning from absorption is practically nil.

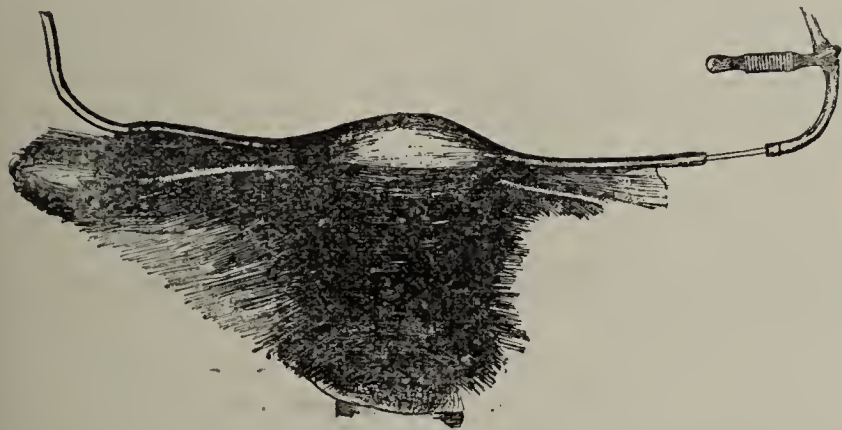
URETEROTUBAL ANASTOMOSIS

A PRELIMINARY REPORT

AXEL WERELIUS, M.D.
CHICAGO

Owing to the rather discouraging results following partial excision of bladder for malignant disease, the complete removal of the organ is, as a rule, the only procedure that holds out any hope of lasting cure. The all-important problem in such radical work is, of course, to establish an outlet for the urinary secretion, and one that combines the greatest insurance against ascending infection with the least annoyance to the patient.

Several more or less ingenious methods have been devised. Watson proposes preliminary nephrotomy and permanent drainage through the loin. This method may afford fairly good protection against kidney infection, but must be frightfully annoying to the patient.



Ureterotubal anastomosis.

Maydl's¹ plan of ureteral implantation into the intestine has been used. This method, or its modifications, originally devised for exstrophy of bladder, permit of control of urinary secretion, and would be excellent were it not for the great danger of ascending infection. The death-rate from this source has been 50 per cent. This is higher than when used for its original purpose, as in exstrophy of bladder, from long exposure to the exterior, ureters have acquired some degree of immunity to ordinary types of infection. The danger of infection in above operation is not only immediate, but threatened at any subsequent enteritis.

Pawlik² implanted the ureters into the vagina, Sonnenberg³ into the urethra and Rovsing⁴ with others,

left ureters in the skin opening, all with good immediate results.

Thus it seems that operations that aim to give the patient the greatest comfort are also associated with the greatest danger. The genital system, closely related as it is to the urinary apparatus, both in the early embryo and throughout life, should, it seems, be the ideal outlet for the urinary secretion. Through this route secondary infection ought to be reduced to a minimum. The only drawback is, of course, lack of control, but this is somewhat counteracted by the favorable location for wearing of a urinary receptacle.

Working along the above theory, I am now endeavoring to anastomose ureters with the tubes, as in the accompanying illustration and also to implant them into the uterus. The immediate results in dogs seem very promising. Besides a trial dog, thus far only two dogs have been used of a coming series.

Dog 1.—Brown and white, large bitch. Operation, January 4. Anesthesia, ether. The ureters were dissected up and cut off close to the bladder and distal end tied. Bladder was left intact. Both tubes were then cut off about 4 cm. from the uterus and proximal end tied. A through-and-through purse-string suture was then inserted in the distal end of the tubes, into which the ureters were drawn, as in the illustration, and the purse-string lightly tied around the tubes and reinforced by two interrupted sutures.

Dog 2.—Grayish-white bitch. Operation, January 9. Same technic as above. Both dogs are so far doing well, passing urine through the uterus and vulva.

The trial dog mentioned above was very small, with minute ureters, and consequently, very difficult to operate on, especially as the operation had not been thoroughly planned. Owing to recent pregnancy there was a great disproportion between the tubes and ureters, the caliber of tubes being many times larger than that of the ureter. In making the anastomosis, I foolishly used interrupted sutures, which made the union very imperfect. The dog died on the sixth day, urine having leaked at the anastomosis.

It is, of course, too early to report any results or give any conclusions, as the work has just begun, but the operation seems feasible, at least in dog.

1230 Sixty-Third Street.

THE FUNCTION OF THE CHORIOID PLEXUSES OF THE CEREBRAL VENTRICLES AND ITS RELATION TO THAT OF THE PITUITARY GLAND *

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CINCINNATI

The secretory organs for the cerebrospinal fluid are the chorioid plexuses of the third, fourth and lateral ventricles. These are highly vascular projections of the pia mater into the ventricles, covered with villous-like projections about 1 to 2 mm. in diameter. Under the microscope these villi are seen to be made up of a number of secondary villi about 0.25 mm. in diameter, which again show grape-like projections. Through the center of the villi run comparatively thick-walled blood-

1. Maydl: *Wien. med. Wchnschr.*, 1894, Nos. 25-29; 1893, No. 28.

2. Pawlik: *Wien. klin. Wchnschr.*, 1891, xli, 1814, 1815.

3. Sonnenberg: *Verhandl. d. Deutsch. Gesellsch. f. Chir.*, 1881, vol. x, No. 11.

4. Rovsing: *Hospitalstidende*, 1907, xv, 709.

*Read before the Cincinnati Neurological Society, and the Cincinnati Society for Medical Research, Jan. 5, 1911.

*For reasons of space, part of the illustrations are omitted. All appear in the author's reprints.



Fig. 1.—Dec. 21, 1910. Dog, 6 kilos; ether anesthesia. Jugular injection at I, of 1 c.c. extract of dog chorioid. Uppermost line, timer marking seconds; second line, blood-pressure; third line, respiration.

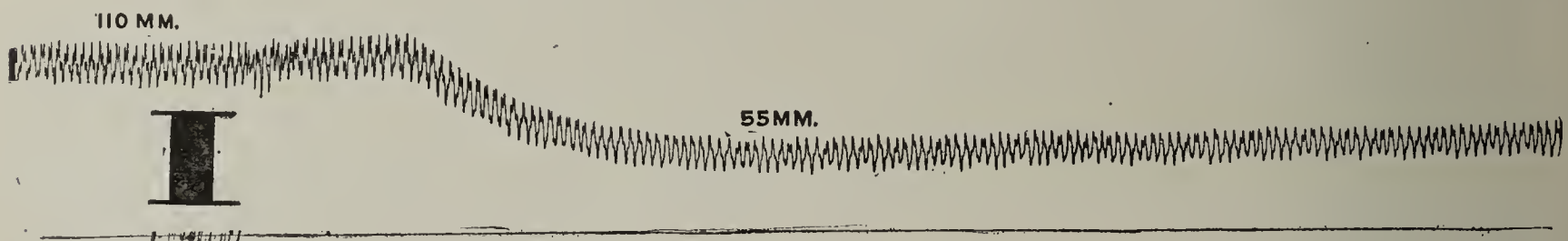


Fig. 4.—Dec. 28, 1910. Dog, 12 kilos; ether anesthesia. Jugular injection, at I, of 12 c.c. cerebrospinal fluid from a patient with cerebral edema of traumatic origin. Lines as before.

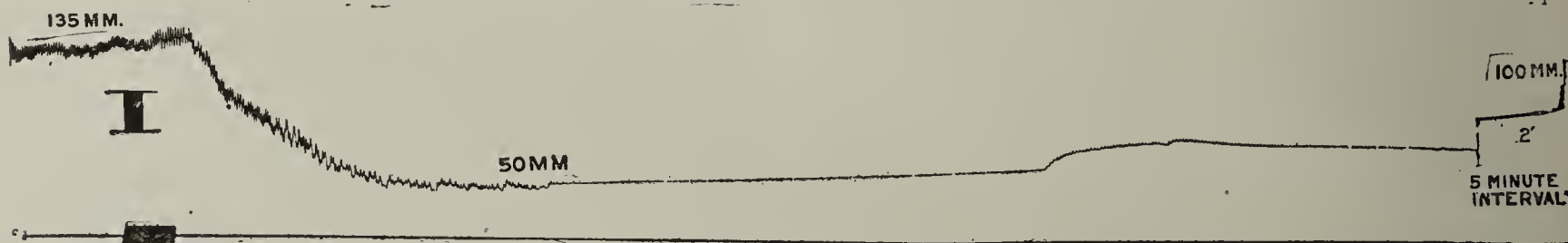


Fig. 6.—Dec. 31, 1910. Same dog as in Figure 5. Injection, at I, of 10 c.c. cerebrospinal fluid from same case (Fig. 5) of delirium tremens. Lines as before.

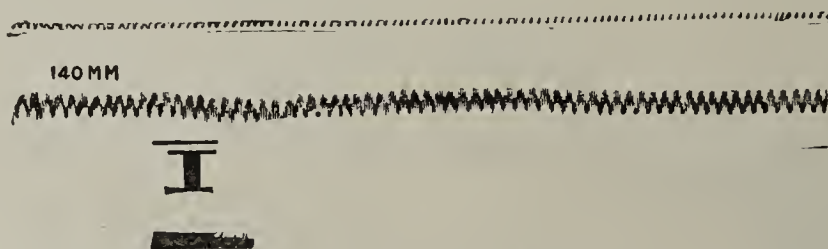


Fig. 7.—Jan. 3, 1911. Dog, 6 kilos; ether anesthesia. Jugular injection, at I, of 30 c.c. cerebrospinal fluid from an individual recovering from mild attack of delirium tremens. Lines as before.

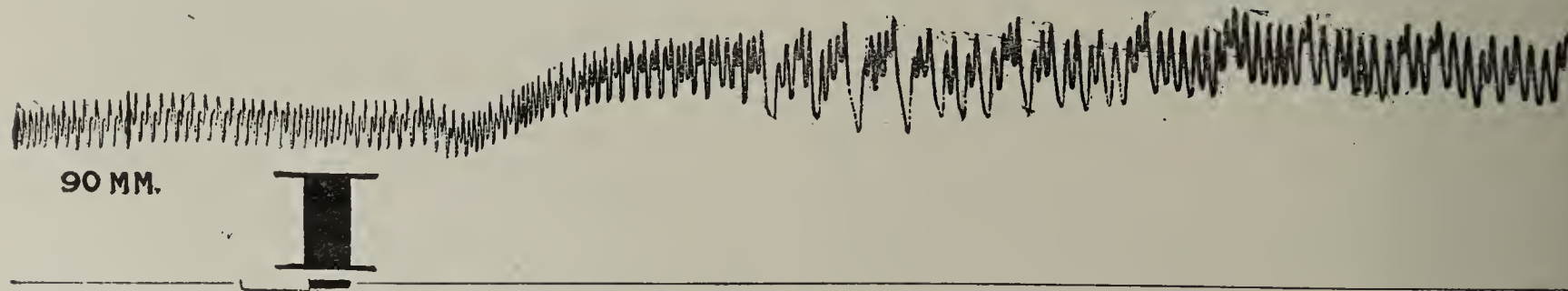


Fig. 8.—Dec. 10, 1910. Dog, 11 kilos; ether anesthesia. Jugular injection, at I, of 0.75 c.c. pituitary extract. Lines as before.

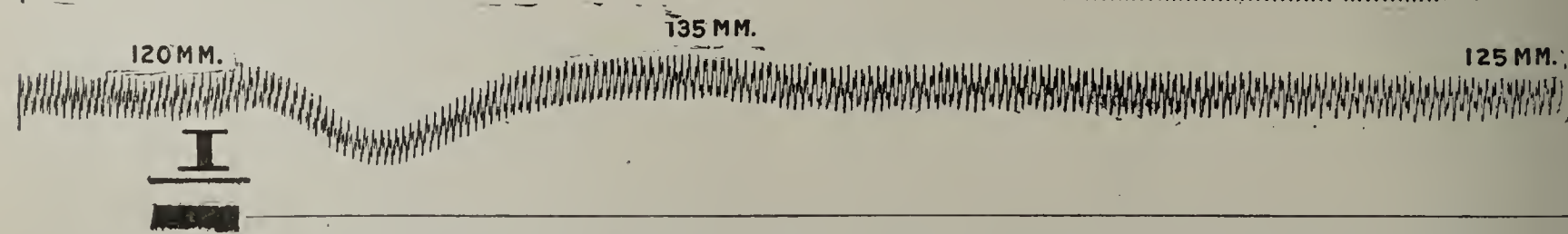


Fig. 9.—Dec. 30, 1910. Dog, 12.5 kilos; ether anesthesia. Jugular injection, at I, of 1 c.c. extract of human chorioid plus 1 c.c. of pituitary extract. Lines as before.

vessels, giving the entire organ a highly vascular appearance. The connective tissue of the villi is that of the pia mater. Covering the villi of the plexuses is a layer of large spheroidal cells, in each of which may be seen, in addition to the nucleus, yellowish granules. These cells are probably the secretory cells of the organ. The appearance of the plexuses strongly suggests an inverted gland which, instead of pouring its secretion into a series of ducts, empties directly into the ventricular system of the brain.

If one strips the chorioid plexuses from both the lateral ventricles of a dog recently killed by bleeding, and rubs them up in 2 c.c. of normal saline solution and injects the filtrate into the jugular vein of another

a man 35 years of age, five and one-half hours after death from pneumonia.

Extracts made from the chorioid plexus of the fourth ventricle produce the same reaction.

The reaction exhibited in Figure 3 is independent of the action of the vagus nerves, since the same effect is obtained when both vagus nerves have been divided.

The thought suggested itself that possibly in certain cerebral affections, particularly in such as were associated with hypersecretion of cerebrospinal fluid, the fluid might contain an excess of this depressant evidently secreted by the chorioid plexuses. Accordingly experiments were made with cerebrospinal fluid obtained by lumbar puncture in three such cases.



Fig. 4, continued.

dog, it will be found that this extract causes a marked fall in the blood-pressure. This effect was found to be constant in ten experiments.

Figure 1 is from a tracing of such an experiment. The blood-pressure was obtained by connecting the carotid or femoral artery of the animal with a mercury manometer. The respirations were recorded by means of a Paul Bert pneumograph connected with a Marey tambour, so arranged that the up-stroke represents inspiration, the down-stroke expiration. The time of injection was recorded by an electric signal. The injection was made into the jugular vein. In all experiments the animals were under light ether anesthesia administered through a tracheal tube. This animal received 1 c.c., or half the total extract made from the chorioid plexuses of the lateral ventricles of another dog killed by bleeding. The drop in blood-pressure, which in this experiment was preceded by a slight momentary rise (not constant), began fifteen seconds after the beginning of the injection, reached its maximum (that is, 50 mm.) twenty-eight seconds after the beginning of the injection,

Figure 4 is a tracing obtained from a dog into whose jugular vein were injected 12 c.c. of cerebrospinal fluid obtained by lumbar puncture from a patient with edema of the brain following a blow to the head producing a subtentorial hemorrhage. It will be seen that the injection caused a marked (55 mm.) and prolonged fall in blood-pressure, followed by an exceedingly slow and incomplete recovery. The cerebrospinal fluid in this case evidently contained a great excess of the "chorioid depressant."

Figure 5 is a tracing obtained from a dog into whose jugular vein were injected 5 c.c. of cerebrospinal fluid drawn from a marked case of delirium tremens. This fluid was much more depressant than that from the previous case.

The injection of 10 c.c. of the same fluid fifteen minutes later into the same dog produced a most violent and prolonged depression, from which the animal incompletely recovered only after an interval of eight minutes. This is shown in Figure 6.

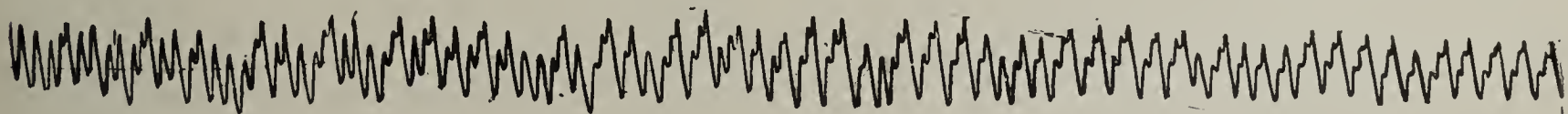


Fig. 8, continued.

tion, and returned to within 5 mm. of the original pressure in two minutes and twenty-five seconds. The rate of the heart-beat was apparently unchanged. The respiration was increased in rhythm from 40 to 60 per minute. Extracts made from the chorioid plexuses of the human brain show the same effects in even smaller doses.

Figure 2 is a tracing obtained by injecting into the jugular vein of a dog 1 c.c. of an extract made by rubbing up the plexus from one lateral ventricle in 10 c.c. of normal saline solution. The brain was removed from

Figure 7 is a tracing obtained by injecting 30 c.c. of cerebrospinal fluid drawn from a subject who had recovered from delirium tremens. There was but little depressant effect, a fall in blood-pressure of not more than 5 mm., which was quickly recovered. The individual from whom this cerebrospinal fluid was obtained had had a mild attack of delirium tremens which had lasted only forty-eight hours, and, at the time the fluid was withdrawn, the patient's pulse was normal again and the attack of delirium tremens had disappeared.

The patient died from whom the fluid used in Experiments 5 and 6 was obtained, and at autopsy a marked cerebral edema was found. The ventricles were filled with fluid which, when injected into dogs, was markedly depressant.

It also occurred to me that if such a depressant were secreted by the chorioid plexuses and poured out into the ventricular system it would meet there whatever was given off by the pituitary body, and it seemed wise to determine, if possible, what action these two principles might have on each other. As has been abundantly shown, the infundibular lobe of the pituitary gland contains a substance which causes a marked elevation in blood-pressure lasting for some time and accompanied by a marked slowing of the heart and an increase in the force of the cardiac systole.

Tracing 8 was obtained from a dog into whose jugular vein was injected 0.75 c.c. of an extract of the infundibular lobe of the sheep's pituitary gland. The well-known effect is here nicely shown.

When an injection was made of a mixture of the pituitary extract just mentioned and an extract of the human chorioid plexus it was found that these substances tend to counteract each other, though incompletely. Of course, it is difficult to determine the completeness or incompleteness of such a counter-action in the absence of known dosage.

If we examine a tracing (Fig. 9), of such an experiment we shall find it very interesting. The depressant effect of the chorioid is shown, but lessened in amount and only transitory in time. This is succeeded by a rise in pressure due to the pituitary extract but this also is lessened in amount (15 mm.) and greatly shortened in time of duration. At the end of two minutes and thirty seconds the blood-pressure was within 5 mm. of that which obtained before the injection. The slowing of the heart is present but also reduced. It is evident then that these two principles which, we presume are poured into the cerebrospinal fluid have a tendency to counteract each other in so far as their effect on the circulatory apparatus is concerned. It will be a matter for future investigation to determine, if possible, under what circumstances the one or the other gains the supremacy.

A further report on the nature of the chorioid "depressant" will also be made in the future.

4 West Seventh Street.

OPTIMISTIC THERAPEUTICS

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Some months ago the Hon. Joseph Choate, at a celebration commemorating the landing of the Pilgrim Fathers, suggested that it might not be amiss to extol the Pilgrim Mothers also, who not only had to endure equally the hardships and privations undergone by the Pilgrim Fathers, but also had to endure the Pilgrim Fathers.

Along this line the thought has occurred to me that, while tomes have been written concerning the psychic attitude of our patients—how they should be lifted from the slough of disease and despond, and their feet planted on the solid ground of health and right thinking; how to combat the demon of introspection; how to

stem the increasing tide of "Americanitis," and so on *ad infinitum*—but little has been said about the psychic attitude of the physician who has these problems to shoulder as well as the mental foibles of the sick. He has to not only bear with the disease, but also bear with the changing, the complaining, and often repining personality of "experienced invalids," who know how to run up and down the gamut of symptomatology like an expert pianist, or who can argue from obscure cause to mysterious effect like a trained advocate.

We all have them: the surgeon hears of minor injuries entailing dreadful and far-reaching consequences; the gynecologist is regaled with lurid accounts of horrible ovarian and uterine pains; the ophthalmologist or aurist is told of ringing and singing sounds in the ears, or remarkable spots before the eyes assuming all manner of fantastic shapes; the internist hears of jumping and bumping hearts, of existences eked out with one lung completely gone, and the other one nearly out of commission, or of fierce pains in the back, denoting of course serious kidney disease; while the gastro-enterologist, I imagine, hears the most bizarre recitals of all. I am told sometimes of phenomena following the ingestion of simple articles of food which are neither explainable by physiology nor pathology, and which would make Sindbad the Sailor or Baron Munchausen turn green with envy. A prosaic piece of bread or an ordinary slice of roast beef, when deposited in the alimentary tract of some of these nervous dyspeptics, immediately becomes almost endowed with life, assuming a gastronomic importance anywhere from romantic to tragic. The wholesome meat of to-day becomes the poison of to-morrow, while some now despised viand may at the next visit be a longed-for delicacy.

Scientific diagnosis is being well taught at present by practically all the medical colleges. Each institution is vying with the other in furnishing thorough laboratory and clinical instruction, so that every medical graduate who lives up to his opportunities is amply equipped to diagnose disease as it comes before him. I am also glad to observe a healthy revival in therapeutic instruction. The belief in the efficacy of many forms of therapeutics—drug and otherwise—has been much undermined by the German school of therapeutic nihilists, aided and abetted, I regret to say, by one of our most eminent American physicians, who has recently taken up his abode in England.

Etiology, pathology, morbid anatomy, and symptomatology of disease have their essential place; but what the patient is interested in is the treatment and prognosis. When I read page after page of pathology, etc., and finally find the treatment briefly and inadequately expressed in a few lines, I feel that I have asked for bread and been given a stone.

Differential diagnosis appeals to the average lay mind, even though it be an intelligent one, about as much as the anatomic difference between a dinosaur and an anthropoid ape. The question "What is the matter with me, Doctor?" is overshadowed by the more pointed ones "How long shall I be sick?" or "Shall I get well?" and the doctor who gets busy at once doing something, whether it be an important therapeutic procedure or only a measure to relieve symptoms and render the patient more comfortable, until he can learn "where he is at," acquires an immediate influence not to be despised.

Far be it from me to decry any of the niceties of diagnosis, or the judicial poise of mind necessary to correct discrimination, where lines of diagnostic demarcation

are dimly drawn. What I do contend, however, is that it is the physician's duty, for both material and psychic reasons, to inaugurate some form of treatment as soon as possible after taking charge of a case of illness; and the patient has a right to it. Furthermore (and now I reach my subject), the therapeutics should be of an optimistic nature *to* the sufferer and *from* the physician. The confident frame of mind assumed by the medical attendant, the determination on his part to "win or bust," the abiding hope that the *vis Naturæ medicatrix*, that wonderful handmaiden, may "pull him out of the hole" regardless of the present outlook, will, more often than we realize, change a probable gloomy prognosis into a favorable one.

It is of course proper to be cautious and conservative, to preserve a loophole through which human fallibility may escape the blame, in case conditions do not assume the aspect that we anticipate. We must be ever on the *qui vive* that we allow not the complaints of some chronic complainers to render us careless as to possible underlying organic troubles, but this caution need not and should not dampen our optimism, or dull that keen edge of cheerfulness and hope with which our every prescription should be leavened.

Even in the graver maladies we should be extremely slow to give a fatal prognosis, for none of us, as yet, fully comprehend the influence of mind over matter, nor do we comprehend the influence of the higher psychic centers over the lower centers of metabolism, upward or downward. True optimistic therapeutics tends at all times toward exalting the activities of the organism, and not toward depressing them; therefore every point gained on some perhaps isolated nerve center may exert an unexpected beneficent effect on the very center responsible for the ills we are seeking to remedy.

I believe that in only the rarest and most exceptional instances, or where the patient is actually *in articulo mortis*, have we the right to shut the door of hope. Few there are whose absolute wisdom justify them in pronouncing the dictum as of a supreme court. I recently saw a picture entitled "The Death Sentence," in which was portrayed an austere physician facing a flat-chested, despairing young man. The physician had evidently informed this youth that his case was hopeless, and nothing was left but to supinely lie down and expire. Such a picture should be blotted out of existence.

Individually I would not accept the *ipse dixit* of any man or set of men that any disease, or complication or combination of diseases would place me beyond the pale of hope. And, if I so decidedly take this stand for myself and those who are near and dear to me, why should I not be fired by the same optimism and never-say-die determination in the treatment of my patients, no matter what the apparent outlook may be? The most successful politicians are those who never give up till the last ballot is counted, for a seeming defeat may, by some turn of fortune's wheel, be changed into victory at the last moment. Similarly, in a physician's work, an invincible determination to find the door to hope and to use the key, may be the deciding factor in success. I well remember an incident occurring in the career of a highly respected physician, now passed to his reward. His patient, the only son of a widow, seemed in the throes of dissolution; and this medical man informed the mother in the hearing of the son (who, by the way, was conscious), that nothing else need be done, as death

was inevitable. Leaving her, with breaking heart, to close the eyes of her only support, he retired for the night in an adjoining room. On awaking six hours later, Nature having busied herself in the meanwhile, he found a remarkable change for the better, which ended in a speedy recovery. The mortal remains of that doctor now molder in the ground, while the supposedly dying young man is at this time one of the most active citizens of South Georgia, and his name is borne by a thriving town.

Can we blame some sufferers from real or imaginary ills, who, becoming discouraged under the attitude of inert pessimism assumed by some physicians, stray into the alluring arms of the various cults, which despite their ridiculous concepts, at least ring an optimistic note? What a patient comes to a doctor for is treatment. He desires it—yea, he demands it. If, therefore, we are to be capable therapists, alert to meet every changing manifestation of disease, watching for danger-signals, listening for every warning voice of Nature, though it be still and small, let us, I beg, not clothe our professional efforts with the somber habiliments of pessimism, nor withdraw into the gloomy caverns of therapeutic nihilism; but, imbued with a spirit of cheerful resolution, let us receive with conscientious optimism every class of disease, organic or functional, injecting a word of hope or a ray of spiritual sunshine into every prescription, into every procedure, cultivating at all times an attitude that incites both hope and courage in the invalid's breast.

If we can but add to our knowledge works, and to our works the charming garments of an unfailing optimism, verily we shall receive our reward.

Therapeutics

PERICARDITIS

Pericarditis, like inflammation of any other serous membrane, may be acute, subacute or chronic, and, like any other serous membrane inflammation, may cause a fibrinous, serous, hemorrhagic or purulent exudate, and simple serous exudate, and there may be subsequent adhesions.

Primary pericarditis is very rare. It is almost invariably a secondary condition, with rheumatism as its most frequent cause. Bright's disease (chronic interstitial nephritis), infectious fevers (including cerebrospinal meningitis), pneumonia, and tuberculosis are other prominent causes. Traumatism is also a not infrequent cause. When it occurs as a complication of acute articular rheumatism, it most frequently occurs during the second week. Some statistics have seemed to show that it occurs as frequently as once in every seven cases of articular rheumatism. This is, however, probably an exaggerated frequency, unless a slight friction or occasional cardiac pain are termed pericarditis. Pericarditis may also occur during chorea, which is probably an infection and is closely allied to rheumatism. Pericarditis next most frequently occurs as a terminal condition in the last stage of Bright's disease.

While acute pericarditis may begin insidiously and escape detection, unless the heart is frequently examined during rheumatic and other fevers, still it is not so likely to be overlooked as endocarditis, as pain, sharp and lanc-

inating, is generally complained of. The pain is referred to the region of the heart and to the epigastrium. It seems to be not entirely due to the friction of the inflamed surfaces of the pericardial sac, as it may continue after a fluid exudate has separated these surfaces. There generally is a slight rise in temperature; the pulse becomes weak and small and perhaps irregular, with more or less cardiac dyspnea. There is generally from the very first a good deal of restlessness and mental anxiety, the patient reflexly or actually realizing the seriousness of the condition. In other words, there is cardiac anxiety, a condition so well understood by the physician who sees many patients with heart affections. As the disease progresses the patient desires to lie with the head higher and higher, this depending on the amount of exudate. If there is much exudate, so that the heart is much pressed on, the least exertion will cause dyspnea and cyanosis. If the exudate were very large and the pericardial sac greatly dilated, the recurrent laryngeal nerve might be so interfered with as to paralyze the vocal cords and cause aphonia. An exudate should not be allowed to become so great as to cause this condition. In other words, paracentesis should be done before such a dilatation of the upper part of the sac could occur. Even when the exudate is small, possibly from continuity, irritation of the diaphragm may occur, and a consequent hiccup becomes a troublesome and dangerous symptom. Probably reflexly, owing to disturbance of the pneumogastric nerve, nausea and vomiting are often present.

The physical signs of this inflammation are, first, to-and-fro friction fremitus; second, when there is effusion, increased cardiac dulness, absence of cardiac impulse, and muffling of cardiac sounds. The amount of exudate of course determines the size of the pear-shaped dulness.

The pathology of pericarditis is simply that of an inflammation of a serous membrane, with the addition of the physical fact that there is no opportunity for rest. The duration of the acute form varies from two to several weeks, with the exudate, if there was exudate, gradually diminishing. If the exudate was withdrawn, there may be some recurrence. The inflammation may become chronic. This is, however, rare, except as an adherent pericardium, unless pus forms and there is a purulent inflammation of the pericardium. In other words, a heart could not long stand a continued and repeated pressure from exudate, while if it is a purulent pericarditis, operation and drainage is immediately necessary.

The prognosis of pericarditis occurring during rheumatism, during acute infections, or from injury, is generally considered good, patients not frequently dying of this condition alone, although it is a serious complication if the patient is otherwise seriously ill. However, patients with fibrinous pericarditis may develop myocarditis and later acute dilatation. Sometimes after the patient is apparently well, adventitious sounds may be heard in the region of the apex, which are due to adhesions in the pericardium. Also, sometimes these sounds are heard at the base of the heart. Such sounds show adhesions that interfere with perfect cardiac action, and under exertion or sudden heart-strain may cause sudden death. When pericarditis occurs during an acute exacerbation of nephritis, especially chronic interstitial nephritis, the prognosis is bad. It is generally a terminal condition. It should not be forgotten that when there is a large exudate in the pericardial cavity sudden

death from overwhelming of the heart may occur at any time during the course of the disease.

The indications for treatment are:

1. To treat the underlying cause of the inflammation.
2. To relieve pain.
3. To inhibit the progress of the disease and prevent exudate if possible.
4. To quiet the heart.
5. To remove the exudate, medicinally if possible, surgically if the amount is at all large.

1. If the cause of the pericarditis is rheumatism, salicylic acid in some form should be continued unless it has been proved in this particular patient not to inhibit or control the disease. Alkalies, best in the form of sodium bicarbonate and potassium citrate, should be administered in full doses, so that the urine is distinctly alkaline. If the pericarditis is caused by some infection, whatever is necessary to treat the infection properly should be continued, with perhaps the addition of the above alkalies, as it should be remembered that whenever a patient is seriously ill, and but little or insufficient food is taken, or if there is much vomiting, and especially when there is nephritis, there is increased acidity of the body tissues and a decreased alkalinity of the blood readily occurs; in other words, acidosis is always imminent and is probably the final cause of many deaths.

2. Pain must be absolutely stopped with sufficient morphin. There can be no question of the seriousness of pain in this region and from this cause. With the stopping of the pain the heart is slowed and quieted, the nervous restlessness and anxiety is lessened, and the patient may obtain quiet, restful sleep, which is absolutely essential for the condition to improve.

If there is salicylism from the salicylates which it seems best or necessary to administer, it is well to reduce the amount, as it would take more morphin to cause sleep if the cerebrum is thus excited. While pain is in evidence and morphin is necessary, the amount of food administered should be very small, as it will not digest when the patient is under the influence of morphin.

Fortunately, this pain will generally be mostly relieved when the exudate occurs, if it is to occur. The repetition of the morphin should be according to the amount or continuance of the pain. The morphin should, of course, be stopped the moment the pain is abated.

The pain having ceased and morphin not being longer necessary, the patient should receive the diet that is the best for the disease which caused the pericarditis, with the exception that food should be given frequently and in small amount, as any distention of the stomach, which is likely to cause more cardiac dyspnea, should be avoided. Any particular food that causes gastric flatulence should also be avoided. The bowels should be moved by the drug and method found easiest and best.

3. The best treatment to inhibit the inflammation and possibly prevent exudate is the local application of the ice-bag or cold coil. If tolerated for the first hour, the patient will often not object to the cold, and if it quiets the heart, as it generally does, the application is grateful rather than objectionable. The cold rubber should not be directly applied to the skin, but should be separated from it by two layers of an ordinary handkerchief. A towel is generally too thick. The bag should not be so full as to be too weighty, and it is well to suspend it from some sort of a cradle so that the whole

weight will not press on the heart. Young children will often, of course, not tolerate the cold. There is no question that moist warmth will often relieve the local pain, and whether or not it will increase the tendency to exudate is undecided. Theoretically it is best avoided. Moist heat, however, is probably better than dry heat, as tending more to relax the surrounding surface circulation.

If an exudate occurs, the advisability of small fly-blisters must be considered. Simple counter-irritation from mustard often seems to be of benefit, but the fly-blisters are much more valuable. They should not be large, and are perhaps well placed at the border of the heart rather than directly over it. Small blisters on different parts of the border-line of the cardiac dulness may be used on different days. Cantharides is, of course, the best blistering medicament, but should not be used if nephritis is present.

4. This indication is met by absolute rest and quiet in the position found most comfortable for the patient. Every movement of the patient must be slow; no movement must be quick. He must not be allowed to see anyone but his immediate attendants; he should not be allowed to talk, except concerning his immediate needs. The more he comfortably sleeps, the better, all of these factors tending to decrease the frequency of the heart-beats, and the less the frequency the less the irritation.

If the salicylates are not given, or the condition is not caused by rheumatism, and the heart is not weak, and the pulse is strong, aconite for twenty-four hours, to quiet the heart, may be given, unless the local ice treatment quiets the heart sufficiently. If it is necessary to give the patient a hypnotic such as chloral or one of the synthetic hypnotics, the aconite should not be given, as these drugs will quiet the heart. Unless there has been a prolonged infection which could have caused a myocarditis besides the pericarditis, the heart will not stop on account of lack of inherent strength, but may stop on account of the pressure from an exudate. Therefore, myocardial weakness need not ordinarily be feared, although in children, especially, sudden dilatation may occur.

If the pulse is weak, irregular, and perhaps intermittent, and degeneration of the heart muscle from prolonged infection or illness is not present, digitalis will be of great benefit. It will strengthen the individual beats and reduce the frequency. If the number of beats, by any method, is reduced twenty per minute, this would mean 1,200 beats less an hour, or 28,800 less in twenty-four hours. If the number of beats were reduced only half this amount, the value can easily be seen to be enormous. If digitalis is used, the dose should not be large, perhaps five drops of an assayed fat-free tincture once in six to eight hours.

5. Whether or not an exudate may be diminished and removed by medicinal treatment is a question that may be decided within a few days. Strenuous efforts to remove liquid from the body to prevent this serous exudate could probably not be inaugurated on account of the underlying sickness or cause of the pericarditis. Much purging is out of the question on account of its weakening effects. Profuse diaphoresis is generally totally out of the question. The efficiency of diuretics is always doubtful. The administration of potassium citrate and bicarbonate of soda, above suggested, will probably cause some diuresis. If digitalis is deemed advisable, it will doubtless cause more. The amount of

liquid taken into the system should be somewhat restricted. It is possible that by these measures the amount of exudate may be limited and the exudate already present may become gradually absorbed. The local blisters above described also seem to cause resorption of the fluid.

Whether or not the exudate must be immediately removed depends not so much on its bulk as on the amount of dyspnea or cardiac distress that it is causing. Some patients tolerate a larger amount of exudate than others. It is well for an exploratory puncture to be made first to decide the character of the fluid in the pericardium. This will determine the size of the aspirating needle that is necessary. Perhaps the most frequently recommended point of puncture is in the fourth or fifth intercostal space, about an inch to the left of the sternal margin. Others advise doing paracentesis exactly in the region of the normal apex beat. The patient during this operation should lie down as nearly flat as he can. The fluid should be withdrawn very slowly and the pulse carefully watched. If the exploratory needle discovers pus, and there is great dyspnea, a larger aspirating needle should be inserted than for a simple serous exudate, and some of the pus withdrawn. A second more radical surgical procedure, of course, must take place as soon as possible.

If there is a sudden attack of dyspnea, and the heart seems about to fail, venesection has been recommended and done, and it is certainly justifiable. Strychnin may be used in a dose not exceeding 0.02 gm. (1/30 of a grain) once in six hours, hypodermatically, if deemed advisable, often with advantage. Too much strychnin, with dire results, has often been used in cardiac failure. It should not be used early in the disease, as excitation of the nervous system and the heart should be avoided. If the heart seems to be failing, intramuscular injections of an aseptic ergot in a dose of one ampule once in six hours, or two ampules at once in an emergency, often is the best possible heart treatment.

When the exudate has nearly disappeared and the acute inflammation seems over, there are doubtless considerable amounts of fibrin still in the bottom or in other parts of the pericardial sac, and as there is still the general belief that an iodid will aid in resorbing such kinds of exudates, it is good treatment to give a small dose of iodid three times a day, after meals. The best form is the sodium iodid, in small doses, not more than 0.20 gm. (3 grains).

As soon as there is slight improvement, the nutrition should be pushed carefully but surely, as the better the nutrition the more complete will be the resorption of the exudate. If during the active inflammation the patient can take but little nourishment, egg albumin must be given in considerable quantities, and if it is feared that the patient is failing from lack of nutrition, there should be no hesitation in giving a teaspoonful of brandy or whisky, properly diluted, once in three hours. This small amount will rarely increase the frequency of the heart beat, and will furnish something for the nutrition. Alcohol is not advisable and it is not necessary as a medicament in this disease, but it may be necessary to tide over a period of defective nutrition.

The convalescence of an acute pericarditis should be slow and careful. The longer before the heart is allowed to do extra work, the more complete is the removal of the fibrin, and the less likely that dangerous adhesions will form.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JANUARY 28, 1911

UNCINARIASIS IN THE MINES OF CALIFORNIA

In this issue appears an important article by Dr. Herbert Gunn, who reports that hookworm disease is found in 50 to 80 per cent. of the miners working in certain mines in California, and that the infection is present in Nevada mines also. This article is especially timely just now, when certain organizations interested in mining are making arrangements for an investigation as to the presence and prevalence of hookworm disease among American miners.

As early as 1902, Dr. Charles Wardell Stiles of the Public Health and Marine-Hospital Service determined that the infection was present among the copper-miners of the Virgilina district, the coal-miners of the Cum-nock district, and in the region of the Haile gold-mines. In 1904 Wainwright and Nichols¹ examined 400 anthracite miners selected from fifteen different mines in Pennsylvania, and found one case of the infection. Since the discovery of the wide-spread distribution of hookworm disease in the United States, the men engaged in this investigation have repeatedly brought forward the point in their public addresses that, while in general the Potomac and Ohio Rivers may be looked on as the northern border of the endemic infection, we must be prepared to find cases farther north, more especially in our mines, and that unless rigid rules in mine sanitation are enforced, there is danger that at any time the hookworm problem in our American mines may become as important as in the mines of Europe. Considering the large numbers of southern negroes employed in some mines and the large numbers of immigrants from Europe in others, it seems strange indeed that the disease has not already been reported more frequently among American miners. The data now accessible call for a prompt and rigid investigation into the subject in all mining localities of the country.

If the experience of other countries be taken as a criterion, the indications are that in northern mining localities the infection will be found chiefly among the men who work underground, and relatively much less frequently among the women and children of the dis-

tricts in question. In this respect, the age and sex distribution may be expected to differ from that noticed in the warmer agricultural regions.

So far as it is possible to prophesy at present, it seems probable that, in the greater part of the north, the European immigrants and the southern miners who go north will be the chief elements who will spread the infection, while in the far west the Asiatics must be held in mind as possible contributing factors. In all probability many of the hookworm cases which will be found among our miners in the North will be found due to the Old-World hookworm (*Ankylostoma duodenale*).

It is especially the humanitarian side of this question which interests us. At the same time, the economic side is one which we cannot afford to ignore. Gunn's estimate, therefore, that in one California mine the loss due to the infection is over \$20,000 per year is worthy the attention of mine-owners. Let us not forget that it has already cost European mines hundreds of thousands of dollars to institute a campaign against this disease. The situation for the American mines was summarized² in 1907, as follows: "Whether the American coal-mines will experience a repetition of the sad and expensive history European mines have had from hookworm disease, will depend primarily on the sanitary regulations they enforce." It might be well for mine-owners to consider this warning, in connection with the statement by Wainwright and Nichols that "none of the anthracite mines of this country. . . has any privy facilities under ground. The men deposit their excreta in any chamber or gangway handy."

Until recently the Public Health and Marine-Hospital Service seemed to be the only federal bureau which really grasped the significance of the hookworm situation in this country, although the Medical Corps of the U. S. Army, because of the important work by Dr. B. K. Ashford, had for some years pointed out the importance of the disease in Porto Rico, and Ashford and King had made heroic efforts for its suppression on the island. About two years ago, the Bureau of Labor became interested in the problem, and it is reported that the present Commissioner of Labor, Mr. Neill, is thoroughly aroused to its importance. It is now reported also that the newly established Bureau of Mines is turning its serious consideration to the subject. The southern state boards of health have been doing most praiseworthy and efficient work in the campaign, and during this last year the educational interests have taken up the subject and are cooperating in a manner that is deserving of the highest praise.

Up to the present the agricultural organizations of the country in general, with some few exceptions, notably two southern agricultural journals, have not become aroused to the importance of hookworm disease on the farms, and statistics recently published, to the effect that a census of over 4,800 American farm homes shows

1. Med. News, April 23, 1904.

2. In Osler's Modern Medicine, i, 592.

that less than one-half of them are provided with a privy of any sort, should arouse our agricultural stations, bureaus, societies, etc., to immediate interest and action.

FERMENT ACTION IN PATHOLOGIC PROCESSES

That vital activity, in the broadest sense of the term, is most intimately associated with enzyme action, is a matter of common acceptance. In view of this, the investigation of the part played by ferments in pathologic processes has become of no small significance. In a recent article, Wohlgemuth¹ outlines the general progress that has been made in this direction. To review in detail the great amount of valuable work being done on this subject, both here and abroad, would be impossible at this time, and the present review is based solely on the account just cited. Practically only the borderland of this enormous field has been entered, and yet results have been obtained that indicate unmistakably the value of further work.

As would be expected *a priori*, different ferments occur in different tissues in varying proportions. So, for instance, oxidase appears to occur in proportion to the presence in a tissue of polynuclear leukocytes or their decomposition products. But whatever the tissue, one enzyme at least seems to be invariably present—the autolytic ferment. Enzymes other than those inherent in the tissue cells themselves not infrequently play a part in self-digestion, however. Thus, the autolysis in the pneumonic lung is greatly accelerated by the presence of the so-called leukocytic ferment, a proteolytic ferment limited apparently to the polynuclear leukocytes. The importance of such a ferment becomes at once evident when we consider the share it must take, for example, in such processes as the resolution of pneumonia or the absorption of fibrinous exudates. Non-contaminated tuberculous abscesses, characterized by infiltration with lymphocytes, do not possess such a ferment, until an immigration of polynuclear cells is induced, as by an irritant paste, and it is probably in this direction that the explanation of the therapeutic value of the latter is to be found. This leukocytic ferment is believed by Wohlgemuth to be the source of the great variation in the post-mortem clotting of blood. Of the three factors chiefly concerned—thrombogen, thrombokinese and fibrinogen—delayed clotting has been found to be mainly due to absence of the last. And Wohlgemuth believes that it is the proteolytic ferment liberated from decomposed leukocytes that causes disappearance of the fibrinogen. In this connection, the contradictory fact is of interest that in pneumonia, eminently a disease characterized by leukocytosis, we usually have a markedly increased coagulability of the blood.

Accelerated autolysis may result in other ways as well, as in such conditions as phosphorus poisoning and acute

yellow atrophy. So, too, it is believed, though on uncertain evidence, that the shrinking of the puerperal uterus is of this character. Malignant tumors for the most part show the phenomenon in a marked degree, possessing also the property of hastening autolysis of the normal tissue, frequently with the production of abnormal cleavage products.

On the other hand, tumor cells may lack ferments present in normal cells, and may even produce changes in the enzyme content of normal cells of their host. So it has been found that at times the demonstrated ability of normal liver cells to digest carcinomatous tissue may disappear. Serum, also, which normally has a lytic action on carcinoma cells, may lose this in carcinomatous individuals—a phenomenon which throws light on the problem of hetero-inoculation and auto-inoculation of malignant growths.

Some attempts, only partially successful, have been made to simulate the abnormal ferment action of malignant growths. Particularly has this been done with melanosarcoma, and melanin-like substances have been produced in several ways—by the action of both vegetable ferments and of melanoma extracts on tyrosin and epinephrin. Inasmuch as little is known of the composition of melanin itself, such attempts must necessarily be inconclusive. The addition of the vegetable ferments to the inoculable sarcoma of mice has been found to cause pigmentation, though atypical in distribution, of the tumors *in vitro*, but not in the living animal.

Fat necrosis (in reality necrosis of tissue with fat-splitting)—the peculiar lesion produced by the escape of the juice of the pancreas into adjacent structures—has commonly been held to be the result of backing up of bile or of duodenal secretion into the pancreatic duct, with resultant activation of the pancreatic proferments and digestion of neighboring tissues. Since such necrosis often occurs at the tail of the pancreas, the portion which would be the last to be reached by an influx of intestinal secretion through the duct, this theory scarcely suffices. It has recently been found that the amino-acids resulting from proteid decomposition may produce activation of the secretions; so that slight local inflammatory processes, with subsequent autolysis, may be the true source of the activation and abnormal action of the secretion.

EXCEPTIONAL MEN AND HIGHER STANDARDS OF MEDICAL EDUCATION

In the discussion of educational standards, references are frequently made to physicians who have reached distinction, although they received their education at a time when lower standards prevailed. It is sometimes argued that the adoption of higher standards of preliminary education would prevent such men from studying medicine. Such exceptional men, however, were almost bound to succeed under any circumstances, and the fact is apparently overlooked that probably they succeeded

1. Wohlgemuth: *Perl. klin. Wchnschr.*, 1910, xlvii, 2182.

in spite of their inferior advantages. How many more physicians of such marked success would there be, it may be asked, had the medical colleges of twenty or more years ago held to higher standards of admission and possessed better teachers, better-equipped laboratories and more ample clinical facilities? Even so, however, the graduate in medicine of twenty years ago was not so heavily handicapped as the graduate of to-day with the same inferior equipment, for the disparity between their attainments and the summit of medical knowledge was far less twenty years ago than it is to-day. Of course, at that time, the preliminary requirements which are exacted to-day were not necessary—scarcely possible.

Those who question the value of a thorough preliminary education apparently fail to see that, after all, formal education is largely a device for saving time and labor, and that, as the volume of knowledge increases, the difficulty of mastering it increases likewise until the aid of such educational devices becomes indispensable. Mathematical knowledge, for instance, was scanty in Pythagoras' day; he spent the years of his mature life laboriously constructing and arranging the mathematical arguments which the modern schoolboy is expected to learn in a few months; and he gained his reputation as a mathematician without having heard of logarithms. No one to-day can attain even respectable mediocrity in mathematics, or any other science, without mastering more knowledge than the world once contained on that subject. Pythagoras and Euclid, if they were living to-day and were still without a modern mathematical education, would be no better qualified to cope with modern mathematics than the Chaldean astronomers would be to pass on the work of Newton and Herschel. And likewise, no one can now be considered passably well informed who is not acquainted with a range of subjects undreamed of by the intellectual giants of other days.

It seems scarcely more than yesterday that the very names of many of the sciences which to-day are subsidiary or auxiliary to medicine were unknown. There is no alternative: those who would keep abreast of the times must start on the journey equipped with the condensed experience of their predecessors; they must start as nearly as possible where their predecessors left off. It is a cruelty rather than a kindness, even to the students themselves, to foster the idea that the educational standards of yesterday are sufficient for to-day.

Incidentally, the requirement of higher preliminary standards to-day is not unreasonable, since there has been a corresponding increase in the opportunities for obtaining this higher training. Instead of hindering men of true worth from entering on the study of medicine, insistence on higher standards will have the most desirable result of weeding out the ignorant and unqualified, and of bringing about a higher degree of competency in the rank and file of the medical profession. With the present abundant oversupply of physicians,

any reduction in the number resulting from higher educational standards will not be a serious matter, either for the public or the profession itself. At the same time, the number of well-trained and competent physicians will be materially increased. Clearly, the interests of the public, of the profession, and of individual practitioners will be best conserved by the adoption of higher standards in medical education.

Current Comment

AN INTERESTING BULLETIN ON STATE HYGIENE AND PROPHYLAXIS OF DISEASE

The Bulletin of the Ohio State Board of Health for the last quarter of 1910 contains seventeen papers presented at the conferences of village and township boards of health held at Cleveland in June and at Cincinnati in October. Such subjects are included as the control of contagious and infectious diseases, disease-carriers, facts and fallacies regarding the transmission of infectious diseases, a number of papers on typhoid fever and its prevention and management from the standpoint of the sanitarian, several papers on milk and its production, a paper on sanitation in villages without sewers, on school inspection, on abatement of nuisances, and others, and a report of contagious and infectious diseases. There are seldom gathered together in one pamphlet so many valuable papers on the important subjects of public health and sanitation as in this one. The several papers afford an almost complete program for the municipal health officer covering the prevention, control and eradication of infectious and communicable diseases.

REFORM IN ADVERTISING

While pharmacy is a profession, economic conditions, to a large extent, have made a tradesman of the owner of a drugstore. As such he is obliged to sell many things which, in view of his professional training, he knows the public would be better off without. In the same way, the drug journals advertise many things which the editor knows to be valueless or worse. Further, the editor must conduct his reading pages in such a way as not to give offense to his advertising patrons. Thus, while editors of drug journals like to talk about the ethics of pharmacy and are prone to indulge in glittering generalities as to the need of pharmaceutical advance, these editors have as a rule carefully refrained from noting the exposures of fraudulent medicines that have appeared in the columns of *THE JOURNAL*—exposures that supplied information which the pharmacist should have and must have if he is to be true to his profession; information that would enable him to protect the public, the physician and himself from the harm which ensues from the use of dishonest medicines. While thus, in general, drug journals have done little to spread *THE JOURNAL*'s propaganda for reform, there have been two notable exceptions—the *Druggists Circular* of New York and the *American Journal of Pharmacy* of Philadelphia. These

journals have not only kept their reading pages up to date, but they have kept their advertising pages practically free from all objectionable matter. We believe that, through the work initiated by THE JOURNAL, assisted by such drug journals as those mentioned, the nostrum-makers have been put on the retreat, and that the business will continue to be a dwindling one. Other pharmacentia journals will not lose in the long run, even from a purely commercial standpoint, by taking the position assumed by the *Druggists Circular* and the *American Journal of Pharmacy*. In fact, we confidently expect them, one by one, to adopt the same policy. By so doing they will not only gain the respect of their own profession and of the medical profession, but—equally important—they will also be able to respect themselves.

THE POOR BOY AND MEDICAL EDUCATION

Much ostensible sympathy has been lavished on the poor boy who wants to get a medical education; and it would appear that the "poor boy's" chances are going to be slimmer still if the low standard or the night colleges cease to exist. Poor boy! Of course there is some basis for these arguments in the case of students who are poor in scholarship. Such students, however, have no place in modern medicine. The arguments are not only untrue regarding students of limited means, however, but they are also unfair to those students. As a rule, the student of limited means who is ambitious and energetic enough to work his way through college is the one who knows and seeks the best—who best knows the value of a good training as well as the value of money. This is evidenced by the fact that in our best medical colleges are many students who are not only working for most or all their expenses but who at the same time are attaining a high standard of scholarship. As a rule, these students do not need sympathy, but do arouse admiration. The only need of sympathy is for the occasional energetic, deserving student who is misled by the shrewdly worded announcement of some inferior college which not only provides him with an inferior medical training, but which may actually charge him larger fees¹ than he would have to pay in a first-class medical school. As a matter of fact the opportunities for the energetic student of limited means in high-grade medical schools were never so great as at the present time. Not only has a greater demand for student help been developed in our universities through the use of stenography, the typewriter, the mimeograph, and the like, as well as through the development of university printing plants and other modern activities, but also a larger number of scholarships are available for energetic students. Of more importance, probably, is the fact that for graduates of first-class medical colleges the chances for obtaining internships in good hospitals are rapidly increasing, and by this means even the student of limited finances may round out and complete his medical training. The student of limited means—the "poor boy"—will find that it is possible for him to get the best, and that the best pays.

UNITED STATES PUBLIC HEALTH SERVICE

Elsewhere in this issue¹ we print the bill recently introduced into both the House of Representatives and the Senate; in the former by Mr. Mann of Illinois, and in the latter by Senator Martin of Virginia. As will be noticed, this bill contains three provisions; the first, to change the title of the United States Public Health and Marine-Hospital Service; the second, to enlarge the functions of this service; and the third, to increase the salary of its officers. No one will deny the desirability of all three of these provisions. The only question is whether or not the passage of this bill will prevent further legislation, looking to a national department of health, or at least an independent bureau. The first provision would be the second step in eliminating the words "Marine-Hospital" from the title. Until 1902 the title was the "Marine-Hospital Service"; in that year a measure was passed which changed the title to the present one. If the present bill passes, the title will thereafter be the "United States Public Health Service." In the second place, the bill contains a provision to enlarge the functions by giving the service the authority to investigate "diseases of man" and the conditions that cause the spread of such disease, including sanitation and sewage, and the pollution, "either directly or indirectly," of all navigable streams or lakes. At the present time the service can investigate only certain contagious diseases and has no authority to investigate navigable waters. To the third provision, that to increase the salary of the officers, there can be no objection. In practically all the other departments of the government, the salary of the medical officers has been increased, and for several years attempts have been made to increase the salary of the men in this service, but without avail. Whatever may be the fate of this bill, continued efforts should be made in the way of constructive legislation, looking to a national department of health; we should stop at nothing short of this.

THE AUTOMOBILE NUMBER

The Fourth Annual Automobile Number of THE JOURNAL will be issued early in the spring. Numerous inquiries concerning it indicate that this year, as before, it will be warmly greeted. In the process of evolution, the automobile has become such an essential part of the business equipment of the active practitioner, and such a satisfactory means of recreation for one possessed of the necessary means and leisure, that the extensive discussion of previous years as to whether or not the physician should use a motor car will no longer be necessary. Furthermore, the previous automobile numbers are still available for consultation. That they are thus used is evident from the orders continually received for them and for the little folder giving the names of the cars. Space in the coming automobile number, therefore, can be used more appropriately for the discussion of roads, accessories, garages, tires and various other items of equipment, the proper care of the car, interesting, humorous—and sad—experiences,

1. THE JOURNAL A. M. A., Aug. 20, 1910, p. 695.

1. Department of Medical Economics, page 293.

and other appropriate talk of the road. The question of upkeep is especially of importance; methods of reducing expenses are of vital interest. All owners of automobiles should keep itemized accounts of outlay; few do. It would be interesting to hear from some of the "few" as to the best method of keeping tab on what was once an expensive luxury but has now become an expensive necessity. As before, this will be an illustrated number, and sharp, clear pictures are desired to add to the interest and value. These may portray, not merely the car, but the physician also, with perhaps his house or garage, a sample road, the county hospital, etc., in the background, or else some interesting complication or difficult situation. Drawings of home-made devices, mechanical aids, garage plans, etc., are worth reproducing. Unless otherwise specially arranged by correspondence, manuscripts and photographs ought to be received during February; but in order to enable us to plan for the issue intelligently, all who intend to offer pictures or articles or both are asked to notify us by February 10.

PREVENTIVE MEDICINE AT WASHINGTON UNIVERSITY

Since the future progress in medicine will doubtless be more along the line of preventing than of curing diseases, the recent action of Washington University, St. Louis, in creating a special chair in preventive medicine is both important and timely. Not only is it intended to give the usual didactic courses in this subject, but special clinics and special research courses will be conducted. At these clinics patients having infectious diseases, diseases due to social conditions, occupations, nutritional causes and the like, will be shown. Particular attention will be given to the etiology and the means of preventing such ailments. Of greater significance, however, is the fact that Dr. David L. Edsall, Professor of Medicine in the University of Pennsylvania, has been selected for this special chair in preventive medicine. Washington University is probably the first institution which has given such marked recognition to this subject. If the old adage is correct, an ounce of instruction along this particular line will be more productive of good than a pound of work along curative lines; and concentrated, well-directed effort in the study and teaching of preventive measures should bring excellent results. Meanwhile, the establishment of this special chair on so generous a plan is another proof of the determination of Washington University to build up in the middle west a medical school fully equipped to teach medicine along modern lines.

Tendon Transference in Poliomyelitis.—Tendon transference has failed in many hands because the mechanism of the condition has not been thoroughly understood. In the first place, the transferred muscle must be a strong, healthy muscle, and no attempt should be made to use one that is paretic even to a slight degree; secondly, the tendon must be made to parallel for a considerable distance the tendon for which it will in future act; thirdly, it must tunnel the subcutaneous fat, so that no adhesions will form.—W. G. Campbell, in *Memphis Medical Monthly*.

Medical News

ARIZONA

State Association Meeting.—The next annual meeting of the Arizona Medical Association will be held in Los Angeles, Cal., June 26. All of the business of the House of Delegates will be finished that day. The oration and a few papers will be read before the general meeting. The association will then adjourn to attend the meeting of the different sections of the American Medical Association. The annual banquet of the association will be held on the same evening.

County Society Meeting.—At the annual meeting of Cochise County Medical Association, held in Bisbee, January 7, the following officers were elected: president, Dr. Morris D. Cohen, Bisbee; vice-presidents, Drs. Harry A. Reese, Douglas, and Lucien L. Miner, Bisbee, and Lynn Tuttle, Douglas; secretary-treasurer, Dr. Thomas Watkins, Bisbee; censors, Drs. George A. Bridge, Bisbee, and Edward W. Adamson, Douglas; and delegate to the state association, Dr. Francis E. Shine, Bisbee.

CALIFORNIA

Election.—At the annual meeting of the Los Angeles County Medical Association, the following officers were elected: president, Dr. W. Jarvis Barlow; vice-president, Dr. Orville O. Witherbee; secretary-treasurer, Dr. George H. Kress; and councilors at large, Drs. H. Bert Ellis, William W. Richardson and Albert Soiland, all of Los Angeles.

Preparation for the A. M. A. Meeting.—It is announced that thus far Pasadena has made the best comparative showing in raising funds for the annual session of the A. M. A. next June. Extensive arrangements are planned for the entertainment of the visiting physicians and their families, including a trip to Catalina Island.—The directors of the Board of Trade of Pasadena have authorized the appointment of a committee of three to have in charge the entertainment of the American Medical Association at its meeting in Los Angeles in June.

ILLINOIS

State Sanatorium Bill Introduced.—Senator Glackin has introduced into the senate a bill appropriating \$300,000 for a state sanatorium for tuberculosis.

"Helper of Mankind" Sentenced.—Julius Seffler, posing as a "Helper of Mankind," who uses the same kind of medicine for various ailments, passing his hands over the forehead and along the neck of his victims, is said to have been found guilty by a jury in the municipal court, Chicago, of practicing medicine without a license, and fined \$100 and costs.

Elgin Hospital Charges Unfounded.—According to the report of Hon. A. L. Bowen, executive secretary of the State Charitable Commission, and Dr. J. L. Greene, alienist of the State Board of Administration, charges published in one of the Chicago daily papers, January 7, that a patient at the Elgin State Hospital had been beaten by the attendants, were without foundation. The investigation of the charges was made at the request of State's Attorney Dady of Lake County and was conducted in the presence of the patient's wife and the state's attorney, by the two officers above named. As stated, after a thorough investigation and physical examination, the charges were declared by State's Attorney Dady to be unwarranted and entirely unfounded, concurring in every respect with the opinions of Dr. Greene and Secretary Bowen. The wife of the patient also agreed to this finding, and refused to have her husband removed to the Kankakee State Hospital, preferring to have him remain at Elgin. The management of the institution under Dr. Sidney D. Wilgus was praised by State's Attorney Dady, who said it was as good as could be expected under all the surrounding conditions.

Chicago

Gift to Hospital.—The Maimonides-Kosher Hospital received a gift of \$10,000, January 16, from Abraham Slimmer of Waverly, Iowa.

Schools Named after Physicians.—In addition to the Nicholas Senn high school, the site for which has been secured, Chicago schools are named after the following physicians: Daniel Brainard, William H. Byford, Nathan Smith Davis and Charles Warrington Earle.

Ophthalmologists Hold Meeting.—At the annual meeting of the Chicago Ophthalmological Society, held January 16, Dr. Harry W. Woodruff, Joliet, was elected president; Dr. Edwin V. L. Brown, vice-president; Dr. Willis O. Nance, secretary; and Dr. Thomas A. Woodruff, councilor.

New Tuberculosis Dispensary Opened.—The work of the Municipal Tuberculosis Dispensary is to be extended to negro residents of the city. At a meeting of the directors, January 11, it was decided to open a clinic for tuberculosis at Provident Hospital, West Thirty-Sixth and Dearborn Streets.

Personal.—A reception and banquet, in honor of the eightieth birthday anniversary of Dr. Nils T. Qualess, was given January 17. A silver loving-cup was presented to Dr. Qualess by Chicago Norwegians.—Dr. Matthew Karasek has been appointed temporary medical superintendent of the Iroquois Memorial Hospital, pending the permanent appointment by the Civil Service Commission.—Dr. and Mrs. Philip Frank Shaffner sail for Europe, January 28.

Work of the Winfield Sanatorium.—The record of the first two years' work of the Chicago-Winfield Tuberculosis Sanatorium, thirty miles from Chicago, conducted under the auspices of the Associated Jewish Charities of Chicago, a non-sectarian institution for the treatment of curable cases of pulmonary tuberculosis, shows that since the opening of the institution 224 patients have been admitted, forty-six of whom were children. Of these, 164 had been discharged up to Jan. 1, 1911, and sixty were at the institution on that date. Of the 164 discharged patients, 101 were in the incipient state of the disease on admission, forty-two moderately advanced state, and one far advanced. At the time of the discharge, in 82 per cent. of the incipient cases, the patients were apparently cured or the progress of the disease was arrested, and in eighteen improvement had taken place. Of the moderately advanced patients, in 52 per cent. the disease was arrested or apparently cured, 38 per cent. were improved, and 10 per cent. unimproved. The one patient in the far advanced stage is reported to be improved. Of the discharged incipient patients 94 per cent. have full or partial working capacity at present. Of those in the moderately advanced stage of the disease, 69 per cent. have at present full or partial working capacity, making a total of 86 per cent. of the discharged whose capacity for work is either full or partial. The sanatorium, which at first had a capacity of only twenty patients, now can accommodate sixty-eight, and this is shortly to be increased.

KANSAS

Medical School Located.—By unanimous vote of the regents of the state university, Kansas City has been selected as the proper site for the State Clinical Hospital and School of Medicine. The legislature will be asked to appropriate \$150,000 for the school, of which \$50,000 is to be applied to building a medical college and \$100,000 for the erection of a hospital. The site must finally be decided by the legislature.

Elections.—Reno County Medical Society, at its annual meeting, held in Hutchinson, elected Dr. Charles S. Evans, president; Dr. Harry H. Heylman, vice-president; Dr. John W. Young, secretary; Dr. William F. Schoor, treasurer, and Dr. M. Claude Roberts, censor, all of Hutchinson.—Wyandotte County Medical Society has elected the following officers: president, Dr. James W. May; secretary, Dr. J. Albert Fulton, and treasurer, Dr. Anna Roberts, all of Kansas City.—Montgomery County Medical Association met at Independence, recently and elected Dr. George McK. Seacat, Cherryvale, president; Dr. Joel N. Strawn, Elk City, vice-president, and Dr. James A. Pinkston, Independence, secretary.—At the seventh annual meeting of Bourbon County Medical Society, held in Fort Scott, Dr. Charles A. Van Velzer, Fort Scott, was elected president; Dr. James S. Cummings, Bronson, vice-president; Dr. John D. Hunter, Fort Scott, secretary, and Dr. Charles F. Harrar, Fort Scott, treasurer.—Douglas County Medical Society, at its annual meeting, held in Lawrence, January 10, elected Dr. George W. Jones, president; Dr. Harry L. Chambers, vice-president; Dr. Leon Matassar, secretary, and Dr. Eugene Smith, treasurer, all of Lawrence.—At the annual meeting of Leavenworth County Medical Society, January 9, the following officers were elected: Dr. Harley J. Stacey, president; Dr. Charles J. McGee, vice-president, and Dr. Jacob L. Everhardy, secretary-treasurer, all of Leavenworth.—Neosho County Medical Society has elected Dr. William E. Royster, president; Dr. William E. Barker, vice-president; Dr. Andrew M. Davis, secretary, and Dr. Ralph A. Light, treasurer, all of Chanute.—Shawnee County Medical Society, at its annual meeting in Topeka, elected Dr. Melanethon C. Porter, president; Dr. Samuel A. Johnson, vice-president; Dr. H. Milton Connor, secretary, and Dr. John N. Beasley, treasurer, all of Topeka.

KENTUCKY

Officers Selected.—At the annual meeting of Christian County Medical Society, held in Hopkinsville, the following officers were elected: president, Dr. Oscar E. Wright, Hopkinsville; secretary, Dr. William S. Sandbach, Casky; censor, Dr. John H. Rice, Hopkinsville, and delegate to the state association, Dr. Austin Bell, Hopkinsville.

Cocain Recommended in School Text-Book.—At a recent meeting of the State Board of Health, held in Louisville, action was taken on a text-book in physiology used in the public schools of the state, condemning it because it recommends the use of cocain in toothache. A committee was appointed to draft a bill for presentation to the next legislature empowering the State Board of Health to act in conjunction with the State Board of Education in selecting text-books on physiology, chemistry, anatomy and hygiene for use in the public schools.

Louisville Temporary City Hospital Located.—The hospital commission has definitely decided the question of the location of the temporary hospital in which are to be housed the patients of the City Hospital during the building of the new hospital. The vote was a unit in favor of the University of Louisville Medical Department building at 517 S. Sixth Street. The engineer of the commission reported that the building can be made to accommodate 201 beds and that the probable cost of converting it into a temporary city hospital would be from \$12,000 to \$15,000. A letter will be sent to each architect in Louisville inviting plans for the new building.

MARYLAND

Election.—At the annual meeting of the Anne Arundel County Medical Society, held January 12, the following officers were elected: president, Dr. Thomas H. Brayshaw, Glen Burnie; vice-president, Dr. Jesse O. Purvis, Annapolis; secretary, Dr. Louis B. Henkel, Jr., Annapolis; treasurer, Dr. Frank H. Thompson, Annapolis; censors, Drs. Harry B. Gantt, Millersville; William S. Welch, Annapolis, and John T. Russell, Annapolis; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. Charles R. Winterson, and alternate, Dr. Samuel H. Anderson, Woodwardville.

Baltimore

Conference on Mental Hygiene.—During the week ending February 6; a national exhibit and conference on mental hygiene will be conducted in the hall of the Medical and Chirurgical Faculty of Maryland. A publicity committee has been appointed, of which Dr. Harvey G. Beck is chairman. The exhibit will be under the charge of Dr. Marshall L. Price, secretary, secretary of the State Board of Health.

MICHIGAN

Location for County Sanatorium Fixed.—The Houghton County Tuberculosis Sanatorium will be located on the grounds of the County Poor Farm, overlooking Portage Lake.

Bequest.—Harper Hospital, Detroit, has received a bequest of \$35,000 for the endowment of free beds for men, women, boys and girls in that institution by the will of the late Octavia Bates Williams of Baltimore.

Sanatorium Opened.—The Detroit Tuberculosis Sanatorium, situated on Twelfth Street, just north of the city limits, was formally dedicated January 15. Dr. William A. Spitzley has been appointed attending surgeon of the institution.

Personal.—Dr. Warren H. Taylor, Flint, has been selected as physician for Genesee county.—Dr. Roy T. Urquart, Grand Rapids, sustained painful injuries by crushing his thumb in a car door in South Bend, Ind., January 13.

The Late Small-Pox Epidemic.—The cost of the late small-pox epidemic to the city and county of Saginaw has been about \$75,000.—A bronze medal is to be presented to each member of the National Guard of Michigan who did duty at the Michigan Home for the Feeble-Minded, LaPeer, during the recent enforced small-pox quarantine.

Gubernatorial Appointments.—Governor Osborn, on January 5, sent to the senate his list of appointments, which includes Dr. Leartus Connor, Detroit, as member of the State Board of Health; Dr. Charles W. Hitchcock, Detroit, as member of the board of trustees of the Eastern Michigan Asylum, and Dr. Joseph B. Griswold, Grand Rapids, as a member of the board of trustees of the Michigan Soldiers' Home.

Illegal Practitioners Fined.—George W. Lands, East Gilead, convicted in the circuit court at Coldwater of practicing medicine without a license, is said to have been found guilty

and sentenced to pay a fine of \$75 and costs, amounting to a similar sum, or imprisonment in jail for fifty days.—Albert Churchill, Pellston, is said to have been fined \$35 recently for the unlawful practice of veterinary medicine.

Regulates Admission of Patients to Hospital.—The Board of Regents of the University, on the recommendation of the medical faculty, has limited admission of patients to University Hospital to those whose admission is provided for by statutes; students in actual attendance at the university, emergency cases and patients sent to the hospital by a legally qualified physician. All other persons seeking admission to the hospital must make affidavit that they are not able to pay the ordinary charge of a physician. The abuse of the facilities of the hospital has not been extreme but has been sufficient to justify this action of the Board of Regents.

Farm School for Deficient Children.—At a meeting called by the Board of Education of Detroit, January 16, to arouse public sentiment in favor of establishing a farm training school for mentally deficient children, Dr. Henry H. Goddard and the superintendent, E. R. Johnstone of the New Jersey School for the Feeble-Minded, Vineland, delivered addresses. It was shown that on the average 3 per cent. of the children are imbeciles of various grades or idiots, making about 1,600 in Detroit at present; that nine-tenths of these are uncared-for children who cannot keep up in regular schools, notwithstanding the employment of special rooms for backward children; that these children largely recruit the criminal and pauper classes; that it is cheaper for the state to care for these patients in an institution which can be made largely self-supporting than to support them as criminals and paupers; and that heredity is the great cause of mental deficiency. It was urged that mentally deficient children be differentiated from simply dull children, by modern psychologic tests, and that these children be kept for life in a suitable public farm institution, that there they would be happier and more useful than at home, and would be prevented from propagating their kind.

MINNESOTA

Freed of Responsibility.—In the suit against Dr. Alexander R. Colvin, St. Paul, for damages alleged to have been received by a patient in the use of a defective brace, the jury decided in favor of Dr. Colvin.

Damages for Autopsy.—A jury in Minneapolis, January 13, is said to have returned a verdict of one dollar against Dr. S. Marx White, in a suit in which the plaintiff sued to recover \$5,000 on the ground that a number of physicians had entered his home without permission and had dissected the body of his 2-year-old daughter who had died from anterior poliomyelitis, with the view to determine the manner in which the child had contracted the disease.

Elections.—At the annual meeting of the Minnesota Valley Medical Association held in Mankato, the following officers were elected: president, Dr. Louis A. Fritsche, New Ulm; *vice-presidents, Drs. Herbert B. Aitkens, LeSueur Center, and John J. O'Hara, Janesville; secretary, Dr. Adolph G. Liedloff, Mankato, and treasurer, Dr. George F. Merritt, St. Peter.—Blue Earth County Medical Society held its annual meeting in Mankato, recently, and elected the following officers: president, Dr. Adolph G. Liedloff, Mankato; vice-president, Dr. Charles E. Bigelow, Madison Lake; secretary, Dr. Thomas C. Kelly, Mankato; treasurer, Dr. Lida Osborn, Mankato, and censors, Drs. John W. Andrews and Edward W. Benham, Mankato.—The annual meeting of Park Region District and County Medical Society was held in Fergus Falls, January 12. Dr. Otto M. Hangan, Fergus Falls, was elected president; Dr. Andrew J. Gilkinson, Osakis, vice-president; and Dr. Luther A. Davis, Dalton, secretary-treasurer.

MISSOURI

Personal.—The governor of Missouri has refused to accept the resignation of Dr. Daniel Morton, St. Joseph, colonel and chief surgeon of the National Guard of Missouri.

Charge Dismissed.—Dr. James R. Hull, Monroe City, accused fourteen months ago of the murder of Prof. John T. Vaughn, was freed of the charge in the Circuit Court of Lancaster, January 2.

Bequest to Hospital.—By the will of the late Edward Knell, Carthage, \$1,000 is bequeathed to the Carthage Hospital Association as a trust fund, the proceeds to be used in giving hospital benefits to poor and needy individuals of Carthage.

Health Board Election.—The State Board of Health, at its annual meeting in Jefferson City, January 9, elected Dr.

Ernest F. Robinson, Kansas City, president; Dr. Frank B. Fuson, Springfield, vice-president; and Frank B. Hiller, Kahoka, secretary.

St. Louis

Donation for Hospital.—Joseph Shoenberg, L. D. Shoenberg and August, members of the Jewish Charitable Educational Union, have each given \$25,000 toward the erection of a National Hospital in Denver.

State Masonic Sanitarium.—The Board of Directors of the Masonic Home has decided to erect a sanitarium, to cost \$100,000, on the grounds of the home, Delmar Avenue, providing accommodation for forty-two patients.

Hospital Saturday and Sunday.—As the result of the collection on Hospital Saturday and Sunday, fourteen checks, making a total amount of \$42,009.30, have been sent to fourteen hospitals of the city, the amounts varying from \$11,719.33 to the St. Louis Children's Hospital, to \$250 to Provident and St. Louis Maternity hospitals.

Antituberculosis Society Elects Directors.—At the annual meeting of the St. Louis Society for the Relief and Prevention of Tuberculosis, January 12, thirty-five directors were elected, including the following physicians: Frances L. Bishop, James Stewart and John C. Morfit. Dr. Morris C. Tuholske, secretary, and Dr. Theodore W. Conzelman, treasurer of the society, presented their resignations.

NEBRASKA

Physician Goes to Penitentiary.—The supreme court, on January 11, affirmed the sentence of the lower court, which charged Dr. William H. Johnson, Lincoln, formerly of Wymore, with complicity in the death of Amanda Mueller who died from the effects of a criminal operation, and sentenced him to two years imprisonment in the penitentiary.

Personal.—Dr. William B. Kern, Grand Island, has been appointed superintendent of the State Hospital for the Insane, Hastings. Dr. John T. Hay, Lincoln, of the institution at Lincoln, and Dr. Andrew Johnson, Omaha, of the institution at Norfolk.—Dr. William Edmond, Nebraska City, has been appointed physician at the Institute for the Blind, vice Dr. Frank S. Marnell, Nebraska City, resigned.—Dr. Charles A. Oaks, Seward, has been appointed a member of the staff of the Hastings State Hospital.—Dr. Lewis A. Fairchild, Peru, who has been seriously ill, is reported to be convalescent.—Dr. Henry S. Bell has been appointed physician to the State Industrial School, Kearney.—Drs. Frederick H. Kuegle, Westpoint, and H. R. Carson, Omaha, have been appointed physicians to the State Hospital, Hastings.—Dr. James G. Muir has been appointed surgeon of the Soldier's Home, Milford.—Dr. Harry J. Wertman has been appointed physician of the Industrial Home, Milford.

Society Meetings.—At the annual meeting of the Omaha-Douglas County Medical Association, held in Omaha, January 10, Dr. Leroy Crummer was elected president; Dr. Burton W. Christie, vice-president; Dr. Robert R. Hollister, secretary (reelected); Dr. Millard Langfeld, treasurer (reelected); and Dr. John E. Summers, Jr., member of the board of censors (reelected), all of Omaha.—Fillmore County Medical Society, at its annual meeting in Fairmont, elected Dr. Joseph Bixby, Geneva, president; Dr. Frederick L. Beck, Geneva, vice-president; Dr. Jesse M. Carr, Fairmont, secretary-treasurer; and Dr. V. V. Smrha, Milligan, censor.—Webster County Medical Association, at its annual meeting, reelected the following officers: president, Dr. Robert Damerell, Red Cloud; secretary, Dr. Hugh S. Reed, Guide Rock; and treasurer, Dr. Ira A. Pace, Guide Rock.—Elkhorn Valley Medical Society, at its annual meeting, held in Norfolk, January 11, elected the following officers: president, Dr. William R. Peters, Stanton; vice-presidents, Drs. Anders P. Overgaard, Fremont, and William L. Crosby, Beemer; and secretary, Dr. Harry L. Wells, West Point.

NEW JERSEY

State Medical Society Meeting.—At a meeting of the board of trustees of the Medical Society of New Jersey, January 12, it was decided to hold the annual meeting of the society at Spring Lake, June 13-15.

Gaynor Memorial.—The Gaynor Memorial Fund, amounting to \$15,184.73, has been presented to St. Mary's Hospital, Hoboken. Of this amount, \$5,000 is to endow a bed in the hospital to be known as the Gaynor bed. The balance will be applied toward the reduction of the debt on the hospital.

Officers of Home for Incurables Elected.—At the annual meeting of the Bide-A-Wee Home, held in Atlantic City, Jan-

uary 4, the following were elected as members of the medical board: Henry T. Harvey, Philadelphia, and Bernard R. Lee, Elisha C. Chew, Arthur E. Ewens and W. Edgar Darnell, consulting surgeons, all of Atlantic City. The Bide-A-Wee Home is a state institution for incurables and is located in the lower part of Longport.

Elections.—At the annual meeting of the Passaic City Medical Society, January 12, Dr. George T. Welch was elected president; Dr. Leo H. Joyce, vice-president; Dr. Joseph H. Oram, secretary, and Dr. Thomas Glasgow, treasurer.—Monmouth County Medical Society, at its annual meeting elected Dr. Peter P. Rafferty, Red Bank, president; Dr. Joseph T. Welch, Long Branch, vice-president; Edwin Field, Red Bank, secretary, and Dr. Isaac S. Long, Freehold, treasurer.

NEW YORK

State Hospital for Cancer Patients.—After ten years of research work supported by state funds, Dr. Harvey Gaylord has announced that he is prepared to supply a serum which has been shown to be effective in treating cancer. Senator Loomis has introduced a bill into the legislature appropriating \$65,000 for the erection of a hospital adjoining the laboratory in Buffalo. The land for the building is to be donated to the state and the bill names as trustees of the institution, Drs. Roswell Park, William H. Gratwick and Charles Cary, Buffalo, John G. Milburn and Charles S. Fairchild, New York City, and Frederick S. Stephens, Attica.

State Tuberculosis Hospital Report.—During 1910 the State Hospital for Incipient Tuberculosis at Raybrook received 128 patients. Of these ninety, or 73.13 per cent. were discharged apparently recovered, meaning that examination showed that all constitutional symptoms or expectoration of bacilli had not been seen for a period of three months, and that physical signs indicated healed lesions. Of the remaining incipient cases, in twenty-four patients, or 19.53 per cent., the condition indicated arrest of the disease. Of the seventy-nine received in moderately advanced stages of the disease, four, or 5.43 per cent., apparently recovered, and forty-one, or 56.14 per cent., showed arrest of the disease. Of the twenty-five patients received in advanced stages of the disease, five, or 20 per cent., were benefited to the extent that the progress of the disease was arrested. Of the total number of patients treated and considered medically during the year 42.29 per cent. were classified as apparently recovered, and 84 per cent. had derived appreciable benefit.

New York Hospital Buys New Site.—This institution has bought as a site for a new home the entire block bounded by Fifty-Fourth and Fifty-Fifth Streets and Eleventh and Twelfth Avenues at a cost of about \$1,000,000. This site was chosen because it provides amply for light and fresh air, being bounded on the west by the Hudson River and on the south by De Witt Clinton Park. It is stated that the proposed group of buildings will surpass any similar group in the city, but ground will not be broken for a year. The New York Hospital is the oldest hospital in the city, having been chartered by the authority of King George III in 1771. In 1775, when the first building was complete, it was nearly destroyed by fire and it was not until 1791 that the hospital was enabled to begin its work. Among the governors of the institution in bygone days were John Adams, Aaron Burr, Thomas Buchanan and John Jay. During the past year the hospital and associated institutions treated about 70,000 patients and answered 9,000 ambulance calls.

New Commitment Plan.—At the convention of the State Bar Association in Syracuse on January 20 the report of the special committee on the commitment and discharge of the criminal insane was discussed and the following was offered in the place of Section 20 of the penal law:

If on the trial of any person accused of any offence it appears to the jury on the evidence that such person did the act charged, but was at the time insane, so as not to be responsible for his actions, the jury shall return a special verdict, "guilty, but insane," and thereupon the court shall sentence such person to confinement in a state asylum for the criminal insane for such term as he would have had to serve in prison but for the finding of insanity; and if on the expiration of such term it shall appear to the court that such person is still insane, his confinement in such asylum shall continue during his insanity; and further, when such a verdict of "guilty, but insane," is returned in a case where the penalty for the verdict of guilty against a sane person is death, such sentence for the insane person thus found guilty shall be for life, and in all such cases the governor shall have the power of pardon after such inquiry as he may see fit to institute, on the question whether it will be safe to the public to allow such person to go at large.

The report will be circulated broadcast throughout the state for the purpose of arousing public opinion.

Buffalo

Election of Officers.—At the annual meeting of the Erie County Medical Society, held in Buffalo, the following officers were elected: president, Dr. Daniel V. McClure; vice-president, Dr. Thomas H. McKee; secretary, Dr. Franklin C. Gram; treasurer, Dr. Albert T. Lytle; censors, Drs. John H. Grant, Francis E. Fronczak, Arthur G. Bennett, George L. Brown and Lawrence Hendee; and delegates to the state society, Drs. John H. Pryor, Frederick C. Busch, Edward Clark, George J. Eckel and Eli H. Long.—The Buffalo Physical Education Society has elected the following officers: president, Dr. James W. Putnam; vice-president, Dr. Lesser Kauffman, and secretary-treasurer, Miss Alta J. Wiggins.

Hospital Situation in Buffalo.—A report submitted by invitation to the joint hospital committee of the Buffalo Common-Council by the standing Committee on hospitals of the State Charities Aid Association summarizes the situation as follows:

1. The present hospital situation in Buffalo is such that a new hospital must be built either by the county or by the city.

2. This new hospital should be separated entirely from any connection with the poor department and the almshouse. It is not meant for paupers, and it requires different standards of administration.

3. This hospital should provide for a minimum of 720 beds: 200 for tuberculosis, 200 for chronic cases, 100 for acute cases, 200 for contagious cases and 20 for detention cases.

4. It will be more economical for the community to build and maintain one general hospital than to build and maintain two separate institutions under different management.

5. A general municipal hospital should be built by the city, which is the logical body to have control, inasmuch as it furnishes 85 per cent. of the money and 90 per cent. of the patients.

6. The construction and management of the hospital should be entrusted to a board of managers as provided by Chapter 558 of the laws of 1910.

7. The hospital should be centrally located to insure better attendance by physicians, avoid long transportation of the patients, and secure better service and more convenience for the people.

8. The hospital should be built in accordance with a comprehensive plan adequate for the rapidly increasing needs of the growing city.

New York City

Brooklyn Hospital Out of Existence.—The Long Island Throat Hospital and Ear Infirmary has turned over its building, valued at \$15,000, to the Brooklyn Eye and Ear Infirmary as it felt that the latter institution was better prepared to carry on the work.

Italian Medical Society.—The officers of the New York Italian Medical Society for the current year are as follows: president, Dr. Antonio Stella; vice-presidents, Drs. Paolo Virdone, Brooklyn, and Giuseppe DiSanti; secretary, Dr. Rocco Bellantoni; and treasurer, Dr. Antonio Vernaglia.

Office Building for Physicians.—Plans have been filed for a new office building on Madison avenue, twenty-five stories in height, to be occupied exclusively by physicians and dentists.—The Physicians' Building, 40 East Forty-First Street, was opened for inspection, January 13. The space in the building is said to be almost entirely rented to physicians.

Finances of Academy of Medicine.—The report of the treasurer of the New York Academy of Medicine for the year ended December 15, shows the following assets: building and land, \$504,426.59; mortgages, \$117,500; savings banks, \$7,226.36; library, \$80,000; unpaid dues, \$535; rents due, \$125; cash on hand, \$14,859.17; total, \$724,672.12. The liabilities show the following: trust funds, \$629,152.95; unexpended balances in trust funds, \$3,433.85; prepaid dues, \$165; total, \$632,751.80. Excess of assets over liabilities, \$91,920.32.

Bellevue Alumni Prizes.—The two annual prizes of \$100 each offered by the society of the Alumni of Bellevue Hospital to the members of the house staff for the best papers based on observation and clinical study have been awarded this year to Drs. Alexander Hunter Schmitt for his essay on "The Relation of the Cervical Smear to the Diagnosis and Treatment of Diseases of the Fallopian Tubes," and to Dr. Frederick Lane Brown for his "Report of a Case of Infective Endocarditis Associated with an Unidentified Liquefying Bacillus."

Campaign to Supply Milk for Babies.—The Committee on Infant Mortality, of which Dr. Godfrey R. Pisek is chairman, started its campaign to raise \$300,000 for the yearly maintenance of sixty milk stations throughout the Borough of Manhattan at a meeting held at the Plaza Hotel. On this occasion it was announced that the city budget for 1911 contains an appropriation of \$40,000 for the support of milk stations. Dr. Abraham Jacobi argued that more could be done to lessen infant mortality by sending nurses into the home to explain to mothers than by lengthy lectures from eminent doctors.

Child Welfare Exhibition.—After a year's work by 300 specialists and 1,500 other persons interested in children, the Child Welfare Exhibit opened on January 18 in the Seventy-First Regiment Armory at Park Avenue and Thirty-Fourth Street. The primary object of the exhibit is to educate parents in the proper upbringing of children, considered from every possible point of view. Conferences are held every afternoon and evening and the subjects discussed embrace education, homes, recreation, work, health, law and the child and private philanthropy. Experts and specialists from all parts of the country will take part in these conferences. The exhibit will continue for several weeks.

Scholarship in Ophthalmology.—A scholarship in ophthalmology has been founded by the sons and daughter of Abram DuBois, who have presented Columbia University with \$18,000 for a fund to be known as "The Dr. Abram DuBois Memorial Fund." The scholarship is open to graduates of the College of Physicians and Surgeons who have satisfactorily completed a term of service in an eye hospital, and have given evidence of serious intention of pursuing ophthalmology as a specialty. The income from the fund amounts to about \$700 a year, and the holder of the scholarship is expected to devote himself to postgraduate study in foreign and American universities, preferably of a scientific character in connection with ophthalmology.

Anniversary Meeting.—The Society of the Alumni of Bellevue Hospital will celebrate its twenty-fifth anniversary February 28. There will be a reunion at the hospital in the afternoon with a staff reception, visits to wards and operating rooms and opportunity for examination of the present work of the institution. In the evening a reception will be held, followed by a banquet. The society numbers 332, each of whom must possess diploma showing his service on the hospital staff, with the exception of the permanent associate members, those who have been on the visiting staff for at least five years, and honorary members, of whom there are three, Drs. William T. Councilman, Boston, William J. Mayo, Rochester, Minn., and William Osler, Oxford, England.

Bequests to Charity.—The will of the late George L. Fox of Brooklyn bequeaths almost his entire estate valued at more than a million dollars to various charities. The following institutions have received gifts: Eastern District Hospital and Dispensary, \$100,000; St. Catherine's Hospital, \$25,000; Brooklyn Hospital, \$20,000; St. Mary's Hospital, \$25,000; German Hospital, \$25,000; Jewish Hospital, \$25,000; Home for Consumptives, \$10,000; St. John's Hospital, Long Island City, \$20,000, and New York Ophthalmic and Aural Institute, \$10,000. The residuary estate, the value of which has not yet been computed, is bequeathed to the Brooklyn Bureau of Charities and the Brooklyn Association for Improving the Condition of the Poor. A substantial part of the residue is to be used for the benefit of crippled and blind children.—The will of the late Isaac Stern gives Mount Sinai Hospital, of which Mr. Stern was the president, \$10,000 for the creation of the Isaac and Virginia Stern Endowment Fund.

The Prevention of Insanity.—The first public meeting in the campaign for the prevention of insanity was held at the New York Academy of Medicine, December 23. The meeting was conducted by the committee on mental hygiene of the State Charities Aid Association. Homer Folks advocated a campaign of publicity and education similar to that employed in the fight against tuberculosis. Dr. Albert Warren Ferris, president of the State Commission in Lunacy, stated that there was one insane person to every 279 of the population. He considered the use of alcoholic beverages the greatest cause of insanity and thought that immigration was also responsible for filling insanity wards. Dr. M. Allen Starr thought that many of the external causes of insanity could be controlled and urged the establishment of more dispensaries for the treatment of this form of disease. Pamphlets pointing out the causes of insanity and describing the early symptoms have been prepared for general distribution.

The Gibbs Memorial Prize.—The New York Academy of Medicine announces that five of its members will constitute a permanent committee of award for the Edward N. Gibbs Memorial Prize for Research on Diseases of the Kidney. The committee will also select the candidates. The award is to be advertised at intervals of not less than two years in medical journals and otherwise. Candidates must be physicians of not less than three years' experience, must be residents of the United States, and must furnish evidence of research already performed and of ability to prosecute the special work required. The research is to comprise original work on the causation, pathology, or new methods of treatment of diseases of the kidney. From the applicants the committee selects

the one offering the best credentials, who shall from time to time be awarded the income of the prize fund for a term not to exceed three years, but it at all times retains the power to reject any unsatisfactory work. The completed research is to be presented in the form of a thesis bearing an appropriate title.

NORTH DAKOTA

Personal.—Dr. Howard A. LaMoure, superintendent of the State Hospital for Feeble-Minded, Grafton, has resigned and has been succeeded by Dr. Arthur R. T. Wylie, first assistant in the Minnesota Home for Feeble-Minded, Faribault.—Dr. and Mrs. N. Oliver Ranstad, Bismarek, have returned from Europe.—Dr. P. J. Weyrens, Sheldon, has been appointed physician of Ransom county.

Society Meetings.—Medical men of Hettinger County met in New England recently and organized the Hettinger County Medical Association and elected the following officers: president, Dr. James W. Stribling, New England; vice-president, Dr. J. Hamilton, Bentley, and secretary-treasurer, Dr. Fred T. Rucker, Mott.—At the annual meeting of the Stutsman County Medical Society, Dr. Gustave Goldseth, Jamestown, was elected president; Dr. Gilbert D. Todd, Medina, vice-president; Dr. William W. Wood, Jamestown, secretary-treasurer; Dr. W. Albert Gerrish, Jamestown, censor, and Dr. Adolphus W. Guest, Jamestown, delegate to the state society.

OHIO

Midwives Arraigned.—During the last week seven midwives of Cleveland were arraigned and fined for illegal practice. The fines were suspended and the women warned to obey the law in the future.

In Penitentiary.—Among the prisoners received at the state penitentiary, Columbus, December 27, was Dr. Andrew A. Pew, Dayton, recently convicted of performing an illegal operation and sentenced to five years' imprisonment.

Isolation Hospital Opened.—Cleveland has just opened a contagious disease hospital which has cost \$135,000, and is said to be one of the finest and most modern in the country. The building is divided into four distinct sections and can accommodate 100 patients and 22 nurses.

State Meeting-Place and Date Fixed.—The Council of the Ohio State Medical Association, at its meeting in Cleveland, January 12, decided to hold the next meeting of the association in Cleveland, May 8 to 11. The Chamber of Commerce and the Engineers' Auditorium are selected as meeting places.

Barker in Cleveland.—Dr. Lewellys F. Barker of Johns Hopkins University gave an address before the Cleveland Academy of Medicine, January 16, under the auspices of the Western Reserve Chapter of the Alpha Omega Alpha Medical Fraternity. Following the meeting a smoker was held in honor of Dr. Barker at the University Club.

Gift to Hospital.—The Babies' Dispensary and Hospital, Cleveland, has received a donation of \$100,000 from Mr. and Mrs. J. H. Wade as a memorial to Mrs. Anna R. Wade. This gift will enable the hospital to pay in full for the new dispensary and milk laboratory now under construction, and also for the purchase of sufficient land to give a frontage of 175 feet on East Thirty-Fifth Street. The new building will be ready for occupancy February 1.

Elections.—At the annual meeting of the Portage County Medical Society, held in Ravenna, January 12, the following officers were elected: president, Dr. Joseph H. Krape, Kent; vice-president, Dr. Eugene B. Dyson, Rootstown; secretary, Dr. Cyrus O. Jaster, Ravenna (reelected), and treasurer, Dr. Emily J. Widdecombe, Kent (reelected). At the annual banquet given by Dr. Wilford W. White, Ravenna, the retiring president, Dr. T. Clarke Miller, Massillon, delivered an address on "The Conservation of Human Life."—The Cleveland Academy of Medicine, at its annual meeting, elected the following officers: president, Dr. Walter B. Laffer; vice-president, Dr. William W. Holliday; secretary, Dr. Oliver A. Weber; treasurer, Dr. John E. Darby, and trustees, Dr. William T. Corlett and Clyde E. Ford.

OKLAHOMA

State Board President Acquitted.—Dr. William T. Tilly, Muskogee, president of the State Board of Medical Examiners, was charged with criminal libel on complaint of Dr. J. D. Hensley, Oklahoma City; the jury, on instruction from the court, found that the information was insufficient to sustain the charge, returned a verdict of not guilty.

Personal.—Dr. John Dice McLaren, of the State University, of Oklahoma, Norman, professor of physiology and experimental medicine, and secretary of the Medical School of the State University of Oklahoma, Norman, has resigned to accept the professorship of physiology in the Oregon State University Medical Department, Portland.—Fire in Lawton, December 30, caused \$1,400 damage to the office of Dr. Henry A. Angus, and \$250 to the office of Dr. John W. Malcolm.

Physician Wins Libel Suit.—Dr. G. F. Border, chief surgeon of the Border Hospital, Mangum, is said to have recovered judgment in the case brought in the Greer County District Court for \$50,000 against Drs. Milton M. Dearmon, Thomas J. Dodson and Porter Norton, who are said to have written a libelous letter to the Pottawatomie County Medical Society, January 11, 1909. The presiding judge instructed the jury that the communication complained of was libelous and unprivileged.

Annual Elections.—The sixteenth annual meeting of the Central Oklahoma Medical Association was held in Enid, January 10. The following officers were elected: president, Dr. Fred H. Clark, El Reno; vice-presidents, Drs. Edwin D. Ebright, Enid, and Charles E. Thompson, Kremlin, and secretary-treasurer, Dr. M. M. Rollin, Oklahoma City.—Canadian County Medical Association, at its annual meeting in El Reno, elected Dr. Ralph F. Koons, president; Dr. Stephen S. Sanger, Yukon, vice-president; Dr. James T. Riley, El Reno, secretary-treasurer; Dr. Thomas M. Aderhold, El Reno, delegate to the state association, and Dr. Ralph E. Runkle, El Reno, censor.—Garfield County Medical Society, at its annual meeting in Enid, elected Dr. Mahlon A. Kelso, Enid, president; Dr. Jones, secretary; Dr. Wallace A. Aitkin and Chanley J. Lukens, Enid, censors.—At the annual meeting of the Oklahoma County Medical Society, at Oklahoma City, Dr. Robert M. Howard was elected president; Dr. John A. Reck, vice-president; Dr. William R. Bevan, secretary, and Dr. Arthur A. Will, censor, all of Oklahoma City.—Comanche County Medical Association, at its annual meeting, held in Lawton, elected the following officers: president, Dr. Jackson Broshears, Lawton; vice-president, Dr. T. J. Gipson, Taupa, and secretary-treasurer, Dr. David A. Meyers, Lawton.—The annual election of officers of the Tulsa County Medical Association resulted as follows: president, Dr. Ross Grosshart; vice-president, Dr. Paul R. Brown; secretary, Dr. Walter E. Wright, and treasurer, Dr. Seth De Z. Hawley.

PENNSYLVANIA

Philadelphia

Failed to Register Births.—Information charging sixteen physicians of the city with failure to register births were made by the state health authorities, January 11. The arrests are only formal.

Institute of Anatomy.—The old Philadelphia Dental College at Eleventh and Clinton Streets, which was purchased several months ago by Jefferson Medical College for \$45,000, is to undergo extensive remodeling, and on completion will be conducted in connection with the college, as the Daniel Baugh Institute of Anatomy.

Personal.—Dr. Edgar Fahs Smith was the guest of honor at a dinner given by his associates in the chemical laboratory of the University of Pennsylvania, at the University Club on January 11.—Dr. Gwilym G. Davis has been made professor of orthopedic surgery in the University of Pennsylvania.—Dr. Alfred Heineberg has been made chief of the gynecologic clinic of Mount Sinai Hospital.—Dr. H. Brooker Mills has been elected assistant professor of pediatrics in the Medico-Chirurgical College of Philadelphia.

Officers Elected.—At a meeting of the Philadelphia Pediatric Society, January 10, the following officers were elected: president, Dr. James T. Rugh; vice-presidents, Drs. Theodore LeBoutillier, Arthur Newlin and William N. Bradley; secretary, Dr. Maurice Ostheimer; treasurer, Dr. Howard C. Carpenter, and librarian, Dr. Charles F. Judson.—Philadelphia County Medical Society, at its meeting, January 18, elected the following officers: president, Dr. Christian B. Longenecker; first vice-president, Dr. Levi J. Hammond; associate vice-presidents, South Branch, Dr. William N. Bradley; Kensington Branch, Dr. Thomas R. Currie; West Branch, Dr. Henry D. Jump; Northeast Branch, Dr. Frank Embery; Southeast Branch, Dr. Aaron Brav; secretary, Dr. William S. Wray; assistant secretary, Dr. Herbert B. Carpenter; treasurer, Dr. Collier L. Bower, and censor, Dr. Lewis H. Adler, Jr. The society passed resolutions urging an investigation by a state commission of the appropriations from the state treasurer to hospitals, and also suggested the appointment of a joint committee of the senate,

house of representatives, the State Board of Charities, and licensed physicians to investigate state institutions.—The South Branch of the Philadelphia County Medical Society, at a meeting December 30, elected Dr. Stuart C. Runkle, president; Dr. William N. Bradley, vice-president; Dr. Paul B. Cassidy, secretary.—West Philadelphia Medical Society, at a meeting, January 2, elected Dr. Hiram L. Lutz, president; Dr. Charles P. Pike, vice-president; Dr. Henry G. Munson, corresponding secretary; Dr. Walter M. Miller, financial secretary, and Dr. Edmund L. Graf, treasurer.—At the annual meeting of the College of Physicians and Surgeons, January 4, Dr. George E. deSchweinitz was reelected president; Dr. James C. Wilson, vice-president; Dr. Thomas R. Neilson, secretary; Dr. Richard H. Harte, treasurer; Dr. Frederick P. Henry, honorary librarian; Dr. Francis X. Dercum and William T. Shoemaker, councilors; and Drs. Richard A. Cleemann, S. Weir Mitchell, Arthur V. Meigs and James Tyson, censors.

UTAH

Medical Journal Changes.—The *Utah Medical Journal* announces that it has become an independent journal, with none of its past affiliations. The editorial management is in the hands of Dr. Frederick Clift, Salt Lake City. The associate editors are Dr. Eugene H. Smith, Ogden; Horace G. Merrill, Provo, and Russell J. Smith, Logan.

Personal.—Dr. Charles G. Plummer, Salt Lake City, who has been seriously ill with septicemia at the L. D. S. Hospital, is reported to be improving.—Dr. R. E. Worrell, who underwent operation for septicemia at the Dee Memorial Hospital, Ogden, January 1, is reported to be convalescent.—Dr. John A. Hensel, Eureka, has been appointed physician of Jurab County.

New County Officers.—At the annual meeting of the Utah County Medical Society, held in Provo, Dr. David Westwood, Provo, was elected president; Drs. Oscar A. Grau, Pleasant Grove, vice-president, and Horace G. Merrill, Provo, secretary-treasurer.—At the annual meeting of Salt Lake County Medical Society, Dr. Eugene W. Whitney was elected president; Dr. T. Catlett Gibson, vice-president; Dr. W. Brown Ewing, secretary (reelected); Dr. Robert R. Hampton, treasurer (reelected), and Dr. Robert W. Fisher, censor (reelected).

WASHINGTON

Sanitarium Established at Pasco.—Dr. William W. Watkins, Pasco, has established a sanitarium in that place.

Unlicensed Practitioner Fined.—Fanny Leake Cummings, Seattle, said to have been convicted of practicing medicine without a license, has been fined \$250 and costs.

Health Board Election.—At the annual meeting of the State Board of Health, held in Olympia, January 9, Dr. Edwin L. Kimball, Spokane, was elected president, and Dr. Elmer E. Heg, Seattle, was reelected secretary.

Physicians in House of Representatives.—The House of Representatives of Washington has three physicians as members: Drs. Walter T. Christensen and James A. Ghent, Seattle, and Dr. William M. Beach, Shelton.

Beriberi in Seattle.—One man is said to have died, another to be dying in a hospital, and four others to be seriously ill with beriberi due to an outbreak on the British steamship *Beachy*, which arrived at Seattle recently from China.

Personal.—Dr. Stephen D. Brazeau, Spokane, has returned after a year abroad.—The Cle Elum-Roslyn Hospital Board has elected the following staff: Dr. Edward W. Stimpson, Roslyn, chief surgeon; and Drs. H. H. Keenan and H. Quafe, Roslyn; W. E. Keehl and Julius G. Newgord, Cle Elum, and E. Heston, Jonesville.

Tuberculosis Notes.—The state supreme court has ruled that tuberculosis sanatoriums are nuisances and should not be established in the residence portion of a city. This ruling was made on appeal from the superior court of King County which refused to grant a restraining order against a tuberculosis sanatorium in Seattle.—The Fort Spokane Indian Sanatorium has been closed and the eighteen patients and nurses have been sent to sanatoriums in Phoenix, Ariz., Lapwai, Ida., Ogema, Minn., and Tacoma.

WISCONSIN

Abduction Charge Fails.—Dr. John B. Spalding, health commissioner of Kenosha, who was arrested on a charge of kidnapping, December 23, was exonerated at his trial in Chicago, January 17.

Charges Dismissed.—Charges against F. L. Mertens and Dr. Nelson Washington, charged respectively with practicing med-

icine without a license and with malpractice, were dismissed by stipulation in the circuit court at Milwaukee, January 12.

Fined for Unlawful Practice.—B. W. Kinzie, Milwaukee, charged with unlawful practice of medicine, is said to have been fined \$50 and costs. Sentence was suspended on two counts charging E. R. Binte and B. H. Binte with similar offenses.

Medical Board Wins.—In the case of S. R. Jansheski, Milwaukee, a so-called chiropractic, charged with advertising himself as a physician, the trial consumed five days, and the jury returned a verdict of guilty within thirty minutes. The case was prosecuted by the attorney of the Wisconsin State Board of Medical Examiners.

Personal.—Dr. Frederick W. Byers, Monroe, who has been seriously ill with cerebral hemorrhage, is reported to be gaining slowly.—Dr. Warren B. Hill has been elected president of the trustees of the Emergency Hospital, Milwaukee.—Dr. Robert W. Blumenthal, Milwaukee, who was operated on recently for appendicitis at the Milwaukee Hospital, has recovered.—Dr. Herman L. Nahin has been elected coroner of Milwaukee County, and has appointed Drs. Arthur Reitman and R. O. Friederich as his assistants, all of Milwaukee.—Dr. James R. Kellogg has succeeded his father, Dr. Alonzo C. Kellogg, as a member of the advisory board of the State Tuberculosis Sanatorium, Wales, both of Portage.

GENERAL NEWS

School Hygienists to Meet.—The fifth Congress of the American School Hygiene Association will be held in the Academy of Medicine, New York City, February 2-4, under the presidency of Dr. Luther H. Gulick, New York City. Among the titles on the program are "The Problem of Teaching Sex Hygiene," "Vital Results of Open-Air Kindergarten," "The Relative Communicability, Dissemination and Prevention of Contagious Diseases," "Studies in Fatigue," "The Work of the Public Health Education Committee of the American Medical Association," "What Cities are Doing for the Health of Children," "The Physical Condition of Country as Compared with City Children," "School Instruction in Sex Hygiene" and "Individual Instruction in Personal Hygiene."

Meeting of Medical Reserve Corps.—The officers of the Medical Corps and Medical Reserve Corps of the Army met in Chicago, January 21. Col. L. Mervin Maus, Medical Corps, U. S. Army, presided, and Brigadier-General Bernard J. D. Irwin, Medical Corps, U. S. Army, retired, was the guest of honor. Representatives from the Medical Corps of the Army and Public Health and Marine-Hospital Service were also present. The object of the meeting was to bring together members of the Medical Reserve Corps in Chicago, and get them in closer touch with the medical officers of the united services. Addresses were made by Drs. Arthur D. Bevan, Albert J. Ochsner, Charles L. Mix, E. Wyllys Andrews, George W. Webster and others. It is expected that the next meeting of the corps will be held at Fort Sheridan during the summer.

Fraternity Meets.—The annual meeting of the Phi Chi Medical Fraternity was held in Louisville, December 29-31. The fraternity decided to hold its next meeting in Indianapolis. The resolution proposing to grant charters to no medical school not in Class A, according to the reports of the American Medical Association and the Rockefeller Foundation was not adopted, but it was resolved that hereafter no medical school, not recommended by the American Medical Association, will be given a charter. The following officers were elected: Dr. George W. Leavell, Louisville, grand presiding senior; Dr. J. A. Price, Atlanta, Ga., grand presiding junior; Dr. Thomas B. Pearson, editor-in-chief of the *Phi Chi Quarterly*; Drs. A. B. Elkins and Charles L. Koontz, Louisville, honorary editors; Dr. T. Elmer Grubbs, Los Angeles, associate editor; and Dr. Charles W. Hibbett, chairman of the executive trustees.

Association of American Medical Colleges.—The twenty-first annual meeting of this association will be held in Chicago at the Congress Hotel, February 27-28. The association will consider for adoption the report of the curriculum committee submitted last year, and any amendments which may be proposed, such as the more perfect regulation of the administration of entrance requirements and the elimination of conditions. The report of the committee on pedagogics will consider some very essential phases of medical teaching. The report of the committee on education will contain many recommendations for action. Papers will be read by the following: "Requirements for Admission to the Medical Course," George E. McLean, president, University of Iowa; "The Fifth or Hospital Year," Dr. F. F. Westbrook, University of Minnesota;

"Administration of Entrance Requirements," Dr. B. D. Harrison, Michigan State Board of Registration in Medicine; "The Medical Library," Dr. C. M. Jackson, University of Missouri; "Unity of Purpose; Unity of Action," Dr. J. A. Witherspoon, Vanderbilt University. The secretary is Dr. Fred C. Zapffe, 3431 Lexington Street, Chicago.

Dr. Ashford's Work on Hookworm.—Major Bailey K. Ashford, Medical Corps, U. S. A., who has had charge of the fight against the hookworm in Porto Rico, arrived in New York, on December 26 on the steamer *Caracas*. He called attention, remarks the *Army and Navy Journal*, to the out-of-the-wayness of Porto Rico, as shown by the fact that the medical officers of the army had been fighting the hookworm long before the discovery of the disease in the southern states, and yet the press heralded that discovery as something new. Since 1904 there have been 300,000 cases of hookworm on the island. The Porto Ricans at last awakened from their lethargy when the army medical men proved to them that thousands were dying needlessly through a preventable disease contracted in most cases through the contact of healthy skin with infected earth, the coffee districts appearing to be the most infected. In the five years up to and including a part of 1909, of the thousands of patients treated only 426 have died. Major Ashford will return to his important work as soon as the health of his wife permits. The unflagging zeal of Major Ashford, his untiring enthusiasm and inspiring confidence in the ultimate victory of his crusade have been one of the most striking and beautiful evidences of the personal interest which officers of the service have taken in the work which the results of the Spanish War suddenly threw on them. The very quietness of his campaign against the disease indicates that he finds his reward in results rather than in the applause and notoriety of newspaper laudation.

FOREIGN NEWS

Ten Years of the German Society for Protection of the Economic Interests of the Profession.—This imposing title is generally shortened to the *Leipziger Verband*. This association is now exactly ten years old and numbers 23,500 members. The Verband has been involved in 1,700 disputes between the compulsory sickness insurance societies and their medical officers, and has carried all but a few to a successful outcome. It has also been instrumental in securing positions or locations for 17,000 physicians. This organized force has become a power in Germany, the effects of which are far-reaching and enduring.

Plague in Manchuria.—Cable reports of January 23 state that the epidemic of bubonic plague in Manchuria threatens international danger and that the Chinese government is instructing its ministers abroad to invite the governments to which they are accredited to send experts to the affected districts to study the plague and means for its extermination. The government offers to bear the expense of the crusade. Fudziadian, a suburb of Harbin and the particular plague spot of Manchuria, is to be isolated as the first systematic step to be taken toward exterminating the plague that has grown more threatening every day. This was decided on at a conference of the taotai and English and Chinese physicians said to have been brought about by pressure from the Russian government. The cable dispatch adds that a Russian physician who has just completed an inspection of Fudziadian, discovered three plague sources in the neighborhood of which 7,000 persons reside. Corpses are piled high in the streets and in the yards adjoining the homes. Last week there were 1,500 deaths in Fudziadian, and twenty-four bodies have been picked up in the streets of Harbin. Mukden, Kirin and Tieling have been invaded by the disease. Deaths among the Chinese employees of the Harbin mills are likely to result in the infection being carried in the foodstuffs exported to Amur and the maritime provinces. In the suburbs of Fudziadian the Chinese and European physicians are said to have been beaten by the soldiers.

Festschrift for Kernig's Seventieth Birthday.—The issue of the *St. Petersburg. Wochenschrift* for November 19 is a large *Festnummer* in honor of the seventieth birthday of Woldemar Kernig, the leading internist of Russia. It contains twenty-six articles in German from prominent Russian clinicians who have studied under him in the course of his thirty years' connection with the Obuchow Hospital at St. Petersburg. The list includes Cholzoff's report of his technic and results with suprapubic prostatectomy in two sittings, which he claims is such a harmless operation that even decrepit patients, with the kidneys in bad condition, bear it without injury. The interval between the opening of the bladder and the removal

of the prostate varies from three weeks to three months according to the condition of the patient. He lost three out of eleven patients with prostatectomy done at one sitting, but only one out of the twenty in which this two-sittings technic was followed. Another article is by Wladimiroff on the diagnosis of glanders by the anaphylaxis reaction. Another by L. Krewer discusses the diagnosis of brain syphilis, the very baffling manifoldness of the symptoms being, he says, the clue to the syphilitic origin of the syndrome observed. Among his fifty-nine patients with cerebral syphilis, thirty-five were cured by antisymphilitic treatment and all the others were materially improved except five, that is, 84.8 per cent., who succumbed. In all the fatal cases there had been epileptiform seizures. The absence of an aura with these epileptiform seizures, developing in adults, speaks further for the syphilitic origin, especially when the attacks occur in series, and the convulsion seems to be limited to certain groups of muscles and the consciousness is not entirely lost and does not seem quite intact during the intervals. Abelman reports experiences which sustain the importance of determination of the ferments in the stools and the anti-ferments in the blood as an aid to differential diagnosis in children. A historical sketch of cholera in Russia, by F. Dörbek, states that cholera was unknown in that country until 1830, when the first epidemic of cholera invaded Europe, and here, too, by way of Russia, starting in Astrachan, after it had been smouldering in India for fourteen years.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, Dec. 13, 1910.

Plague in Shanghai, China

The health authorities of Manila have been closely watching the development and spread of an epidemic of plague in Shanghai, China, which is reported to be still progressing.

There seems little doubt that plague has been effectually stamped out in the Philippines. It has been so long since a case has occurred here that probably no one, however pessimistic, can be found who would venture to make a statement to the contrary. The Bureau of Health is proud of this achievement and resents any statement tending to suggest that the disease still exists here.

The epidemic at Shanghai is of a serious nature and has greatly alarmed the foreign population. The disease is mostly confined to the thickly crowded Chinese section of the town but the inability of the health authorities to cope with the situation, due mostly to the opposition of the Chinese, places the large foreign section in an apprehensive situation. In the beginning of December, it was reported that the Chinese and the foreigners were cooperating in the eradication of the pestilence and were doing effective work quite harmoniously, but now we are informed by cable that "the plague is still taking great toll from the Chinese section of the city but native resentment against the strict attitude of the authorities is proving a great obstacle to its extermination." Deaths from plague are no longer reported because the Chinese are up in arms against sanitary measures. There have been a number of disturbances in the affected districts—shortly after the sanitary measures were first put on there was more or less serious rioting and several persons met death by violence. This seems to have been due to the autocratic attitude of the foreign health authorities in trying to force stringent regulations of modern western sanitation on the Oriental through the medium of the Occidental. As a result they have been compelled to back up and begin again at the proper place but with a serious handicap. It behooves Manila, and perhaps San Francisco and Seattle, to increase their vigilance in regard to inspection of commerce and passengers from or via Shanghai.

The plan of the campaign of eradication of plague as given by the *National Review* (Shanghai) is as follows: "A house-to-house inspection is carried on by women inspectors accompanied by Chinese doctors, both the ladies and the physicians being fully qualified according to western standards. The campaign is under the supervision of Dr. Cox of the health department of the British settlement of Shanghai, at the invitation of the leading Chinese.

"Whenever a case of suspected plague occurs in a house the inmates are sent to the Chinese Isolation Hospital and there are kept under observation, their clothing being meanwhile fumigated and disinfected and their house, immediately they have left it, barricaded off by means of a corrugated iron fence sunk 2 feet deep in the soil and so erected as to leave no loophole through which rats can escape. While the barricading is going on, the interior walls and floors are sprayed

with a disinfectant by means of the hand spray. This operation being over, a quantity of sulphur is placed in iron bowls, and these bowls set floating in tubs of water, one in each room of the house, or block of houses, and when this sulphur is lighted all doors and windows are closed, all crevices and open joints in doors, walls or windows are plastered over with tough brown paper, so that the houses, so far as possible, are without ingress for outside air or egress for the sulphur fumes. Fumigation is allowed twenty-four hours, at the end of which time the doors are opened, and then all hollow ceilings or walls are broken down, when a number of dead rats are always found and these are so disposed of as to prevent their being a source of further infection. When the hollow walls have been destroyed they are replaced by solid brick walls; and in the case of the upturned hollow floors the several inches of rattery, in which has collected the almost indescribable filth that has found its way through the crevices of the frequently rotten floor, are filled up with clean ashes and rubble, to the original level of the floor beams. On this basis of ashes and rubble a layer of cement or asphalt is laid and the floor thus becomes quite solid and too poor to feed a church mouse, let alone a rat. To finish off the work the walls and ceiling are thoroughly whitewashed and then the house becomes habitable again."

The outcome of these measures will be watched with interest for it is the first time that western sanitary measures have been put into effect on so large a scale in time of peace in any Chinese community. Although there seems to be a growing demand for modern medicine in China, still medicine is so closely bound up with religion, superstition and the so-called Oriental philosophy that western medical standards will at best be but slowly adopted.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 6, 1911.

Cremation in France and Abroad

From the official report on funerals it appears that in 1909 there were fewer cremations in France than in 1908. Abroad, the progress of cremation has been marked. In 1909 there were 13,500 cremations in the whole of Europe.

France and Belgium Agree in Regard to the Practice of Medicine on the Common Frontiers

France and Belgium have just come to an agreement according to which practitioners in medicine, surgery and obstetrics, as well as midwives and veterinarians residing in the border communes on either side of the frontier, are authorized to practice in the bordering communes across the line in which there are no resident physicians. The right of practicing in bordering communes of the neighboring country, however, does not give the right of being on a permanent footing there, of becoming domiciled there or of maintaining offices there.

Mineral Waters and Table Waters

To put an end to the numerous abuses in the sale of the so-called mineral waters, the superior council of hygiene of France has just decided that (1) "mineral water" is a water to which therapeutic properties are ascribed; it should be recognized as such by the Académie de médecine of Paris, authorized by the government and exploited under the conditions specified by the official organization; (2) "natural mineral water" in bottles is labeled so that it may be distinguished from other bottled waters; (3) in the exploitation of other waters, especially table waters, the employment of descriptive terms implying therapeutic properties is to be forbidden.

The Will of Dr. Henri Huchard

The late Dr. Huchard has bequeathed to the Académie de médecine a sum of \$20,000 (100,000 francs) to found an annual prize to aid young students, who like his son, Marcel Huchard, in whose memory the prize is founded, are victims to professional devotion and to enable them to continue their studies.

An Institute of Infantile Hygiene

The general council of the department of the Seine has just voted to establish an institute of puericulture, which is to be both a popular center for the dissemination of knowledge of infantile hygiene, and a scientific center for the study of all questions related to infant-feeding, open to students, phy-

sicians, teachers, midwives, etc. Each year, more than 2,500 new-born infants are abandoned in Paris. These infants are to be examined by physicians and some selected to be entrusted to nurses who come regularly from the country to seek the little protégés of the city of Paris. The weakest and most undeveloped infants, and those which have contagious diseases or hereditary taint, are retained. They offer an ample field of study for physicians and students who wish to observe the growth of normal and feeble infants, to study the methods of artificial feeding, etc. But in order that the institute may serve for the popularization of infantile hygiene, Dr. Variot, the superintendent, proposes to install in the asylum a milk station in which unmarried mothers who wish to keep their children will receive aid and medical advice, if they nurse their children themselves, and good sterilized milk, if they are obliged to use the bottle. The new institute also will arrange conferences for teachers, who, according to the new programs, are obliged to give to young pupils the most elementary ideas of the care of children.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 5, 1911.

University Study in Germany

After the foundation of the German empire, the number of matriculates at the German universities increased from about 13,000 at such a remarkable rate that in the eighties the number had doubled and in 1904 had tripled. In the current semester 54,822 are enrolled as opposed to 52,407 in the previous year.

The yearly increase, 2,415, is somewhat smaller than that of the previous year, 3,670. The attraction of the university is moreover felt in neighboring countries; the French universities last year had 42,000 students. Of the entire number at present attending German universities, 52,404 are men and 2,418 women as compared with 50,557 and 1,850 in the previous year. At the ten Prussian universities, there are enrolled this winter 28,675 students (27,244 last year), in the three Bavarian, 9,341 (9,082); in the two Baden, 4,254 (4,101); and in the other six, including the imperial at Strasburg, 12,552 (11,980). The forward movement of physicians has continued, the number being 11,240 (as compared with 10,135 last year and 8,088 five years ago). Also with philologists, philosophers and historians, the marked increase of late years has not yet ceased. The smaller number of Protestant theologic students shows some improvement, as their number has increased to 2,535. There are 1,766 Catholic theologic students. Law students have diminished to a slight extent, their number being 10,890 (12,160), also dentists and students of pharmacy, the former from 1,395 in the previous year to 1,146, the latter from 1,279 to 954. It is interesting to determine the distribution of the German student body among the individual state universities and the changes that have lately occurred in this respect. Erlangen, Würzburg and Giessen have fallen off and the most marked increase has occurred at Halle, Jena, Kiel, Tübingen and Rostock. The University of Berlin retains its prominence, standing at the head with 9,686, and Munich holds the second place with 6,905.

If among the students attending the German universities there are also reckoned the so-called "Gastzuhörer," 3,528 men and 1,772 women, there are at the present time 60,122 persons receiving instruction at the German universities, a number not hitherto reached. The increase of the Berlin university which amounts to 883 students above the previous year is especially to be attributed to the attraction of the jubilee exercises.

In this increase of attendance, women have contributed proportionately more than men. In the various departments, the increase in attendance has been proportionally the greatest among theologic and medical students, the medical including 1,705 men and 159 women. European foreign countries send 841 men and 103 women; and those outside of Europe 145 men and 65 women; 69 more than last year come from America and 69 men from Asia. The Kaiser Wilhelm Academy for instruction in military medicine has this winter 414 students. Study by women has increased so that this winter there are 2,412 women, representing 4.4 per cent. of the German student body, as opposed to 2,169 (3.5 per cent.) last summer. This marked increase depends on an increased attendance from the empire itself and especially from Prussia; there are only 320 foreign women, of whom about half come from Russia and a third from America. In

the different departments of university study, the present women students are distributed as follows: philosophy, philology, history and related studies, 1,370 as compared with 975 last year, medicine by 527, last year 476; natural science and mathematics 356 (287), dentistry 49 (46), civics and agriculture 60 (27), evangelical theology 7 (5) and pharmacy 5 (3).

Every year more and more, the educated women are devoting themselves to two fields; higher work in teaching and medicine. A third of all the female students are found at the University of Berlin, 806 (as compared with 626 last summer). At the ten Prussian universities 1,671 women are enrolled, at the three Bavarian 236, at the two Baden 370 and at the six remaining only 235. In the increase of women students, the Prussian universities have a much greater share than those in southern Germany. With the 1,772 women who are admitted this winter to the university lectures as listeners, the number of women attending the German universities at present amount to 4,184.

Carnegie Foundation for Life-Saving

As you already know from the newspapers, your great philanthropist, Andrew Carnegie, has contributed \$1,250,000 to Germany for the purpose as expressed in his letter to the Kaiser, of diminishing the misfortunes connected with heroic efforts of saving human lives throughout the German empire and on its waters which have as a result the death or the invalidism of the life-savers. As may easily be understood, this new proof of magnanimous philanthropy has produced a great impression in Germany and especially with the emperor, who is peculiarly appreciative of all humanitarian efforts of this sort. In his letter of thanks, the emperor said: "The foundation will contribute to a large extent to the fulfilment in future of the duty of mankind to care for the victims of noble self-sacrifice in a way that has not before been possible. It will arouse in noble men the wish to perform acts of life-saving as they will lose all anxiety for the future of those they leave behind." Among those who are considered especially worthy of assistance are physicians. These are to be represented in the board of trustees of the foundation. The Kaiser himself has assumed the honorary protectorate.

International Exposition of Cripple Aid

An international exposition of aids for cripples will be held in connection with the International Hygiene Exposition in Dresden in 1911 and will have its own pavilion under the charge of the German association for the aid of cripples which will give any required information regarding the exposition through its business bureau (Berlin W. Bayreuther St. 13). Everything dealing with the care of cripples will be arranged in a systematic way in six different groups: (1) historical, developmental, statistical and literary data; (2) medical activity in the care of cripples; forms of disease, methods of treatment, results; (3) schools for cripples, ethical and religious education, practical instruction by schools; workshops; (4) social, legal and economic aspects; (5) building and arrangement of cripple homes and aid stations; (6) the cripple in art and literature. Each group will be arranged by a special overseer so that a complete supervision will be secured.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 3, 1911.

Child Labor in Austria

In a report by the school physicians, attention was called to the fact that the majority of working school children showed a very bad standard of physical fitness for the requirements of life. The matter was investigated by a committee under the auspices of a political party, and the results thus obtained are now brought to the knowledge of legislators with a view to obtaining adequate laws for the protection of children. In Vienna alone, 111,622 children under 14 years were engaged in work at home; 17,355 were employed in other households; 11,100 were working partly at home and partly out of the house, and 1,281 children were, so to say, independent workers, street vendors or the like. That this labor is not harmless is evident from its duration; 23 per cent. of all such children worked less than four hours a day, 37 per cent. were busy for four hours, 20 per cent. for eight hours, 1 per cent. for ten hours daily, 0.3 per cent. even more than that, while the remainder had no definite working hours. These figures

hold good for the winter half year. In summer time the conditions are worse, for the children have to work longer, 7.6 per cent. having a working day of over ten hours. The work is always done by school children. The mental work must be added to the physical work in order to find out the real amount of labor thus demanded of undeveloped individuals. The number of working hours thus arrived at amounted to fifty hours per week on an average; while 8 per cent. had more than sixty hours per week in winter, and more than 72 per cent. of the children in the summer had over sixty weekly work hours. This gives one the impression that the underfed children had longer working hours than the grown-up people.

Attempts to reduce the hours of school attendance for children employed otherwise have resulted only in increase of other work for them. In our country, school attendance is compulsory for all children between 6 and 15. Therefore, they have to sacrifice a good deal of the night to do the work demanded of them. Twenty-three per cent. of all working children had night work too; some had only from two to four weeks per year; some sixteen weeks; others even a longer period and 16 per cent. had night work too all the year round. The financial result of such "sweating" hardly counterbalances the detrimental effects of this system. The reports of the school physicians mention that the health of 103,877 children (75 per cent.) of those examined was unsatisfactory. The effects of physical work on cerebration were manifestly bad. Such a condition naturally affects national health and national power, for in our country military service is also compulsory; the overworked children cannot grow into fit soldiers. Therefore public interest is deeply involved in the proper solution of this problem.

Antituberculosis Campaign at Budapest

Since the International Medical Congress met in Budapest, the public authorities have become attentive to the necessities of modern hygiene, which hitherto have been somewhat neglected in the city. The latest scheme deals with the prevention of tuberculosis. A far-reaching campaign has been worked out by two men who already have done much to bring the public to an understanding on this point, Dr. Tauszk and Dr. Ruthy. One of the most radical features of the plan is the compulsory removal of infected persons into a special tuberculosis district, to be laid out in the hilly northeastern parts of the kingdom. Apart from that, the erection of a sufficient number of sanitariums is also planned. Tuberculosis is very frequent in the capital because of the congestion of the people in a small area. In Budapest, overcrowding is the result of a shameless policy by the houseowners, who have pushed up rents to a prohibitive height for smaller lodgings. In fact, several instances of a lodgers' strike have been witnessed there. The effects on the health of the poorer classes can be easily imagined. Mortality among children is high especially; 30 per cent. of all infants in the poorer population do not reach the end of their first year.

Attempted Organization of Hungarian Contract Practitioners

The contracts which hitherto have been the basis for apportionments of physicians to the industrial work are now being revised by a committee of physicians, who are trying to bring about an organization of the practitioners for this purpose. A strike which broke out recently ended unfavorably for the physicians, owing to the lack of discipline. A quiet but radical agitation is now working to bring about the required and desired union of physicians in Hungary, after which a renewed attempt will be made to improve the present condition of contract practice.

Marriages

PAUL L. ASHLEY, M.D., Wibaux, Mont., to Miss Mabel Reid, at Cleveland, January 16.

PHILIP FRANK SHAFFNER, M.D., to Miss Beatrice Melanie Weil, both of Chicago, January 18.

FREDERICK AUGUSTUS WASHBURN, M.D., to Miss Amy Silsbee Appleton, both of Boston, January 9.

ELMER ELLSWORTH KEPNER, M.D., to Miss Mamie Katherine Smith, both of Cleveland, January 3.

JAMES G. LAMB, M.D., Fisher, Ill., to Miss Elnora Larson of Voorhies, Ill., at Bement, Ill., January 4.

CHARLES RANSOM REYNOLDS, M.D., U. S. Army, to Miss Jane Boyd Hurd of Watkins, N. Y., December 26.

Deaths

William Grier, M.D. Surgeon-General, U. S. Navy, retired, died at his home in Washington, January 11, aged 94. Dr. Grier received his medical education in Baltimore and was appointed assistant surgeon, U. S. Navy, March 7, 1838; was made passed assistant surgeon in 1852; served during the Mexican and Civil Wars; was afterward a member and later president of the Naval Examining Board, and in 1877 was made surgeon-general, chief of the Bureau of Medicine and Surgery with the rank of commodore, and was retired on account of age, Oct. 5, 1878, after seventeen years and seven months of sea service and seventeen years and seven months of shore or other duty.

Harvey Lyman Rosenberry, M.D. Starling Medical College, Columbus, 1883; a member of the American Medical Association; formerly president of the Marathon County (Wis.) Medical Society; president of the Ninth Councilor District Medical Society; physician to the Marathon County Asylum for the Chronic Insane, and Marathon County Home and Hospital; president of the local board of pension examiners; medical director of the Great Northern Life Insurance Company; died at his home in Wausau, Wis., January 11, from cerebral hemorrhage, aged 53.

William Smith Ely, M.D. College of Physicians and Surgeons, New York City, 1867; a member of the American Medical Association and New York Academy of Medicine; formerly president of the Medical Society of the State of New York; for twenty years a member of the State Board of Medical Examiners; assistant surgeon of the One Hundred and Eighth New York Volunteer Infantry during the Civil War; for many years a trustee of the University of Rochester; died at his home in Rochester, January 15, from angina pectoris, aged 69.

John Flint, M.D. Harvard Medical School, 1903; passed assistant surgeon, U. S. Navy; a member of the American Medical Association; died in the Naval Hospital, Chelsea, Mass., January 11, from pneumonia, aged 34. After his service in the Massachusetts General Hospital, Dr. Flint entered the navy as an assistant surgeon in April, 1904, resigning in September of the same year. He then practiced in Chicago for a time, but reentered the medical corps of the navy in 1906, and was promoted to passed assistant surgeon in February, 1909.

Francis P. Casey, M.D. College of Physicians and Surgeons, New York City, 1864; of Auburn, N. Y.; from 1862 to 1864 medical cadet in the army and afterwards assistant surgeon of the Eighth New York Volunteer Artillery during the Civil War; who after the close of the war, went abroad and entered the Roumanian service and later served for one year as surgeon during the Russo-Turkish War; died in a hospital in New York City, January 3, from erysipelas, following an operation for a growth on the forehead, aged 69.

Lewis A. Querner, M.D. Medical College of Ohio, Cincinnati, 1867; a member of the Ohio State Medical Association and Cincinnati Academy of Medicine; formerly workhouse physician of Cincinnati; surgeon for the fire department for eight years, and for the police department for three years, and for one term coroner of Hamilton County; a hospital steward during the Civil War; died at his home in Cincinnati, January 7, from valvular heart disease, aged 65.

William Hull Ramsey, M.D. Beaumont Hospital Medical College, St. Louis, 1897; Medical Reserve Corps, U. S. Army; attending surgeon headquarters Department of the Missouri, Omaha; division surgeon for the Missouri Pacific System; associate professor of anatomy in the University of Nebraska; died suddenly in his hotel in Omaha, January 14, from chronic interstitial nephritis, aged 38.

Clarence Wright Heath, M.D. College of Physicians and Surgeons, Chicago, 1900; a member of the American Medical Association; oculist to the Erring Woman's Refuge of Reform and St. Joseph's Hospital; instructor in ophthalmology in the Chicago Polyclinic; died in Mercy Hospital, Benton Harbor, Mich., January 16, from pneumonia, aged 40.

Charles Edward Inches, M.D. Harvard Medical School, 1865; a member of the Massachusetts Medical Society; assistant surgeon of the Thirty-Seventh and later of the Twentieth Massachusetts Volunteer Infantry during the Civil War; for several years physician to the North End Dispensary; died at his home in Boston, January 11, aged 70.

William Wolfe Lesem, M.D. College of Physicians and Surgeons, New York City, 1903; a member of the American Medical Association; and visiting physician to the City, Children's and Mount Sinai Hospitals; a specialist on nervous and men-

tal diseases; died at his home, January 10, from cerebral hemorrhage, aged 32.

Charles Baeder Williams, M.D. University of Pennsylvania, Philadelphia, 1889; a member of the Medical Society of the State of Pennsylvania, and resident physician of the Pennsylvania Hospital for the Insane, Philadelphia; died in the Pennsylvania Hospital, January 9, three days after a surgical operation, aged 45.

Mary Ann Holbrook, M.D. University of Michigan, Ann Arbor, 1880; for six years a medical missionary of the A. B. C. F. M., in Tung Cho, North China; and later teacher of science in the Kobe (Japan) College for Women; died in East Haven, Conn., December 2, from pneumonia, aged 56.

John Perrine Gilbert, M.D. New York University, New York City, 1856; assistant surgeon U. S. Navy, and later surgeon of volunteers during the Civil War; at one time postmaster of Long Island City; health officer of the town of Lyons, N. Y.; died at his home, January 7, aged 81.

James Monroe Graham, M.D. Maryland Medical College, Baltimore, 1902; a member of the Medical Society of Virginia; of Sidney, Neb.; formerly of Willis, Va.; died in the Methodist Episcopal Hospital in Omaha, January 9, from tuberculosis of the kidneys, aged 32.

Warren G. Priest, M.D. Washington University, St. Louis, 1878; for eight years chief dispensary physician and since that time chief vaccine physician of the St. Louis Health Department; died in the Koch Hospital, St. Louis, January 11, from tuberculosis, aged 56.

Edward Kirkland Shelmerdine, M.D. University of Pennsylvania, Philadelphia, 1900; of Germantown, Philadelphia; surgeon to the Philadelphia Rapid Transit Company; died in the Germantown Hospital, January 10, after an operation for appendicitis, aged 39.

Fred Smith Hutchinson, M.D. University of Vermont, Burlington, 1882; a member of the Vermont State Medical Society; died at his home in Enosburg Falls, January 6, from internal injuries resulting from being thrown from his sleigh three days before, aged 49.

Albert Joseph Mayer, M.D. Tulane University of Louisiana, New Orleans, 1902; a member of the American Medical Association; a member of the staff of the Touro Infirmary; died at his home in New Orleans, January 14, from influenza, aged 33.

William S. Leiter, M.D. College of Physicians and Surgeons, Chicago, 1890; of Claypool, Ind.; a member of the American Medical Association; is said to have committed suicide by hanging himself in his home in Claypool, January 12, aged 45.

John Wesley Harrison, M.D. Atlanta County (Ga.) Medical College, 1859; Medical College of Virginia, Richmond, 1860; a Confederate veteran; died at his home in Kempner, Tex., November 27, from pneumonia, aged 72.

Berwick Bruce Lanier, M.D. University of Maryland, Baltimore, 1892; for several years associate professor of principles of surgery in his alma mater; died at his home in Baltimore, January 1, from disease of the liver, aged 41.

John P. Lave, M.D. New York University, New York City, 1878; a member of the American Roentgen-Ray Society; first police surgeon of Chicago; died at his home in that city, January 15, from locomotor ataxia, aged 54.

Laban Langstaff Bradshaw, M.D. Bellevue Hospital Medical College, 1880; a member of the American Medical Association and New York Academy of Medicine; died at his home in New York City, January 9, from hemophilia, aged 57.

Edwin H. Botts, M.D. Fort Wayne (Ind.) College of Medicine, 1893; formerly a member of the American Medical Association; died at his home in Zanesville, Ind., January 10, from cerebral hemorrhage, aged 52.

Percy William Shedd, M.D. New York Homeopathic Medical College, New York City, 1904; of New York City; died in a hotel in Newark, N. J., January 10, from the effects of an overdose of morphin, aged 41.

William Aloysius Oberle, M.D. Baltimore Medical College, 1906; of Newark, N. J.; died in St. James Hospital in that city, January 5, from septicemia, contracted in performing a surgical operation, aged 28.

A. K. Kinne (license, Vermont, 1888); a member of the Vermont State Medical Society; for thirty years a practitioner; died at his home in Middletown Springs, January 7, from pneumonia, aged 73.

Theodore F. Fienup, M.D. St. Louis University School of Medicine, 1904; a member of the American Medical Association;

died at his home in St. Louis, December 31, from pneumonia, aged 39.

R. Burdett Hoyt, M.D. Albany (N. Y.) Medical College, 1903; a member of the Medical Society of the State of New York; died at his home in Schenectady, January 11, from pneumonia, aged 29.

Samuel B. Junkin (license, Indiana, 1897); for nearly half a century a practitioner of North Webster; surgeon of volunteers during the Civil War; died at his home in that place, January 10, aged 82.

Charles Alfred Greene, M.D. University of Buffalo, N. Y., 1873; a member of the American Medical Association; died at his home in Windom, Minn., November 10, from heart disease, aged 65.

Louis H. Stoeffhaas, M.D. Rush Medical College, 1899; of Chicago; a member of the American Medical Association; died in St. Anthony's Hospital, Chicago, July 7, from endocarditis, aged 33.

David R. B. Greenlee, M.D. University of Pennsylvania, 1852; a member of the Arkansas Medical Society; a Confederate veteran; died at his home in Mayflower, January 1, aged 81.

Charles R. Watkins (registration, Texas, 1907, Twenty-Fifth Judicial District Board, 1894); died suddenly at his home in Floresville, December 31, from cerebral hemorrhage, aged 51.

James Oscar Breech, M.D. Barnes Medical College, St. Louis, 1906; assistant to the chair of gynecology in his alma mater; died at his home in St. Louis, December 30, from nephritis, aged 50.

Joseph Camille Gariepy, M.D. Laval University, Quebec, 1890; a member of the Fitchburg (Mass.) Medical Club; died at his home in Fitchburg, December 26, from heart disease, aged 45.

Nelson Ingram, M.D. Bellevue Hospital Medical College, 1865; surgeon in the navy during the Civil War; died at his home in Atlantic City, N. J., January 5, from acute gastritis, aged 67.

William Edward Curd, M.D. University of Nashville, Tenn., 1900; a member of the American Medical Association; died at his home in Copan, Okla., January 11, from typhoid fever, aged 37.

Daniel Buttrick Woodward, M.D. Harvard Medical School, 1865; a member of the Medical Society of the State of New York; died at his home in Ellenburg Corners, recently, aged 75.

William Sloan Creveling, M.D. New York University, New York City, 1851; a life member of the Medical Society of New Jersey; died at his home in Valley, January 1, aged 81.

Allison O. Douglass, M.D. Long Island College Hospital, 1876; a member of the American Medical Association; died at his home in Rome, N. Y., January 11, from pneumonia.

Robert L. Wood, M.D. University of Louisville, Ky., 1846; one of the oldest residents of Leavenworth, Kan.; died at his home in that city, January 1, from senile debility, aged 89.

William Jerome Doyle, M.D. Vanderbilt University and University of Nashville (Tenn.), 1892; died at his home in Greeley, Neb., December 26, from heart disease, aged 51.

William T. Grissom, M.D. University of Tennessee, Nashville, 1878; a member of the Kentucky State Medical Association; died at his home in Bliss, January 1, aged 57.

George Armstrong Hill, M.D. Jefferson Medical College, 1870; a member of the Medical Association of the State of Alabama; died at his home near Sylacauga, January 4, aged 61.

John Clark Spinks, M.D. Tulane University of Louisiana, New Orleans, 1857; died at his home in Shubuta, Miss., December 24, from cerebral hemorrhage, aged 79.

William Clark Griffith, M.D. Jefferson Medical College, 1888; of Mystic, Ia.; died in St. Joseph's Mercy Hospital, Centerville, Ia., January 9, from exposure, aged 67.

S. M. Lewis (license, Arkansas, 1903); for forty years a practitioner of the state; died at his home in Barren Fork, December 19, from pneumonia, aged 77.

Claiborne C. Stivers, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1880; died at his home in Horton, Kan., January 8, from pneumonia, aged 69.

Aneillio Preziosi, M.D. College of Physicians and Surgeons, Baltimore, 1909; died at his home in Stamford, Conn., May 23, from lobar pneumonia, aged 27.

Asa Brayton, M.D. Medical College of Ohio, Cincinnati, 1857; Bellevue Hospital Medical College, 1870; died at his home in Carey, O., January 11, aged 79.

James M. Kercheval, M.D. University of Pennsylvania, Philadelphia, 1858; died at his home in Nashville, Tenn., January 3, from influenza, aged 75.

Ernest Robertson McGregor, M.D. University of Georgia, Augusta, 1910; died at his home in Athens, Ga., December 19, from hemophilia, aged 32.

Newton Emmer Heath, M.D. Albany (N. Y.) Medical College, 1883; died at his home in Lee, Mass., January 7, from heart disease, aged 50.

Byron E. Webster (license, years of practice, Illinois, 1878); died at his home in Benton, December 13, from cerebral hemorrhage, aged 71.

William Edward Pole, M.D. Jefferson Medical College, 1900; died at his home in Philadelphia, August 29, from sarcoma of the liver, aged 42.

Hugh C. Discus, M.D. Physio-Medical Institute, Cincinnati, 1863; died at his home in Utica, O., January 8, from pneumonia, aged 76.

John Icilius King, M.D. Bellevue Hospital Medical College, 1873; died at his home in Burghill, O., January 3, from pneumonia, aged 62.

Thomas M. Carpenter (registration Greene County, Pa., 1884); died at his home in Deep Valley, Pa., August 28, aged 68.

J. P. Eichler, M.D. Germany; for sixty years a practitioner; died at his home in Fayetteville, O., September 19, aged 87.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

THE INCOMPATIBILITY OF ANTIPYRIN, CALOMEL AND SODIUM BICARBONATE

An inquiry has been received from a correspondent concerning the incompatibility (thought to be dangerous) of a mixture of antipyrin, calomel and sodium bicarbonate in the following prescription:

R Mild mercurous chlorid.....2 grains
Antipyrin 6 grains
Sodium bicarbonate q. s.
Mix and divide into 12 powders.

On account of lack of authoritative information on the subject the matter was referred to the Association laboratory, which made the following report:

"The literature contains little definite information concerning the incompatibility of a mixture of these substances.

"Holland¹ states that antipyrin is incompatible with many substances, among which calomel and sodium bicarbonate are mentioned, but nothing is said concerning its incompatibility with a mixture of the two salts. Another writer² reports that antipyrin is incompatible with the chlorids of mercury, while another³ declares that 'antipyrin is almost universally incompatible.' It is frequently stated that antipyrin is incompatible with calomel, mercuric chlorid, mercurous oxid and metallic mercury being formed. This assertion, which is made by Werner⁴, needs experimental confirmation. One writer⁵ says that there is but little danger in dispensing calomel and antipyrin when the former is prescribed in small doses, as but a small part of the calomel (one-tenth or less) is converted into corrosive sublimate.

"As it seemed worth while to obtain some experimental data on the point involved, a mixture was prepared having the following composition:

Calomel 2 parts
Antipyrin 6 parts
Sodium bicarbonate 12 parts

"By qualitative tests it was demonstrated that when this mixture is treated with water a bluish-gray residue remains undissolved and a soluble mercury salt is found in solution. The composition of the insoluble residue was not determined, but there was considerable evidence that it is largely composed of metallic mercury and unchanged calomel. If the prescription powder be treated with an excess of 0.2 per cent. hydrochloric acid the reaction noted above does not occur; no mercury is found in solution and the calomel appears to be unchanged. If a mixture of calomel and antipyrin be suspended in water no reaction appears to take place at once. The calomel retains its natural color and no mercury salt is found in the solution. If to this aqueous solution of antipyrin containing suspended calomel some sodium bicarbonate be added the calomel immediately changes color and the mixture becomes of the same appearance as does the original mixture when treated with water.

"Preliminary determinations indicated that from one-sixth to one-fourth of the calomel present is converted into a soluble mercury salt. If the entire quantity prescribed be administered the patient would receive a soluble mercury salt equivalent to from $\frac{1}{3}$ to $\frac{1}{2}$ grain of corrosive sublimate.

"The incompatibility of the mixture will be apparent to any physician who will take the trouble to pour a few drams of water on a small portion of the powder; and that it is dangerously incompatible is shown by the large proportion of the mercury salt which is rendered soluble. If the mixture be administered in a capsule the danger would be lessened somewhat, as the acidity of the stomach would tend to neutralize the sodium bicarbonate, on the presence of which the reaction appears to depend. Since medical and pharmaceutical textbooks contain so little definite information concerning the incompatibility of this combination, too much blame should not be attached to those who have prescribed it and to pharmacists who have filled such prescriptions. However, if used at all, it should be in the most cautious dosage."

ONE DRUG JOURNAL'S ATTITUDE ON NOSTRUMS

A correspondent wrote from Hawaii to the *Druggists Circular* making the following request:

"In the interest of a suffering public, we desire to obtain from you information as to the highest class and most efficacious cure for the disease of asthma, and the name of the firm or house who manufactures same, with the purpose of securing the sole agency of the remedy for sale in this Territory of Hawaii.

"Also . . . an emmenagogue which has stood the test of clinical experience and recognized as the standard.

"Trusting to receive this information at your hands at the earliest convenience, and thanking you in advance for humanitarianism . . ."

The *Druggists Circular's* reply is admirable and we give it in full; it needs no comment:

"We are sorry to have to say that we are unable to supply the desired information, and the reason for our inability should suggest itself to any druggist who gives the matter serious thought for a few moments.

"Asthma is a manifestation which frequently baffles the skill of the best physicians who are called on to treat patients suffering with it, and perhaps no two cases should be treated exactly alike, for not only the varying phases of the disease itself, but the idiosyncrasies of the patient must be taken into consideration if the best effect is to be obtained. If, then, a competent physician, who is familiar with the case and sees the patient from time to time and uses his best judgment in varying the treatment as necessity arises, does not always get results which are satisfactory to all concerned how can it be possible for some nostrum manufacturer who has never seen the sufferer and knows nothing about the peculiarities of his case, to be able to prescribe a single remedy which will fit it and thousands of others partly like it and partly different?

1. Med. Chem., Ed. 2, 1908, p. 482.

2. Stark: Am. Pharm. Assn. Proc., 1893, xli, 506.

3. Fantus: Prescription Writing, 1906, p. 219.

4. Pharm. Ztg., 1896, xli, 395.

5. Critic and Guide, 1910, xiii, 117.

"The same question might be asked with at least as much if not even greater propriety concerning the other remedy requested and the complaint for which it is to be used.

"In the interest of a suffering public"—which has already suffered too long at the hands of nostrum manufacturers whose principal asset is public ignorance—we suggest that druggists use their influence to send sufferers from asthma and other ills to those who are legally authorized and presumably professionally equipped to diagnose their cases and prescribe remedies for their relief. The man who undertakes to diagnose and prescribe when he has not completed a course of study which entitles him to legal recognition as an expert in the practice of medicine, thereby becomes a quack and may justly be regarded as a faker; and his status is not changed by his surroundings, no matter whether they be the luxurious fittings of a suite of offices in a large manufacturing establishment, rows of bottles over a prescription counter, or the gaudy trappings of a mountebank's cart at a county fair."

Correspondence

Bacteriologic vs. Clinical Control of Diphtheria Quarantine

To the Editor:—Dr. Simonds in his article on diphtheria (THE JOURNAL, Jan. 7, 1910, p. 37) said: "It is evidently unjust to . . . the patient . . . to place him in quarantine on a clinical diagnosis of diphtheria, which in over 40 per cent. of the cases is proved by bacteriologic examination to be incorrect."

It seems to me that this is assuming an infallibility for bacteriologists that is unwarranted. No careful and experienced physician would consider even half a dozen bacteriologic examinations as proof of error in a case diagnosed as diphtheria from clinical evidence such as the presence of a membrane and a rise of temperature. Negative evidence must always be uncertain, and, while a positive diagnosis based on bacteriologic examination should be taken as conclusive even where the clinical evidence is negative, it does not follow that the reverse is true. In other words, the presence of the characteristic membrane is quite as conclusive as a positive bacteriologic finding.

THOMAS J. TURPIN, Corpus Christi, Tex.
Health Officer Nueces County.

[The above was referred to Dr. Simonds, who writes:]

To the Editor:—It must be borne in mind that the statement quoted by Dr. Turpin referred solely to the regulation of quarantine in diphtheria. It was not intended to apply to the treatment of the disease. When the clinical symptoms are reasonably clear, the physician who administers antitoxin without waiting for a bacteriologic examination is to be commended. The harmlessness of antitoxin and the more favorable results obtained from early injections render its use on clinical grounds alone perfectly justifiable. But in the case of quarantine I insist that it is unjust to a patient, especially to an older child or adult, to confine him for an arbitrary period of time on clinical grounds alone when a bacteriologic examination is obtainable. It is just as unfair to the community to release such a patient merely because all symptoms of diphtheria have disappeared.

It is true that a small percentage of positive cases are negative on first culture—at the Boston City Laboratory something more than 6 per cent. This simply means that neither clinical nor bacteriologic examinations are absolutely infallible, but that the percentage of error in the latter, especially where single negative cultures in suspicious cases are followed by second cultures, is so small that we are justified in relying entirely on this method for the regulation of quarantine.

I cannot agree with Dr. Turpin that "the presence of a characteristic membrane is quite as conclusive as a positive bacteriologic finding." For the control of treatment such a principle is very good; but from the standpoint of public health it is exceedingly bad for two reasons: First, when the people of a community are taught that a membrane is characteristic of diphtheria it will be difficult to convince them that the patient may still be a source of danger after the membrane has disappeared. Second, such people will also refuse to believe

that a perfectly healthy person may be a carrier of virulent diphtheria bacilli and thus be a menace to his associates. It is from patients released too early and from healthy carriers that the disease is kept alive in a community.

To sum up the whole matter, the control of treatment by clinical manifestations is entirely justifiable; but the regulation of quarantine should be based solely on the results of bacteriologic examinations, when such are obtainable. Every suspicious case should be held in temporary quarantine until the result of the bacteriologic examination is known. Such a method, while not absolutely infallible, is far more accurate than clinical observation; it will certainly insure better protection to the community.

J. P. SIMONDS, Indianapolis.

Gonorrhea and Ophthalmia Neonatorum

To the Editor:—I am in receipt of a circular letter from the Ohio State Board of Health and the Ohio Commission for the Prevention of Blindness, stating that more than one-fourth and nearly one-third of all blindness of infants in Ohio is due to ophthalmia neonatorum, urging the necessity of preventive treatment of the new-born and also announcing the free distribution of silver nitrate solutions to physicians and midwives. While this is a laudable effort and one to which we should all lend a helping hand, we must go a step farther, it seems to me, if we wish to strike at the root of this evil. For every child born with this disease there is a mother who is infected with gonorrhea. For nearly every mother so infected there is a father who married with an uncured case of gonorrhea. While it may be true that in many instances the man has made no effort to obtain a cure, or what is worse, has been self-treated or treated by a druggist, it is equally true that in the majority of cases he has been treated and discharged as cured by a practicing physician. It is high time to call a halt and to ask that the treatment of this disease be given the same serious consideration as is granted to other much less serious and far less disastrous diseases. The presence or absence of a visible discharge seems to be the only determining factor that is used by the majority of men in diagnosing the presence or absence of gonorrhea. This is utterly fallacious. In the same category may be placed a single determination of the presence or absence of the gonococcus in the discharge. Of course the use of such means leads to the discharge from treatment of thousands of men who are still suffering from the disease and who will, in the majority of instances, infect their innocent partners. Instances of this kind have come to the notice of every practicing physician in this country. The following item, clipped from a Cleveland daily paper, illustrates the frequency of such cases:

TO PROSECUTE MIDWIFE—SOCIETY CHARGES THAT WOMAN NEGLECTED BABY'S EYES

A warrant was yesterday issued from the police prosecutor's office for the arrest of Mrs. Rose Natrefa, charging her with failing to report soreness of a child's eyes. Mrs. Natrefa, who is a licensed midwife, lives at 2253 East Eighty-Third Street.

Officers of the Society for the Promotion of the Interests of the Blind found Loretta Sovenski, 3 days old, 7610 Stanton Court, S.-E., infected with what physicians say is an extremely virulent case of sore eyes. The baby was at once removed to Lakeside Hospital, where the physicians say there is only a slight chance of preserving its sight. The midwife, officers who made the investigation say, told the mother of the child that the case was nothing more than a cold in the baby's eyes.

I have not touched on the morbidity in the patient himself, which, as we all know, is of alarming frequency, and, in the case of women especially, is attended with such dire results. Let me repeat, the time has come for intelligent, serious and persistent treatment of gonorrhea to prevent the consequences of present-day methods.

DR. W. E. SAMPLINER, Cleveland.

Action of One Society on the Secret Commission Evil

To the Editor:—The subject of fee-splitting and commission-giving by surgeons has come up in the Western Surgical Association, and the society has taken some definite steps to eliminate the practice. Dr. John P. Lord, in his presidential address, read a paper on this subject. The executive council

eliminated a number of applicants for membership from the list of those eligible to election, because of authentic knowledge of such practice on their part.

The executive council went a step further than this, however, and considered the question in connection with some of those who are already members of the association. A number of members were dropped in order to increase the efficiency of the society. They were stricken from the list for various reasons; a few of them for the practice of fee-splitting and commission-giving.

A. T. MANN, Secretary, Minneapolis.

Transmission of Bubonic Plague

To the Editor:—In THE JOURNAL (December 24, 1910, p. 2258), in an abstract of a report on bubonic plague in California by an officer of the United States Public Health and Marine-Hospital Service, occurs the following:

The ground-squirrel is the reservoir of plague germs, but does not transmit the disease to human beings, but by its bite infects the rat, which in turn, acting as a germ-carrier, bites and infects a human being, who in due course comes down with bubonic plague.

The latter presumably then bites his fellow-men and thus passes the disease along, and this would argue the necessity for muzzling every person afflicted with plague! But, seriously, what has become of the rat-flea which recently figured so largely as an indispensable factor or link in the spread of this disease? And an answer to this question is required by what follows the above quotation, namely, "as all that is necessary to start a season of bubonic plague anywhere is an infected ground-squirrel or human being."

Is this orthodox teaching concerning the science of sanitation as applying to bubonic plague, or is it merely an instance of misquoting or bad reporting? For, if the latter, it is too serious to pass uncorrected.

GEORGE HOMAN, St. Louis.

[COMMENT:—The error was due to a mistake of the reporter. The sentence should read: "The ground-squirrel is the reservoir of plague germs, but does not transmit the disease to human beings. Squirrel-fleas transmit the plague germs to rats, and rat-fleas in turn bite and infect human beings."—ED.)

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ACUTE THYROIDITIS

To the Editor:—I was very much interested in the report in THE JOURNAL (Nov. 12, 1910, p. 1732) of a case of acute thyroiditis, because of having encountered, a few years ago, my first and, so far, my only patient suffering from this condition, and because of the apparent rarity of the condition, the suddenness of onset, the difficulty of determining the etiology, at least in my patient. I cannot see valid reasons for attributing the thyroiditis, in the case of Drs. Lewis and O'Neill, to the infection of their patient from the horses suffering from epizootic. While it could not be disproved, I cannot but feel that it is possibly a coincidence, especially because of the rapid and complete recovery. My patient had a slight recurrence a few weeks later, which, I understand, may be expected in these cases. I did not see him in the second attack, which was mild, giving him but little trouble, he said.

Another thing which has impressed me is the slight mention of the condition in the literature, many of the text-books not referring to it at all. I am quite sure that the well-developed case of much severity, confronting for the first time the young practitioner who perhaps has never heard of the condition or has forgotten it, will occasion some serious and anxious thought on his part.

A German farmer, of good habits, aged 65, had been in his usual good health, doing no hard work, although still a very active man. On Aug. 9, 1904, he had gone to the elevator, some five or six miles from his home, and was returning shortly before noon in an open lumber wagon. When nearing home he suddenly noticed a sensation of pressure in the throat, increasing to choking, with dyspnea and dysphagia. Putting his hand to his neck, he found an immense tumor. He managed to get home and was brought immediately to my office. These symptoms came on very rapidly, reaching their acme, he says, in less than an hour. I saw him within two or two and a half hours of the onset.

The patient was somewhat nervous and excited, cyanotic, hoarse and suffering great difficulty in speaking, with great dyspnea and dysphagia. The thyroid gland was immensely enlarged, distended and distinctly outlined, the overlying skin flushed. He was put to bed and morphin and cathartics administered and an ice-bag applied

over the thyroid gland. The condition began to improve in a few hours and passed off in two or three days, with no trouble since, except as stated above. This patient has developed in the meantime cardiac symptoms, that is, within the last two or three years, apparently due to myocarditis.

I have talked with a friend in St. Louis who has encountered three or four cases of acute thyroiditis in his practice. One of the patients died in an attack; I think, a second attack.

I should like to hear from others and to have references to literature on this condition.

G. L. ARMSTRONG, M.D., Taylorville, Ill.

ANSWER.—Our correspondent reports a very interesting case, although perhaps some doubt may be thrown on the diagnosis of thyroiditis, inasmuch as swelling occurring so suddenly would suggest hemorrhage or some other cause than inflammation. Little is given in text-books on this subject and literature is scanty. The following are some of the principal articles on acute non-suppurative thyroiditis:

Kyle, D. B.: Simple Acute Thyroiditis with Report of Two Cases, *Ann. Otol., Rhinol. and Laryngol.*, May, 1900; abstr. in THE JOURNAL, July 21, 1900, p. 187.

Illoway, H.: Case of Acute Thyroiditis of Rhenmatic Origin, *Ann. Otol., Rhinol. and Laryngol.*, May, 1900; abstr. in THE JOURNAL, July 21, 1900, p. 187.

Secord, E. R.: A Case of Acute Thyroiditis, *Canada Lancet*, February, 1903.

Garbini, G.: Acute Thyroiditis, *Arch. ital. di otol.*, 1903, xiv, No. 1.

Quervain, F. de: Acute, Non-Suppurative Thyroiditis, *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1905, xiii, Supplement; *Semaine méd.*, 1905, xxv, No. 44; abstr. in THE JOURNAL, Dec. 2, 1905, p. 1765.

Lublinski: Acute Iodin Intoxication and Acute Inflammation of the Thyroid, *Deutsch. med. Wchnschr.*, 1906, xxxii, No. 8; abstr. in THE JOURNAL, April 14, 1906, p. 1147.

Lamb, S. D.: Case of Acute Thyroiditis, *Washington Med. Ann.*, 1907-08, vi, 243.

Dunger, R.: Acute Non-Suppurating Thyroiditis, *München. med. Wchnschr.*, Sept. 8, 1908; abstr. in THE JOURNAL, Oct. 17, 1908, p. 1381.

Schwerin, H.: Acute Non-Suppurative Thyroiditis, *München. med. Wchnschr.*, Oct. 13, 1908; abstr. in THE JOURNAL, Nov. 21, 1908, p. 1826.

Lecène, P., and Metzger: Acute Thyroiditis in Puerperal Infection, *Ann. de Gynéc. et d'Obst.*, February, 1910; abstr. in THE JOURNAL, April 2, 1910, p. 1174.

Parisot, J.: Acute Thyroiditis and Cardiovascular Complications, *Presse méd.*, May 7, 1910; abstr. in THE JOURNAL, June 11, 1910, p. 2007.

Lewis, J. P., and O'Neill, B. J.: Acute Thyroiditis with Edema of the Glottis, THE JOURNAL, Nov. 12, 1910, p. 1732.

DOSE AND VALUE OF SALVARSAN AND OTHER ARSENIC COMPOUNDS

To the Editor:—Please answer the following questions:

1. What per cent. of arsenic does each of the following contain: arsenous acid; sodium arsenate; sodium cacodylate; salvarsan?

2. What is the maximum single dose, by mouth, of arsenous acid, sodium arsenate, sodium cacodylate?

3. What is the maximum single dose, hypodermically, of sodium cacodylate; salvarsan?

4. Would it not be possible to introduce into the system with sodium cacodylate as much arsenic as it is possible to do with salvarsan, and in as short a period of time and with as little or less danger to the patient? If so, what advantage has salvarsan over sodium cacodylate in the treatment of syphilis?

G. W. SHRIVER, Sistersville, W. Va.

ANSWER.—1. Arsenous acid (arsenic trioxid) contains 75.74 per cent. of arsenic; sodium arsenate (crystallized) contains 24.01 per cent. of arsenic; sodium cacodylate (crystallized) contains 35.64 per cent. of arsenic; salvarsan should contain 34.16 per cent. of arsenic.

2. The dose of arsenic trioxid is given as from 0.002 to 0.004 gm. (1/30 to 1/15 grain). It may be increased gradually as tolerated by the patient, and it is impossible to state the maximum dose that can be given, except that we know the fatal dose is as small as 2 grains, and probably 1 grain may be fatal in some patients. The compounds of arsenic acid, like sodium arsenate, are not so poisonous as those of arsenous acid, hence sodium arsenate can be given in larger doses. The dosage is stated to be 0.003 to 0.008 gm. (1/20 to 1/8 grain). The dose of sodium cacodylate is from 0.03 to 0.13 gm. (1/2 to 2 grains).

3. The maximum dose of sodium cacodylate, hypodermically, would appear to be 0.13 gm. (2 grains). According to the experiments of Dawes and Jackson (THE JOURNAL, June 22, 1907, page 2090), sodium cacodylate appears to have only a very slight toxic action. They found that 0.5 gm. did not kill a rabbit, while 0.8 gm. did. The toxic dose of salvarsan has been estimated to be 0.15 gm. per kilo, which would correspond to 10.5 gm. for a man weighing 70 kilo. The maximum dose of salvarsan may be put at 0.6 gm., although possibly more might be given without serious results. A dose above 0.6 would, however, be attended with risks.

4. This question cannot be answered positively at present. The important question is, rather, how much arsenic becomes available to the system without danger to the patient. In the case of sodium cacodylate at any rate, it is probably only the arsenic which is reduced to the inorganic form that is therapeutically active.

JOURNALS ON OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY AND LARYNGOLOGY

To the Editor:—Please inform me as to the best eye, ear, nose and throat journals for a specialist.

C. W. BANKES, Reading, Pa.

ANSWER.—The following are representative journals:

Annals of Ophthalmology, Mermod-Jaccard Bldg., St. Louis; quarterly; \$4 a year; with *Annals of Otology, Rhinology and Laryngology*, \$7 a year.

Annals of Otology, Rhinology and Laryngology, Mermod-Jaccard Bldg., St. Louis; quarterly; \$4 a year.

Archives of Ophthalmology (Am. ed.), New Rochelle, N. Y., bi-monthly, \$5 a year.

Journal of Laryngology, Rhinology and Otology, Bartholomew Close, London, E. C., England; monthly; \$5 a year, including postage.

Journal of Ophthalmology and Oto-Laryngology, 100 State St., Chicago; monthly; \$2 a year.

Laryngoscope, 3858 Westminster Place, St. Louis; monthly; \$3 a year.

Ophthalmic Record, 72 Madison St., Chicago; monthly; \$40 a year.

Ophthalmology, 411 White Bldg., Seattle, Wash.; quarterly; \$5 a year.

REQUEST FOR SPECIMENS FROM CASES OF HYPERTHYROIDISM

To the Editor:—I am anxious to obtain specimens of tissue from those dead of hyperthyroidism (exophthalmic goiter) with a view to securing more definite and accurate knowledge concerning the tissue changes induced by hyperthyroidism. Portions of heart muscle, liver, pancreas, kidneys, suprarenals and pituitary gland are especially desired. Tissue from patients dying without operative measures of any kind are preferred. I would greatly appreciate any such specimens sent me together with a concise statement of the case, and will gladly remit postage for their carriage. The fresh specimens should be covered with a proper preserving fluid and placed in a mailing-case, which I will supply on request.

JOHN D. SINGLEY, 812 North Highland Ave., Pittsburg, Pa.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Jan. 21, 1911.

Dade, Waller H., M.R.C., and Patterson, Edwin W., M.R.C., relieved from duty in the Philippines division and will proceed from Manila, P. I., about May 15, to San Francisco, for further orders.

Wilson, William H., major; Lewis, William F., major; Duncan, Louis C., captain; Brewer, Isaac W., M.R.C., and Smith, Herbert H., M.R.C., relieved from duty in the Philippines division and will proceed from Manila, P. I., about July 15, 1911, to San Francisco, for further orders.

Kirkpatrick, Thomas J., major; Coffin, Jacob M., captain, and Tuttle, Arnold D., lieutenant, relieved from duty in the Philippine division and will proceed from Manila, P. I., about Aug. 15, 1911, to San Francisco, for further orders.

The following named officers of the Medical Reserve Corps are relieved from duty at the stations designated after their names and will proceed at the proper time to San Francisco and take the transport to sail May 5, 1911, for duty in the Philippines division: Baker, Charles L., first lieutenant, presidio of San Francisco; McCown, Thomas B., first lieutenant, Fort Barrancas, Fla.

The following named officers are relieved from duty at the station after their names and will proceed at the proper time to San Francisco and take the transport to sail from that place about June 5, 1911, for duty in the Philippine division: Lynch, Charles, major, office of the surgeon-general; Roberts, William M., major, Fort Thomas, Ky.; Bastion, Joseph E., lieutenant, Company C, Hospital Corps, Walter Reed General Hospital, Takoma Park, D. C.; Austin, Thomas C., Company B, Hospital Corps, Army General Hospital, San Francisco; Wheate, J. Marshall, M.R.C., Fort Lincoln, N. Dak.; Mills, Frederick H., M.R.C., Fort Missoula, Mont.

The following named officers are relieved from duty at the stations after their names and will proceed at the proper time to San Francisco and take the transport to sail from that place about July 5, 1911, for duty in the Philippines division: Deshon, George D., major, Army and Navy General Hospital, Hot Springs, Ark.; Haverkamp, Charles W., lieutenant, Company A, Hospital Corps, Fort D. A. Russell, Wyo.; Reynolds, Royal, lieutenant, Company B, Hospital Corps, Army General Hospital, San Francisco; Bell, Leonard P., M.R.C., Fort Riley, Kan.

The following named officers are relieved from duty at the stations after their names and will proceed at the proper time to San Francisco and take the transport sailing from that place about August 5, for duty in the Philippines division: Stark, Alexander N., major, Fort Adams, R. I.; Wolfe, Edwin R., major, Medical Supply Depot, New York City; Gosman, George H. R., major, Fort Barrancas, Fla.; Cooper, Webb E., lieutenant, Company A, Hospital Corps, Fort D. A. Russell, Wyo.; Brown, Polk D., M.R.C., Fort Sam Houston, Texas.

Carr, William B., lieutenant, left from temporary duty, Fort Myer, Va., on ten days' leave of absence.

Lambie, John S., Jr., lieutenant, relieved from duty as surgeon of the transport Sherman on arrival at San Francisco, about Sept. 12, 1911, and will then report to the adjutant general of the Army for further orders.

Schlanser, Adam E., lieutenant, relieved from duty with Company C, Hospital Corps, Walter Reed General Hospital, Takoma Park, D. C., and ordered to Fort Shafter, H. T., for duty on transport sailing from San Francisco about July 5, 1911.

Smith, William H., lieutenant, relieved from duty at Fort Shafter, H. T., and on arrival in Honolulu of the transport to sail from Manila about August 5 will proceed on that transport to San Francisco and report to the adjutant general of the Army for further orders.

Hayne, James A., M.R.C., on departure 3d Battalion, 2d Infantry, from Fort Assiniboine, Mont., will proceed to his home, and on arrival there will report by telegraph to the adjutant general of the Army. Lieutenant Hayne will stand relieved from further active duty in the Medical Reserve Corps, to take effect on his arrival at his home.

Deshon, George D., major, ordered to Washington, D. C., on April 3, 1911, for examination for promotion.

Kilbourne, E. D., captain, on arrival at San Francisco will proceed to Columbus Barracks, Ohio, for duty.

Morse, Charles F., captain, on arrival at San Francisco will proceed to the Army General Hospital, San Francisco, for duty.

Scott, George H., captain, on expiration of his present leave of absence will proceed to the Army General Hospital, Fort Bayard, N. Mex., for duty.

Clarke, Joseph T., major, relieved from duty at Fort Crook, Neb., and ordered to Vancouver Barracks, Wash., for duty.

Dale, Frederick A., major, relieved from duty at Fort Lincoln, N. Dak., and ordered to Fort Crook, Neb., for duty.

Brechmin, Louis, Jr., captain, relieved from duty at the Army General Hospital, San Francisco, and ordered to Fort Lincoln, N. Dak., for duty.

Rukke, Guy V., lieutenant, relieved from duty at the Army General Hospital, San Francisco, and ordered to Jefferson Barracks, Mo., for duty.

Bloombergh, H. D., captain, on arrival at San Francisco will proceed to Fort Yellowstone, Wyo., for duty.

Fife, James D., captain, granted two months' leave of absence.

Stone, Frank P., D.S., will proceed from Hobart, Okla., to the presidio of Monterey, Cal., for duty.

McCornack, C. C., lieutenant, left Vancouver Barracks, Wash., for duty at target range near Probsted, Wash.

Clark, John A., captain, ordered to proceed to West Point, N. Y., for temporary duty.

Fauntleroy, P. C., major, relieved from duty at Fort Benjamin Harrison, Ind., May 1, 1911, and will proceed to New York City to familiarize himself with the methods pursued in the Medical Supply Depot in the purchase and inspection of supplies. He will proceed from New York June 1, 1911, to St. Louis and relieve Major Henry D. Snyder as medical supply officer in that city. Major Snyder after being relieved will proceed to New York City and assume charge of the Medical Supply Depot in that city, relieving Major Edwin P. Wolfe, Medical Corps.

Medical Corps, U. S. Navy

Changes during the week ended Jan. 21, 1911.

Rennic, W. H., P. A. surgeon, detached from the naval hospital, Annapolis, Md., and ordered to duty at the naval hospital, Boston.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Jan. 18, 1911.

Cofer, L. E., assistant surgeon-general, directed to report to the chairman of board of medical examiners at Washington, D. C., for examination to determine his fitness for promotion to the grade of surgeon.

Wertenbaker, C. P., surgeon, reassigned for duty at Norfolk, Va., effective Dec. 26, 1910.

Young, C. B., surgeon, detailed to represent the service at the annual meeting of the Association of American Medical Colleges at Chicago, Feb. 27-28, 1911.

Cumming, Hugh S., P. A. surgeon, directed to proceed to Washington, D. C., and report to chairman of board of medical examiners for examination to determine his fitness for promotion to the grade of surgeon.

McMullen, John, P. A. surgeon, granted seven days' leave of absence from Jan. 13, 1911.

Foster, M. H., P. A. surgeon, granted fifteen days' leave of absence from Jan. 21, 1911.

Lumsden, L. L., P. A. surgeon, directed to return to Washington, D. C. via St. Paul, Minn., for conference with State Board of Health.

Schereschewsky, J. W., P. A. surgeon, directed to proceed to Washington, D. C., and report at bureau for conference.

Francis, Edward, P. A. surgeon, directed to proceed to New York and Otisville, N. Y., on special temporary duty.

Burkhalter, J. T., P. A. surgeon, leave of absence for one month from Dec. 17, 1910, amended to read twenty-eight days from Dec. 17, 1910.

Frost, M. H., P. A. surgeon, directed to proceed to Albany, N. Y., on special temporary duty.

Moncure, J. A., A. A. surgeon, granted ten days' extension of leave of absence from Jan. 1, 1911, on account of sickness; granted fifteen days' leave of absence from Jan. 11, 1911.

Schuster, B. L., A. A. surgeon, granted nine days' leave of absence from Jan. 11, 1911.

Board of medical officers convened to meet at the Bureau, Jan 23, 1911, for the examination of Assistant Surgeon-General L. E. Cofer and Passed Assistant-Surgeon Hugh S. Cumming, to determine their fitness for promotion to the grade of surgeon. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General J. D. Long; Passed Assistant-Surgeon Joseph Goldberger, recorder.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: State House, Des Moines, February 14-16. Sec., Dr. Guilford H. Sumner.

KANSAS: Topeka, February 14. Sec., Dr. H. A. Dykes, Lebanon.

NEBRASKA: State House, Lincoln, February 8-9. Sec., Dr. E. Arthur Carr.

NEW YORK: New York City, Albany, Syracuse and Buffalo, January 31 to February 3. Chief of Examinations Division, Mr. Charles F. Wheelock, Albany.

Colorado October Report

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 4-8, 1910. The number of subjects examined in was 8; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 16, of whom 15 passed and 1 failed. Twenty-nine candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Denver and Gross College of Medicine, (1910)*	(1910) 77.9, 80.6, 81, 82.9, 83.7, 84.4.		
University of Colorado, (1910)	77.4, 79.5, 85.5.		
Rush Medical College.....(1910)			85.4
University of Louisville.....(1910)			78
Ohio-Miami Medical College.....(1910)			88.7
Vanderbilt University.....(1909)	83.9, 83.9		

FAILED

St. Louis College of Physicians and Surgeons.....(1906)	70.6
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College	REGISTERED ON CREDENTIALS	Year Grad.	State Licenses
Rush Medical College.....(1894)	Indiana; (1895)		Iowa
Northwestern University Medical School.....(1891)			Kansas
College of Phys. and Surgeons, Chicago (1893) (1899)			Illinois
Central College of Phys and Sur., Indianapolis.(1905)			Indiana
University of Iowa, College of Medicine.....(1890)			Iowa
University of Kansas.....(1906)			Kansas
Louisville Medical College.....(1885)			Kentucky
College of Physicians and Surgeons, Baltimore. (1897)	W. Virginia		
Baltimore University.....(1896)	Ohio; (1903)		Penna.
University of Missouri.....(1908)			Missouri
St. Louis College of Physicians and Surgeons..(1891)			Missouri
Kansas City Medical College.....(1897)			Kansas
Missouri Medical College.....(1898)			Missouri
St. Louis University.....(1905)			Illinois
University of Nebraska, Homeopathic Dept.....(1886)			Ohio
University of Nebraska, College of Medicine....(1907)			Nebraska
Columbia University, College of Phys. and Sur..(1870)			Illinois
University of Wooster.....(1890)			Ohio
Pulte Medical College.....(1884)			Kansas
Miami Medical College.....(1907)			Ohio
Starling Medical College.....(1888)			Ohio
Hahnemann Medical College and Hospital, Phil.(1897)			Penna.
Medico-Chirurgical College, Philadelphia.....(1908)			Penna.
University of Tennessee.....(1892)			Tennessee
University of Vermont.....(1904)			Vermont

* No grade given.

Georgia October Report

Dr. I. H. Goss, secretary of the Regular Board of Medical Examiners of the State of Georgia, reports the written examination held at Atlanta, Oct. 11-12, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 80. The total number of candidates examined was 32, of whom 26 passed and 6 failed. Ten candidates were licensed through reciprocity and 1 under the exemption clause. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College.....(1908)	89; (1910)		86
George Washington University.....(1906)			99
Howard University, Washington, D. C. (1907)	81; (1909)		83.5
Tulane University of Louisiana.....(1910)	88, 89,		89.5
Flint Medical College.....(1910)			85.5
University of Maryland.....(1910)			83
Leonard School of Medicine.....(1910)	81.5, 82.5, 83,		83
Columbia University, College of Phys. and Sur....(1906)			91
Medical College of the State of South Carolina..(1910)			83
University of the South.(1901)	87.5; (1906) 88; (1908)		80
University of Nashville.....(1910)			83.5
Meharry Medical College.....(1908)	83.5; (1910)		82.5
Chattanooga Medical College.....(1910)			84.5
Vanderbilt University.....(1910)			81
Gate City Medical College.....(1903)			85
Marquette University, Milwaukee.....(1919)			89.5

FAILED

Leonard School of Medicine.....(1905)	77; (1910)	78
Meharry Medical College.....(1907)	75; (1910)	72
Chattanooga Medical College.....(1905)		74.5
Knoxville Medical College.....(1908)		74.5

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Louisville.....(1876)		Kentucky
Johns Hopkins University.....(1907)		Maryland
University of Pennsylvania.....(1870)		Tennessee
Vanderbilt University.....(1901)		Tennessee
Tennessee Medical College.....(1904)		Tennessee
University of Nashville.....(1909)		Tennessee
Meharry Medical College.....(1902)		Iowa
Chattanooga Medical College.....(1909)		Tennessee
University College of Medicine, Richmond.....(1907)		Virginia
McGill University, Montreal.....(1910)		Maine

LICENSED UNDER THE EXEMPTION CLAUSE

College	Year Grad.
Southern Medical College, Atlanta.....(1889)	

Florida November Report

Dr. J. D. Fernandez, secretary of the Florida Board of Medical Examiners, reports the written examination held at Palatka, Nov. 9-10, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 66, of whom 56 passed and 10 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama... (1909)	75, 90; (1910)	75, 75.1	81
Atlanta School of Medicine.....(1909)	81, 87; (1910)		78, 84
Medical College of Georgia.....(1900)	83; 1906		75
Atlanta College of Physicians and Surgeons, (1909)	85; (1910)	75,	
75, 75, 75, 75, 80.6, 87.			
Howard University, Washington, D. C.....(1910)			86.3
Rush Medical College.....(1892)			84
Northwestern University Medical Coll..(1889)	83; (1901)		96
Louisville National Medical College.....(1910)			77
Tulane Univ. of Louisiana, (1909)	75; (1910)	82, 85, 87, 91,	91
Medical School of Maine.....(1897)			87
University of Maryland.....(1909)	87; (1910)		87
Harvard Medical School.....(1887)			80
University of Michigan, Dept. of Med. and Surg..(1910)			82
Barnes Medical College.....(1910)			75
Missouri Medical College.....(1897)			78
University of Nebraska.....(1903)			87
Albany Medical College.....(1877)			91
Leonard School of Medicine.....(1910)			79
Medico-Chirurgical College of Philadelphia.....(1904)			85
University of Pennsylvania (1882)	88; (1902) 84; (1910)		83
Memphis Hospital Medical College.....(1910)			89
Vanderbilt University.....(1887)	80; (1908)		81
Medical Coll. of the State of South Carolina, (1909)	75; (1910)		81
Meharry Medical College, (1901)	75; (1908) 76.4; 1909		80
University of Nashville.....(1909)	88; (1910)		75
University College of Medicine, Richmond.....(1909)			90
Medical College of Virginia, Richmond.....(1908)			85

FAILED

Atlanta School of Medicine.....(1910)	65
Atlanta College of Physicians and Surgeons, (1905)	63; (1909) 56; (1910) 56.1
Indiana Medical College.....(1908)	64
Kentucky University.....(1906)	68.6
Creighton Medical College.....(1910)	60
Medical Coll. of the State of South Carolina, (1909)	65; (1910) 52
University of Tennessee.....(1909)	58.6

Nevada November Report

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, November 7-9, 1910. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 9, all of whom passed. Seven candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Cooper Med. College, San Francisco, (1904)	82.9; (1910)	84.8, 87.8	
Northwestern University Medical School.....(1894)			78.9
Rush Medical College.....(1893)			78.2
College of Physicians and Surgeons, Chicago.....(1893)			83.2
Johns Hopkins University.....(1908)			88.2
University of Würzburg, Germany.....(1892)			89.4
University of Naples, Italy.....(1893)			83.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College.....(1905)		Illinois
University of Maryland.....(1895)		Maryland
University of Michigan.....(1890)	Nebraska; (1893)	Minnesota
Marion-Sims College of Medicine.....(1902)		Illinois
Cincinnati College of Medicine and Surgery....(1884)		Michigan
Jefferson Medical College.....(1894)		Nebraska

Book Notices

A MANUAL OF MIDWIFERY. For Students and Practitioners. By Henry Jellett, M.D., King's Professor of Midwifery in the School of Physic, Trinity College, Dublin. With the Assistance in Special Subjects of W. R. Dawson, M.D.; H. C. Drury, M.D.; T. G. Moorhead, M.D., and R. J. Rowlette, M.D. Second Edition. Cloth. Price, \$6 net. Pp. 1210, with 557 illustrations. New York: William Wood & Co., 1910.

The improvements in this edition consist in important changes in the illustrations as well as in the text. A complete new set of drawings illustrates the chapter on obstetric anatomy and also the application of forceps, pubiotomy and Cesarean section, as well as the mechanism of labor. The anatomy and pathology of eclampsia, hyperemesis gravidarum, extra-uterine pregnancy, chorio-epithelioma and surgical fevers of childbed have been revised by Dr. Rowlette, pathologist to the Rotunda Hospital. New matter has been added and the text generally revised.

The book may be commended without hesitation as one of the best text-books on obstetrics in the English language. It is well arranged, complete, clearly written, up to date and well illustrated.

The chapters on obstetric anatomy, and especially those on the ovum and fetus, are concise but clear. One regrets only the absence of a method of determining and denoting the station of the fetus in its passage through the obstetric canal.

In the chapter on obstetric asepsis and antisepsis, the author is rather more dogmatic in denying the possibility of auto-infection than is justified. The rules for the prevention of sepsis are very good, but the statement is somewhat surprising that for a douche "in private practice it is seldom possible to obtain sterilized water, and consequently we must use the next best substitute, which will be furnished by water to which an antiseptic has been added." Why a vaginal douche should be given with the patient in the awkward lateral position is also difficult for an American to understand.

In the most excellent chapter on the physiology of labor we would dissent only from the author's preference for chloroform to ether in all degrees of anesthesia. Those who have used ether will not agree that it has any disadvantages compared with chloroform, while recent investigations show that chloroform may have remote toxic effect on the fetus or child as well as on the mother.

We are disappointed to find the important subject of exercise practically ignored in the discussion of the physiology of the puerperium and definite directions in regard to getting out of bed omitted. Considerable attention has been given in the last ten years in America and Germany to the importance of a proper management of the puerperium in order to obviate the results of imperfect involution of the uterus and ligaments and the abdominal wall, including the frequent occurrence of enteroptosis. This subject is well worth the attention of our English and Irish colleagues.

In the numerous important subjects of pathology of pregnancy, labor and the puerperium, the author gives clear pictures of the pathologic conditions and describes his own and other methods of treatment, with satisfactory definitions. It is not possible to describe, in the short limits of a review, the views of the author on even the most important subjects as for example, placenta prævia, accidental hemorrhage, etc. In general, it may be said that the reader will follow the clear presentation of the subjects with much interest and find the methods of treatment safe and in accordance with the present state of obstetric science.

A PRACTICAL GUIDE TO THE NEWER REMEDIES. By J. M. Fortescue-Brickdale, M.D., Physician to Clifton College. Cloth. Price, \$2 net. Pp. 273. New York: William Wood & Co., 1910.

The author makes a comparison and an estimate in the light of experience of the merits of the newer remedies; classifies the remedies discussed on the principle that they have been introduced as substitutes for already well-known remedies, in order to overcome the obvious disadvantages of some of these. With few exceptions, the numerous synthetic remedies introduced in the last few decades have not embodied any new therapeutic actions, but have merely presented the essential principles of the older remedies in a new form. In some cases the advantage has been illusory, since the new

combination has only the effects of a mixture and its advantages could have been secured by administering the individual ingredients of the new compound.

These facts are set forth by the author, and he takes pains to point out in several cases that the synthetics possess no real advantage over the simpler and older remedies. Thus the various substitutes for the iodids are described in some detail; the author points out that many of these substitutes contain only a small amount of iodine and hence cannot be used to secure a powerful and rapid effect, so that "unless intolerance is well marked, there does not seem to be any reason for adopting a method of administration, the object of which is, in fact, to obtain a minimal dosage." He does not, however, agree with Ehrenmeyer and Stein that the organic iodine compounds possess no advantage at all.

Still less credit is given to the bromide substitutes, as the author says: "None of these preparations present any real advantage over the alkaline bromides; any tendency to irritate the stomach in the latter can always be met by prescribing a sufficiency of water." The arsenic, sulphur, phosphorus and iron compounds are critically considered and the advantages of some of the newer preparations admitted. The inefficacy of intestinal antiseptics as a class and of the uric acid solvents is emphasized. Throughout the book the reader is impressed with the occasional grain of wheat which is to be secured from the winnowing of much chaff, and the need of conservatism is clearly shown. This shifting of the claims of manufacturers, often too optimistic, is a difficult task which seems to have been satisfactorily performed. The book is free from technicalities and no time is wasted in useless description. These very desirable qualities recommend the work to the favorable consideration of every student and practitioner of medicine.

DISEASE OF THE PANCREAS. Its Cause and Nature. By Eugene L. Opie, Professor of Pathology, Washington University, St. Louis. Second Edition. Cloth. Price, \$3. Pp. 387, with 47 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

Since the first edition of this book appeared in 1903, extensive studies of the pancreas have cleared up many of the moot questions concerning this important organ. Many points in the histology, and even the anatomy, have been made clearer, and the secretions, both internal and external, are better understood, as well as many of the pathologic conditions which affect this organ, notably hemorrhagic and other forms of pancreatitis; the formation of cysts; tuberculosis and syphilis; the relation of the pancreas to carbohydrate metabolism and diabetes mellitus, as well as the relation of the hepatic function and the gall-ducts to pancreatic disease. All of this is reflected in this new edition. This greater knowledge has brought the pancreas more within the domain of the surgeon, and the organ is now much more frequently attacked surgically. The author still adheres to his theory that the essential lesions in diabetes mellitus is in the islands of Langerhans. He feels that this point has now been established, both by his own experiments and by the work of others, which he cites, the disease occurring when this portion of the organ is affected, just as though the whole organ were extirpated. The author is not dogmatic on this point, but gives the evidence on both sides. He draws freely from the literature concerning the pancreas, giving a bibliography that very well covers the whole field. The book is well illustrated. The work is authoritative, and an extremely interesting one on a subject in which great progress has been made, but which is not yet entirely cleared up.

DIE WASSERMANN'SCHE REAKTION. Mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Von Dr. Harald Boas, Privatdozent an der Universität. Mit einem Vorwort von Prof. A. Wassermann. Paper. Price, 5.60 marks. Pp. 186. Berlin: S. Karger, 1911.

In his preface, Professor Wassermann emphasizes the fact that the results given by Boas correspond very closely with the results obtained by himself. The technical reliability of the results published by Boas would seem to be well established and the conclusions drawn on the basis of the results thus obtained consequently acquire great force. The conviction arises, as one looks over these results, that at the present time repeated Wassermann tests are necessary in order to determine whether the patient really is cured or whether he simply has passed

into a stage of latency, and that persistent positive reactions indicate the presence of spirochetes. If full advantage is taken of the test, large numbers of cases of latent syphilis should be discovered and the patients probably cured; the great benefit thus obtainable is easily understood when we call to mind the number of women who know nothing of their syphilitic infection, the importance of protecting nurslings against the effects of hereditary syphilis, and against infection by wet-nurses, etc. The Danish government has recognized these highly important practical aspects of the Wassermann test and there has been organized a complete serodiagnostic service for physicians in the State Serum Institute at Copenhagen. The book is to be highly recommended.

FOOD AND FEEDING IN HEALTH AND DISEASE. A Manual of Practical Dietetics. By Chalmers Watson, M.D., Assistant Physician, Royal Infirmary, Edinburgh. Cloth. Price, 10 shillings 6 pence. Pp. 638, with illustrations. New York: William Wood & Co., 1910.

The fine summary of the general principles of nutrition and of the physiology of digestion, absorption and metabolism that appears in the initial chapters of this book is to be unreservedly commended. The author has not adopted the modern classification of foods, but retains the old classification—"animal and vegetable" foods. Because of this there is no symmetrical harmony between his food-classes and food-uses. The work is thoroughly abreast of the latest and best investigations in its presentation of the physiologic effects of alcohol on the animal body, as well as the therapeutic uses of that substance.

The detailed and just treatment of the matter of patent, proprietary and predigested foods will appeal to the practitioner and will be valuable to him for reference. Especially valuable will the practitioner find the chapter on "Diet at Different Periods of Life" (childhood, school age, old age, pregnancy). The chapters on infant-feeding are excellent. While there is nothing noteworthy in that part of the work devoted to diet in disease, it is up to date and reliable. The republication in the appendix of reports of the author's researches on meat diet is a novel feature in such a book and adds much to its value.

GEHIRN UND RÜCKENMARK. Leitfaden für das Studium der Morphologie und des Faserverlaufs. Von Dr. med. Emil Villiger, Privatdozent für Neurologie und Neuropathologie an der Universität Basel. Second Edition. Cloth. Price, 12.80 marks. Pp. 278, with 224 illustrations. Leipzig: Wilhelm Engelmann, 1910.

This work gives in a brief yet fairly detailed form the information and illustrations generally divided between an atlas and a text-book on the anatomy of the brain and cord. Part I is devoted to morphology, or rather topographic anatomy; Part II to the course of the different fiber tracts. Most of the illustrations are schematic and clear; at the end of the book there are forty-nine full-page reproductions of sections through the brain-stem, at suitable intervals, from the genu of the callosum to the caudal end of the bulb. Only the normal brain and cord are considered, not the peripheral nerves or pathologic conditions. The clear text, everywhere illustrated by schematic drawings, will recommend the book to the student or physician looking for elementary information, and the anatomist or neuropathologist will secure the work on account of the serial sections mentioned.

HINTS FOR THE GENERAL PRACTITIONER IN RHINOLOGY AND LARYNGOLOGY. By Dr. Johann Fein, Privatdozent at the University of Vienna. Translated by J. Bowring Horgan, M.B., Late House Surgeon at the Hospital for Diseases of the Throat, Golden Square, London, W. Cloth. Price, \$1.50. Pp. 223, with 42 illustrations. New York: Rebman Co., 1910.

In this brief work the author, without attempting to make either a text-book or a work of reference, has drawn from his large experience as a clinician and teacher in his special line, and has given much useful information for the general practitioner in the affections of these special regions which come clearly within his province. He attempts to draw rather distinct lines between the diseases which the general practitioner may treat and those which belong to the specialist. Though there may be differences of opinion as to the methods of handling the various troubles, yet the principles laid down in the diagnosis and treatment are practical, and the book will be of very material assistance to the general practitioner. It is well illustrated, and the translation has been well done.

ANDREAS VESALIUS, THE REFORMER OF ANATOMY. By James Moores Ball, M.D. Paper. Price, \$5. Pp. 149, with illustrations. St. Louis: Medical Science Press, 1910.

This work, evidently the result of much painstaking and industrious study, contains an account of the life and works of Vesalius himself, and a survey of medical science up to his time, with brief sketches of earlier and contemporary anatomists. The book is typographically attractive, and is illustrated with excellent reproductions of curious and interesting old engravings. It is doubtless through inadvertence rather than error that the author refers to the Emperor Charles V as the "Spanish emperor," and as "Charles V of Spain." Charles was German in disposition, education and appearance and only half a Spaniard by descent, while as sovereign of Spain, of course, he was Charles I, not Charles V.

THE MICROSCOPICAL EXAMINATION OF FOODS AND DRUGS. A Practical Introduction to the Methods Adopted in the Microscopical Examination of Foods and Drugs, in the Entire, Crushed and Powdered States. By Henry G. Greenish, F.I.C., Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain. Second Edition. Cloth. Price, \$3 net. Pp. 386, with 209 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

This, the second edition of this well-known and popular text, is the same as the first, with the exception of the addition of a chapter on the more commonly occurring adulterants of powdered foods and drugs, and the addition of descriptions of saffron, almond and fennel fruit, licorice and calumba. This edition is supplemented by a brief general scheme of examination, which should prove a desirable addition. The work is well illustrated.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

A NEW PUBLIC HEALTH BILL IN CONGRESS

On January 5 Mr. Mann introduced the following bill in the House of Representatives. This bill is H. R. 30292. A similar bill has been introduced in the Senate by Senator Martin of Virginia as S. 9909:

A BILL: To change the name of the Public Health and Marine-Hospital Service to the Public Health Service, to increase the pay of officers of said service, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Public Health and Marine-Hospital Service of the United States shall hereafter be known and designated as the Public Health Service, and all laws pertaining to the Public Health and Marine-Hospital Service of the United States shall hereafter apply to the Public Health Service, and all regulations now in force, made in accordance with law for the Public Health and Marine-Hospital Service of the United States shall apply to and remain in force as regulations of and for the Public Health Service until changed or rescinded. The Public Health Service may study and investigate the diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution either directly or indirectly of the navigable streams and lakes of the United States, and it shall from time to time issue information in the form of bulletins and otherwise for the use of the public.

SEC. 2. That beginning with the first day of July next after the passage of this act the salaries of the commissioned medical officers of the Public Health Service shall be at the following rates per annum: surgeon-general, \$6,000; assistant surgeon-general, \$4,000; senior surgeon, of which there shall be ten in number, on active duty, \$3,500; surgeon, \$3,000; passed assistant surgeon, \$2,400; assistant surgeon, \$2,000; and the said officers, excepting the surgeon-general, shall receive an additional compensation of 10 per cent. of the annual salary as above set forth for each five years' service, but not to exceed in all 40 per cent.: Provided, That the total salary, including the longevity increase, shall not exceed the following rates: assistant surgeon-general, \$5,000; senior surgeon, \$4,500; surgeon, \$4,000: Provided further, That there may be employed in the Public Health Service such help as may be provided for from time to time by Congress.

PUBLIC HEALTH EXHIBITS UNDER THE SUPERVISION
OF THE AMERICAN MEDICAL ASSOCIATION

Frank B. Wynn, A.M., M.D.

INDIANAPOLIS

In the field of preventive medicine, no method of instructing the laity on hygienic and sanitary questions has proved more

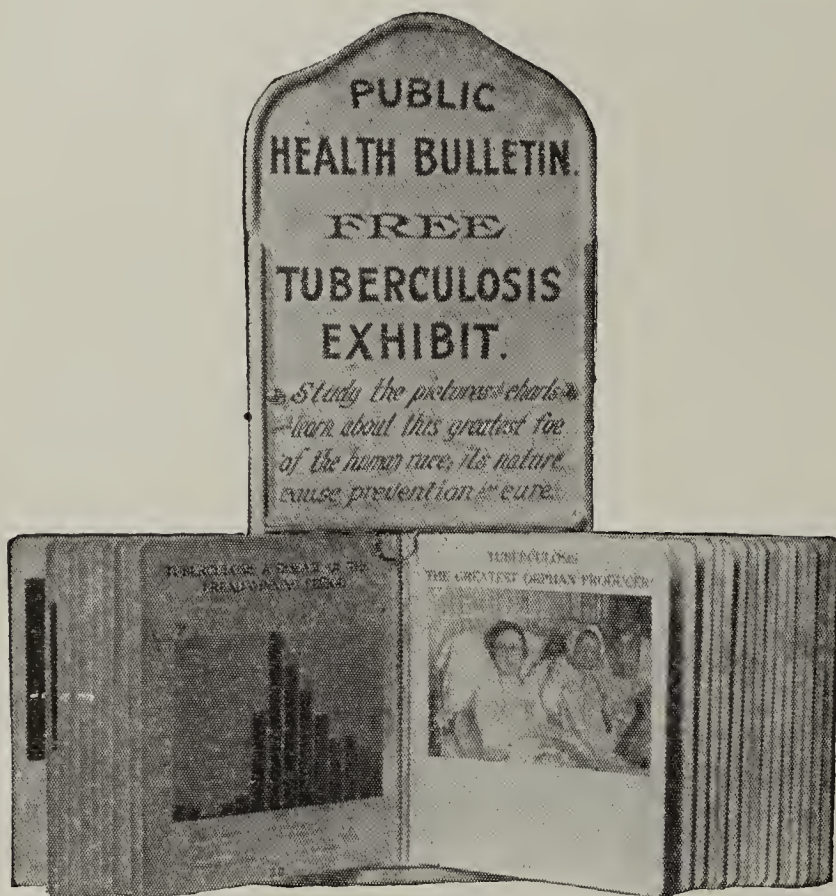


Fig. 1.—Public health exhibit for placing in postoffices and other public places.



Fig. 2.—A public health bulletin, medium size.

effective than well-conducted exhibits. For several years the Committee on Scientific Exhibit of the American Medical Association has sought in various ways to stimulate the development of model public health exhibits. Considerable study has been given to exhibits of this character, leading to the con-

clusion that as ordinarily devised and conducted they are open to the following objections:

1. They are cumbersome, heterogeneous and often unsystematic in arrangement.
2. Their initial cost is large; and the expense of installing housing and supervision is great.
3. They are available only for cities.
4. The exhibition is spasmodic: they are shown for only a day or two in a community.

PERMANENTLY INSTALLED PUBLIC HEALTH EXHIBITS

To overcome the above objections it has been sought to devise cheap, compact, and durable health exhibits for permanent installation in public places, such as railway stations

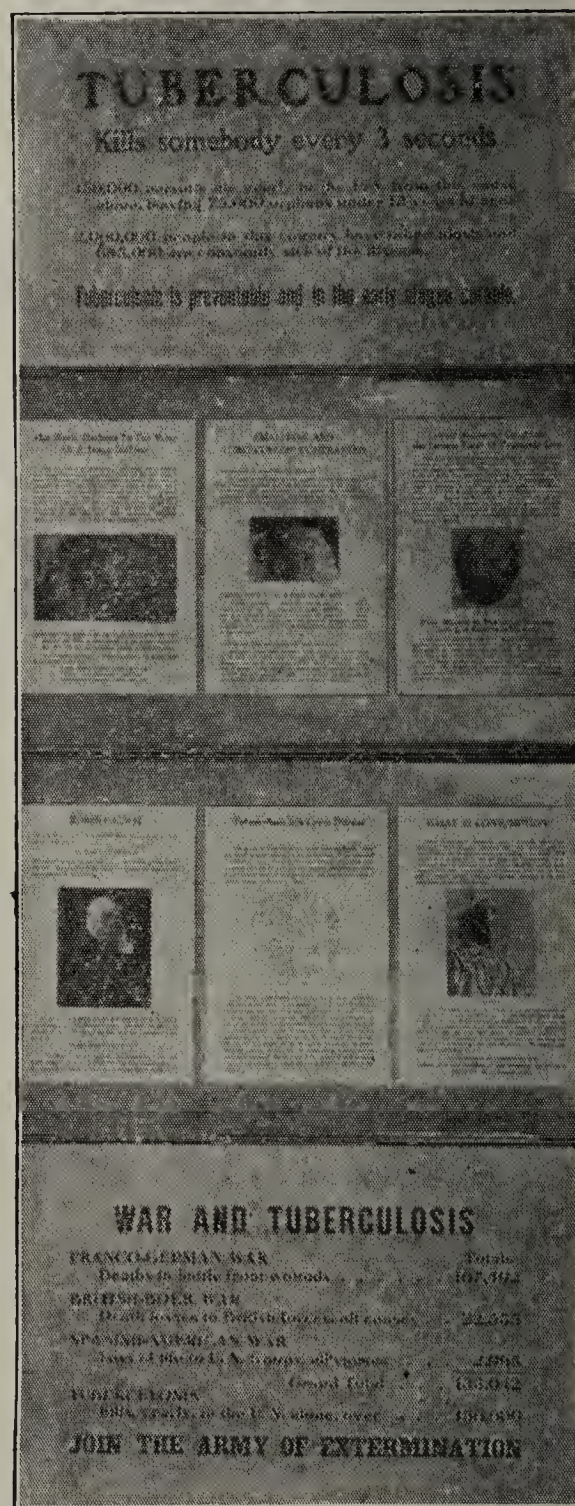


Fig. 3.—Portable, folding tuberculosis charts for use in lectures, etc.

court-houses, post-offices, and the like, where people come and go. I have designed four models which were shown in the Scientific Exhibit at the St. Louis meeting.

Model 1.—Small Wall Exhibit (Fig. 1).—Cost, \$15. May be fastened to any wall. Material, galvanized iron and tin enamel or gun-metal finish; printed matter varnished to make it durable and sanitary. Dimensions, 9 by 30 inches. Contains thirty removable, hinged leaves on which are mounted six pictures, charts, and data relating, in this particular cabinet, to tuberculosis. While tuberculosis is made the standing issue of public instruction, the "tuberculosis" sign at the top may be slid out and a "typhoid" sign introduced, substituting a

the same time a group of leaves relating to the latter. In this way a local health officer may at any time inaugurate a campaign of instruction on a prevailing epidemic. Fifty of these small exhibits have been installed in public places about the city of Indianapolis, by the Department of Public Health.

These small exhibits are particularly well adapted for use in village railway stations or post-offices. Their small cost enables their purchase by clubs, medical societies, and health authorities. The price quoted might be still further reduced if they were made in large numbers.

Model 2.—Medium-Sized Wall Cabinet (Fig. 2).—Cost, \$20. Material, same as foregoing. Dimensions 24 by 30 inches. Designed for larger railway stations, court-houses, etc. The leaves are arranged in three groups in order to permit simultaneous inspection by several persons. It is intended that the central group should be devoted to tuberculosis; the lateral ones to other sanitary and hygienic topics. Small compartments for models of shacks, etc.

Model 3.—Large Octagonal Cabinet.—Cost, \$100. Mounted on a pedestal. Same materials as in the foregoing. Designed especially for large railway stations, or any public place where large numbers of people congregate. Contains models of shacks, sanitary cuspidors, etc. Removable hinged leaves on all sides.

Model 4.—Compact Portable Exhibit (Fig. 3).—Cost, \$15. This consists of enameled metallic leaves 13 by 20 inches, which are hinged in groups of four or more, and may be dropped from a picture molding in a minute's time. These may be used in connection with oral presentations, or they may be permanently installed; especially adapted to hanging on the walls in school buildings. The tuberculosis set contains twenty-four leaves.

ADVANTAGES OF THE PLAN OF PUBLIC HEALTH EXHIBITS UNDER THE ASSOCIATION CONTROL

1. Compactness, neatness and stability: They take up but little room and may be placed with safety in any public building where crowds assemble.
2. Completeness: Although compact, they contain as much as the large exhibits—all that is necessary for the instruction of the public.
3. No supervision required. They tell their own story graphically.
4. Continuity of educational effort: The lessons of hygiene and sanitary science are taught day by day.
5. Exhibits do not arouse local jealousies and criticisms from the profession; nor is there risk of bungling public presentation.
6. Supervision of the data by the Association would insure sane and judicious instruction of the laity on public health problems.

PROBLEM OF PRODUCTION

In order to secure the widest possible educational effect from such exhibits, it is desirable that they be sold at the lowest possible figure, thus insuring general use. It lies within the power of the Association to develop cheap, compact and yet complete exhibits relating to all the problems of the public health, and this it undoubtedly will do. It would be possible in this way to standardize to a large extent public health methods throughout the country. The wise hand of the Association would guard against erratic efforts in the field of preventive medicine, and seek on every hand to cooperate with and aid existing forces working for the public health and comfort.

[A number of the tuberculosis exhibits have been made up by Clark and Roberts Co., 315 Holton Place, Indianapolis, Ind. Single cabinets (Model 1) will be furnished for \$15.00, or in lots of one to four dozen at \$12.00 each. Larger quantities at a reduction. These prices do not include freight or express charges. Orders may be sent direct to the maker or to the Secretary, Council on Health and Public Instruction, American Medical Association, 535 Dearborn Avenue, Chicago. The purchase of these exhibits is strongly recommended to state and municipal boards of health, women's clubs, county medical societies and local health leagues.]

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Fourth Weekly Meeting

SURGICAL SHOCK

PHYSIOLOGY OF SHOCK: Vascular shock, cardiac shock. Depression or inhibition. Relation of cardiac and vascular shock. Blood-pressure in shock. Effect of stimulation of depressor nerve-fibers. Effect of alkaline solutions on experimental shock.

ETIOLOGY OF SHOCK: Sensory impulses in operation, hemorrhage, general anesthesia, extent and duration of operation, heat and cold, psychic influences. Predisposing conditions; anemia, alcoholism, diabetes, nephritis, local and general infections. Traumatism in production of shock.

SYMPTOMS AND DIAGNOSIS OF SHOCK: Pulse, blood-pressure, temperature, perspiration, pallor, respiration, reflexes. Differentiate shock from collapse.

TREATMENT OF SHOCK: Prophylactic: Effect of operative manipulations on organs and tissues; sensibility of different structures. Character and amount of anesthetic. Preparation for anesthetic. Vaso-constrictors: Compression of abdomen and extremities, salt solution, epinephrin.

Monthly Meeting

ANESTHESIA—SURGICAL SHOCK

The Choice of an Anesthetic.

Indications and Contra-Indications for Chloroform and for Ether.

Local Anesthesia in General Surgery.

The Prevention and Treatment of Surgical Shock.

Medicolegal

One Trial for Illegally Practicing Medicine Not a Bar to Another

The Supreme Court of South Carolina, in *State vs. Van Buren* (68 S. E. R. 568), reverses a judgment sustaining a plea of former jeopardy and acquittal in a prosecution for practicing medicine without the license required by statute. It says that the first indictment, on which the defendant was tried and acquitted, charged that he practiced medicine, without a license, on October 10, and November 5, 1908, by prescribing for the physical ailment of another; while the second indictment charged that, on Oct. 28, 1908, he unlawfully practiced medicine by prescribing for and treating the physical ailments of Mary Crim. The statute contemplates that every violation of its provisions shall be a separate offense. The question was whether it appeared from the faces of the indictments that the offenses charged were the same, so that an acquittal under the first would be a bar to a trial under the second.

It will be observed that the charge in the first indictment was entirely indefinite, except as to the time. No person or place was mentioned, and no circumstances or particular description, except the dates of the alleged offenses. For this reason the time mentioned was a material part of the description of the offense, and it was necessary to prove the dates as alleged. The state, therefore, on the trial under that indictment, was limited in its proof to showing that the defendant practiced medicine without a license on October 10 and November 5, 1908. This being so, it seems perfectly clear that the defendant was never tried and was never acquitted of any charge except that of practicing medicine without a license on the days named. Whether he had practiced on other days in violation of the statute, not being a question in issue, could not have been decided.

The test laid down as useful and generally adequate, though not infallible, by which it may be decided whether two indict-

ments charge the same offense, is: "Would the evidence necessary to support the second indictment have been sufficient to procure a legal conviction on the first?" Apply this test. Obviously evidence to support the second indictment, charging the practice of medicine without a license by prescribing for the physical ailments of Mary Crim on Oct. 28, 1908, could have been introduced which would have been entirely insufficient to produce conviction on the first indictment; for no evidence would have supported the first indictment except evidence of practicing medicine on the days therein named, while the evidence necessary to support the second indictment could have been of practicing medicine by prescribing for Mary Crim on other days than those to which the first indictment was confined. The circuit court, therefore, erred in laying down as a legal inference that the second indictment necessarily charged the same offense as the first.

On a trial on the second indictment no evidence of practicing medicine without a license on the days named in the first indictment would be admissible, because the defendant had been tried for those alleged offenses and acquitted; but he had not been tried for a like offense committed at any other time, and therefore the first trial and acquittal was ineffectual as a plea against the charge alleged in the second indictment to have been committed at a different time.

Private Tuberculosis Sanitariums As Nuisances— Unfounded Fears

The Supreme Court of Washington reverses, in the case of Everett and wife vs. Paschall (111 Pac. R. 879), a decision in which a lower court denied an injunction against the maintenance of a private tuberculosis sanitarium in a residence neighborhood. More particularly, the question, which is thus answered in the negative, was stated to be: "Can a tuberculosis hospital be maintained in a residential portion of a city, where its maintenance depreciates the value of contiguous property from 33½ to 50 per cent., and where its existence detracts from the comfortable use of such residential property?"

The lower court went on the principle that, the danger being only in the apprehension of it, a fear unfounded and unsustained by science, a demon of the imagination, the courts would take no account of it. But if dread of the disease and fear induced by the proximity of the sanitarium, in fact, disturbed the comfortable enjoyment of the property of the plaintiffs, the supreme court questions its right to say that the fear was unfounded or unreasonable, when it was shared by the whole public to such an extent that the property values were diminished. The question was, not whether the fear was founded in science, but whether it existed; not whether it was imaginary, but whether it was real, in that it affected the movements and conduct of men. Such fears are actual, and must be recognized by the courts as other emotions of the human mind. That fear is real in the sense indicated, and is the most essentially human of all emotions, there can be no doubt. The theories and dogmas of scientific men, though provable by scientific reference, cannot be held to be controlling unless shared by the people generally.

Besides, the lower court found that the bacilli of the disease might be carried by house flies. Thus every house fly that might drone a summer afternoon in the drawing room or nursery would be a constant reminder to the plaintiffs of their neighbor, tending to disquiet the mind and render the enjoyment of their homes uncomfortable.

The only case the court finds holding that fear alone will not support a decree in this class of cases is *Anonymous*, 3 Atk. 750, where Lord Hardwicke said: "And the fears of mankind, though they may be reasonable ones, will not create a nuisance." The Washington statute modifies, if indeed it was not designed to change, that rule. Under the facts, the supreme court cannot say that the dread which was the disquieting element upon which the plaintiffs' complaint was made to rest was unreal, imaginary or fanciful. In so doing, it is not violating the settled principles of the law, but affirming them.

Society Proceedings

COMING MEETINGS

American Medical Association: Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.
Association of American Medical Colleges, Chicago, February 27-28.
Natl. Confed. of State Med. Exam. and Licng. Bds., Chicago, Feb. 28.

CHICAGO GYNECOLOGICAL SOCIETY

Regular Meeting, held Dec. 16, 1910

The President, DR. G. A. KOLISCHER, in the Chair

Legal Aspects of Post-Mortem Cesarean Section

DR. CHARLES S. BACON: The law of Numa Pompilius, the *lex regia*, provided that no pregnant woman who died should be buried until her child had been removed from the uterus, if alive. In some countries, Austria, for example, and Germany, the *lex regia* is still in force. Post-mortem section is required after the sixth month, or after the child is viable. In some countries the decision is left with the physician. In this country there is no statute to cover this point, nor is there a decision on record. Most important is it to decide that the mother is dead, because the law requires that if she is unconscious, consent to operate must be obtained from the husband. A Cesarean section done under such circumstances without the consent of the husband or against his wishes would be actionable. Therefore, it is essential to establish that death has occurred. Next of importance is it to determine whether the fetus is alive or dead. This is by no means always an easy thing to do, because of the position of the fetus, the presence of hydramnion, and thick or edematous abdominal walls. If the heart tones were heard a few minutes before death, post-mortem auscultation may be omitted. That, I believe, may be accepted as a positive and imperative indication for the operation. If evidence of fetal life is lacking, we are still justified in hoping that it exists for a brief period post mortem. Numerous observations have shown that the fetus may live for from fifteen to twenty minutes after the death of the mother. The cause and manner of death of the mother doubtless has considerable bearing on the subject. In order that no chance of saving a life may be lost and to avoid hurting the feelings of relatives and friends, I think that we may safely adopt a limit of twenty-five minutes after death as the longest time that a fetus can live and the latest moment that a section is justifiable. It is hardly necessary to add that the fetal life should be sufficiently developed to give a chance for continued existence. A fetus that could have no hope of living outside of the body of the mother more than a few hours cannot have a reasonable claim. Hence, the section should be made only when the pregnancy has advanced twenty-eight weeks. These two questions, whether the woman is really dead and whether the fetus is alive and viable, are all that need to be considered in establishing a rule of practice or a legal mandate.

As to the legal aspects of this question, I maintain that the operation is right for the following reasons: 1. The husband's right to determine whether an operation shall be performed on his wife ceases with her death. 2. The right of the husband to the custody and control of the body of his dead wife does not extend to preventing such disposal of it as may be necessary to keep it from injuring another human being. There is no property right in the dead body, and any action taken to save life cannot be classed as unlawful. The obligation to save the life of the fetus when it can be done without destroying or jeopardizing another life is absolute. Certain rights have been accorded to the fetus. The law, both statute and common, and its interpretation by the courts, is dependent on the sentiment of the community and registers in a general way the advance in knowledge and morals. This is well illustrated by the history of the laws concerning abortion. Certain civil rights of the infant "in ventre sa mère" have long been recognized, as, for example, in the right to obtain an injunction to "stay waste." More recently a number of cases have been decided in the highest courts in which the decision showed the existence of a tendency to a greater recognition of the legal rights of the fetus. That a viable fetus has the same right to live as any other human being is in accord with moral,

social and scientific laws, and should become a legal proposition. This does not imply that it has greater rights than the mother. If she is endangered by it, she may protect herself, even to the extent of destroying it, just as anyone has the right to self-preservation, when attacked by an irrational person. This rule would require a post-mortem Cesarean section or in rare cases a post-mortem delivery operation through the natural passages in every case when the fetus of at least the twenty-eighth week of gestation is known to be living at the moment of the death of the mother. It would also probably require the physician to use his judgment when he could not positively determine that the fetus was living, with the understanding that after twenty-five minutes from the death of the mother no operation should be done.

DISCUSSION

MR. A. F. REICHMANN: From the earliest times in England it was the established law that there was no such thing as property right in the body of a dead person, and, as a necessary corollary, no liability could arise either civilly or criminally from the taking, handling, mistreatment or mutilation of a body. On the death of a person the disposition of his body became a matter for the public, and was in charge of public officials. The next of kin, or surviving husband or wife, had no claim which the law recognized. At the beginning the courts of this country were inclined to follow the doctrines and precedents laid down by the English courts. The common law of England and this country, however, is a matter of evolution. It is continually expanding with the progress of civilization and adapting itself to the changed conditions of society, business and public sentiment. The duty to give bodies burial and to pay the incidental expenses was imposed by law on the surviving husband or wife or the next of kin. It is now the settled law of this country that the possession of a dead body belongs to those most intimately connected with the deceased by domestic ties, for the purpose of decent burial, and that this right belongs primarily to the surviving husband or wife, and then to the next of kin. However, any unlawful mistreatment or mutilation of a corpse will give rise to an action for damages against the guilty person or persons and in favor of those who have a legal right to the possession of the body.

The question still remains, however, whether such an action will lie in case of the justifiable performance of a Cesarean section done without the consent or even against the protest of those who are entitled to the possession of the body. In my judgment, it does not by any means follow that such an action will lie. While the law now recognizes a legal right to the possession of a dead body, and gives a legal remedy for the violation of that legal right, the legal right is, after all, merely a relative and not an absolute one. Various elements and considerations may under proper circumstances materially affect and diminish this right or even totally supersede it. In the interest of public health, states and municipalities in the exercise of their police power have the right to regulate the places of burial, and to disinter human bodies and reinter them in other places without the consent and even against the protest of those in whom the primary legal right to their possession is vested. Legislatures and municipalities may prescribe regulations for burial and it has been held that the attending physician or a foreigner has the right to hold a post-mortem examination on a body if he cannot otherwise issue the certificate of death required by law.

As to the probable attitude of the law toward the preservation of human life through the instrumentality of a Cesarean section, we are told that it was decreed by the Romans that no pregnant woman should be buried until the fetus had been removed by a Cesarean section, and I understand that the Italian laws at one time, if indeed they do not now, required this intervention. The law and public policy look with favor, and in some instances actively and affirmatively encourage the marital relationship, and by its means the creation of human life and the upbuilding of the family. It is not likely, therefore, that the law will frown on any effort to promote its policy. The preservation of human life is of the greatest concern and solicitude of the law and public policy. Self-defense

is a legal justification for the killing of another human being, and the law justifies the killing of another, not only to save the slayer's own life, but that of one intimately related to him. Therefore, it is not likely that the law will look with favor on one who, from considerations at best merely sentimental, despite the advice of men learned in medicine and surgery, would prefer to see a human life lost that might be saved, rather than permit the disturbance of an inanimate body. Suppose a woman far advanced in pregnancy within a short period of the delivery of her child, in good health, met with a sudden accident resulting in her death, but not in the death of her child. Her physician knows that the child is there and knows that it is about to be born. Would it be likely that the law would be a party in abetting the husband or next of kin in refusing a post-mortem section? If the surgeon performs the operation without the consent of the husband or the next of kin, or even in spite of their protests, it is very reasonable to believe that he will be protected by the law, providing he is acting within the limitations of demonstrable scientific knowledge with regard to these cases. To interfere under such circumstances would be murder. What moral or legal right have they to refuse consent? If the consent of the husband is unnecessary, and his refusal of no consequence in the eyes of the law, then *a priori* this must be so of the others. The mere fact that he is in part the author of the life in jeopardy gives him no superior right when the question of life and death is involved. The father has no property in his child. He has at most merely the right to its custody, and this to enable him to discharge toward his child certain active and affirmative duties imposed on him by law, for the violation of which penalties are imposed. He can be punished for its mistreatment and hanged the same as anyone else for causing its death. His custody of the child may be terminated by law when its well-being requires it. The child belongs to the state. Will it then be said, in the light of these considerations, that the father has the right by withholding his consent to cause the loss of a life which, after all, belongs not to him, but to the state and society, and in which his proprietary interest is so slight? I can only answer this most emphatically in the negative. Reviewing the entire situation, I cannot escape the conclusion that, given a case in which, in the light of existing scientific knowledge, the belief is reasonably justifiable that the infant may be rescued and its life saved, a Cesarean section will be justified by the law on grounds of public policy, and the person performing it will be fully protected both civilly and criminally though it is performed without the consent or even against the protest of those in whom the law has recognized a legal right to the possession of the body of the deceased, provided, of course, that the operation is performed in good faith and with due skill and without unnecessary injury.

DR. FRANK CARY: Some years ago, a woman was suffering from uremic convulsions and the question was whether or not an immediate delivery should be instituted. I was a consultant and urged an immediate delivery. In the meantime the woman died and I advised a Cesarean section. There was considerable argument as to the propriety of such an operation. Finally, the husband left the matter in my hands, I made the section and delivered a living child, demonstrating that that was the proper thing to do.

DR. ROBERT T. GILLMORE: In November, 1905, Dr. T. J. Watkins published a paper narrating a case of post-mortem Cesarean section done by him in 1904, following the death of the mother from eclampsia. The operation was performed five minutes after the death of the mother. The child was alive, is now well and strong, and, so far as I know, is the only living child in Chicago born by post-mortem Cesarean section.

DR. GEORGE SCHMAUCH: In Germany the physician is obliged to do a post-mortem Cesarean section. The law requires this, when there is a conviction that the child is alive. Several men have reported about four or five hundred cases all told with 20 or 25 per cent. of living children.

DR. CHARLES E. PADDOCK: I would perform that operation on any woman dying during labor or at term if the child is strong and viable.

DR. RUDOLPH W. HOLMES: I have twice done a post-mortem Cesarean section. In one case I knew the baby was dead. I

believe that it is the physician's duty to do this operation even when he knows that the child is dead. I am convinced that the law would sustain him in this.

DR. GUSTAV KOLISCHER: In all European countries the law prescribes that it is absolutely the duty of the attending physician to do a post-mortem Cesarean section. No time limit is set on the operation. The law assumes that the physician is competent to decide whether or not the mother is dead. The law also requires that after the operation is done the uterus and abdomen must be closed, because the woman might be alive. It is the intention of the law to protect the child in utero the same as it would a living child. If the husband prevents the physician from performing the section, he commits the same misdemeanor as if he failed to call in competent medical assistance when his child was ill.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

*Twentieth Annual Meeting, held at Chicago, Dec. 19-20, 1910
(Concluded from page 219)*

Acute Suppurative Appendicitis

DR. WILLARD BARTLETT, St. Louis: I operate for this condition as follows: The abdomen is opened through a grid-iron incision immediately over the dull area if one can be made out, otherwise at McBurney's point. It is very rarely the case that this incision has to be enlarged, which can be done though with slightly greater difficulty than is the case in ordinary through and through openings. Immediate search for the appendix is made. I always remove it if it can be found without unnecessary loss of time or disturbance of many adhesions. I do not often go so far as to turn out the head of the cecum in order to find the appendix, but consider this advisable where this carries with it the adherent viscera which completely surround a collection of pus, to be opened outside of the abdomen at the removal of the appendix. It is rarely my custom to do much or any so-called walling off with gauze in the search for the appendix. Harm is done by gauze packs, and ready access to the viscera is interfered with. While in clean work I make a peritoneal autoplasty when working on the appendix or any other viscus covered by peritoneum, in these pus cases I simply tie a strand of catgut around the base of it, including the mesenterium, and cut it off. Drainage is instituted in every case in which exudate is found, tying at its middle a strip of rubber dam or a ribbon cut from an old rubber glove in the catgut ligature on the base of the appendix. Drainage is further aided by placing the patient in bed on the face directly after the operation. In a few days the catgut ligature is absorbed and the drainage comes out of its own accord. Suture of the deeper layers of the abdominal wall is never attempted unless the muscle-splitting incision has been considerably enlarged. The drain practically fills the small dead space resulting from the spontaneous closure of such incisions, thus reestablishing intra-abdominal pressure sufficiently for our purpose. In the middle of the skin wound are placed one or two clips, at each side of which one-half of the rubber drain emerges, its two ends being fastened together by a clip which prevents the possibility of its being drawn into the abdomen. Thus one has practically coated the edges of an infected wound without any danger of pus retention in the depths or under the skin. After the two drains have been removed at the end of a week, the resulting defects in the skin are closed with adhesive plaster, and in two weeks after the operation most of these patients are out of bed with a solid abdominal wall and with the skin wound completely healed or almost so.

Intussusception in Adults

DR. ELLSWORTH ELIOT, New York City: Intussusception in adults is of more importance than previous study would indicate. The rarer causes are foreign bodies and parasites, the less rare, ulceration from diarrheal diseases, tuberculosis, fecal masses, etc. A more common cause is trauma, especially severe muscular effort. The most frequent cause is a tumor, especially the benign polyp, with constricted base. The clinical course varies from one most acute to the very chronic.

Of the individual symptoms there is a great variety. Constipation is the rule, but normal stool or diarrhea may occur. Blood or mucus in the stools is less frequent and usually signifies a tumor. A tumor varying in size and shape, especially during the attacks of pain and changing its position along the course of the colon, is characteristic. The tumor appears first in the right lower quadrant, but should be looked for in the pelvis or in a position covered by the liver or spleen. Distention, general or focal, is variable. The course of the attack is usually very severe, especially in those cases with Meckel's diverticulum. In the protracted cases the natural processes may cause sloughing of the intussusceptum which is passed by rectum. Hope for such relief should not encourage conservative measures of treatment, for in usually less than eighteen months secondary obstruction occurs. I suggest, therefore, that after the acute symptoms have disappeared lateral anastomosis be done, connecting the bowel above with that below the affected portion. Treatment should in most cases be radical. With conservative measures complete reduction is never certain; recurrence is likely, and the initial manipulation lowers the resistance in subsequent operation. Reduction in the first twenty-four hours is accomplished by combined expression and contraction in from ten to fifteen minutes, reduction by either alone being dangerous. Recurrence is avoided by anchorage of the cecum to the abdominal wall, by plication of the mesentery or by long longitudinal endoplication of the cecum along the anterior longitudinal muscular band. Gangrenous intussusceptum and intussusciens demand resection followed by anastomosis or temporary enterostomy. A viable sheath may be split along longitudinally and through this the intussusceptum resected. Temporizing measures are enteroanastomosis and artificial anus. The procedure of choice is to reduce gently as far as possible and then resect. Complete reduction followed by resection is employed only where a tumor or the like is concerned.

Intestinal Obstruction Due to Kinks and Adhesions of the Terminal Ileum

DR. CHARLES H. MAYO, Rochester, Minn.: The stomach suffers from many reflex conditions; only one patient in ten with gastric symptoms shows actual lesions. Many bowel conditions, as obstructions, appendiceal concretions, stimulate symptoms of ulcer. The development of the mid-intestine extends from below the common duct to and including the part of the transverse colon. Ten inches of the ileum is pelvic, was originally fixed to the cecum, and becomes detached at first, except for a lateral opening. When this fails to take place obstruction is more liable to occur. In extensive appendiceal operations in cases with obscure symptoms, Mr. Lane has noted an intestinal kink near the ileocecal valve. He believes this to cause obstruction, often non-inflammatory, and probably resulting from traction of the loaded cecum to the pelvis. The symptoms often simulate those of appendicitis, ulcer and various forms of constipation. We have seen many cases of this nature, both of inflammatory and non-inflammatory origin, and producing reflex symptoms. Therefore, with the present increased facilities for intestinal exploration, the 4 terminal inches of the ileum should be examined, when possible, in obscure cases of digestive disturbance.

Choice of Operation for Inguinal Hernia

DR. ARCHIBALD MACLAREN and DR. HARRY P. RITCHIE, St. Paul: In 123 operations on 97 individuals no extraordinary measures, such as filigrees, flaps of the recti, were found necessary to obtain satisfactory repair. During the first decade, the operation without the most positive indications is often questioned. It is no odd experience to have the truss obliterate the sac and when recurrence does come it will usually result in a less complicated form of hernia. During the second decade and beyond our advice is positive as the presence of the hernia is then permanent. All cases suffering from an inflammation of any degree are instructed particularly as to the possibility of recurrence.

Of the ninety-eight operations on men, there is one Halstead with cure, fifty-five Bassinis with one return, and forty-two Fergusons with three returns. Previous to 1905, there were two cases in which from their description the cord was not

displaced, but in all others (thirty-four in number) a Bassini was done. One relapse had occurred and had been reoperated, but the remembrance of the technic of the first operation was such that the failure was ascribed to this rather than to the principle. Beginning in February, 1905, we were influenced to use of the Ferguson operation. This was done as a routine operation forty-two times. The three returns have all been repaired, and the conditions found were identical in each case. There was no sign of the old hernia, but a new one had formed at the most dependent part of the canal. The sac came directly through to the inner side of the cord. When the sac was removed, it was easily demonstrated that if the tissues were replaced as before, this defect would be uncorrected and there seemed to be no reason why the sac would not immediately recur. The only possible procedure was the use of the conjoined tendon and the displacement of the cord, thus performing a Bassini. The percentage of our success as to the displacement or non-displacement is in favor of the former. In view of the formation of an entirely new kind of hernia which comes without displacement of the cord, and which we are powerless to prevent, it has swung the pendulum back in favor of the Bassini, and our present feeling is that if there is a recurrence, we will call it an operative fault and do it over again.

Typhoid Cholecystitis

DR. JOHN E. SUMMERS, Omaha, Neb.: Much discussion has taken place as to the mode of invasion of the gall-bladder by the typhoid bacilli. According to Chiari, the route of infection is not by ascension from the intestinal tract. His theory of gall-bladder infection by the typhoid bacillus is, first, the intestine, thence the blood, and then the gall-bladder. I had one pure case of typhoid cholecystitis, the gall-bladder involvement giving symptoms at the beginning of the first relapse. The absence of any history of gall-stones prior to the illness can fairly fix the initiation of the formation of the stone found in the common duct as taking place probably during the first part of the attack. The time from the beginning of the attack to the time of removal of the stone was from April 1 to August 22—sufficient time for its formation. So far as I know this is the first case of typhoidal cholecystitis with probable formation of the stone during the attack in which the stone was removed from the common duct. Cultures from the center of the stone were sterile—a finding which does not negative the origin of the stone as due to typhoid cholecystitis. Cholecystostomy on typhoid carriers should be done whenever there is evidence of any infection in the gall-bladder or ducts. In cases in which no signs of inflammation can be found, it might be considered that possibly the nesting-place for the bacilli was in a diverticulum and operation is not indicated. There is favorable evidence for the carrying out of cholecystostomy in these dangerous persons.

Plication of the Anterior Broad Ligament for Retrodisplacements

DR. A. W. ABBOTT, Minneapolis: The round ligament is not a natural support of the uterus, while the broad ligament is. Suture of the broad ligament just below the round ligament makes an efficient support and conforms to the natural anatomical requirements. The operation is rapidly done. The failures are less than by other methods, and there is less pain after the operation.

Abdominal Exclusion of the Fundus in Procidentia Uteri

DR. JOSEPH RILUS EASTMAN, Indianapolis: The question of whether the uterus in its normal state is suspended by its ligaments and thus secured in position or is supported or upheld by the muscles and fasciae of the pelvic floor, the ligaments serving only as guides, becomes in the presence of complete procidentia a question of lessened importance, for in these extreme cases hysterectomy or the abdominal operation with fixation is absolutely necessary, in addition to a thorough repair of the vaginal supports, with amputation of the elongated portio vaginalis and curettage. The fixation I make is one in which the uterine fundus is drawn quite through the abdominal wound, the entire fundus being excluded and

secured with a large transfixing pin. The pin is allowed to remain in place for two and one-half weeks. In excluding the fundus in cases of complete procidentia, the aim has been to fix the uterus higher than can be done by an ordinary fixation, to provide for firm attachment of the peritoneum, muscles and aponeurosis at a low level on the anterior, posterior and lateral aspects of the uterine body. All of the layers of the abdominal coverings are drawn snugly around the uterine body and sutured to that organ anteriorly, posteriorly and laterally. Two patients thus operated on, though they were past 50 years of age, had not passed the menopause, and in one of these the uterine appendages were removed and in the other the tubes were divided and the peritoneal screen suggested by Ries interposed. In three cases I have seen the abdominal operation was preceded by enrettage, amputation of the cervix, anterior and posterior colporrhaphy and perineorrhaphy. In each case the fundus was covered over with skin, growing centrally from the periphery within two or three weeks. Owing to the firmness of the attachment and the elevation given by the transfixing pin, the possibility of sagging or detachment is minimized. The method offers the greatest possible uterine surface for fixation in the abdominal coverings. It makes possible reduction of deformities caused by extreme relaxation as a simple intraabdominal fixation could not do because the uterus is drawn higher and the firmer fixation prevents a yielding ligamentous fixation or a complete smothering of the attached structures, an accident which is perhaps less rare than is imagined.

Lesions of the Hip-Joint and Their Treatment

DR. JOHN B. MURPHY, Chicago: In my recent work in connection with fractures in attaching the upper end of the femur frequently I found a definite condition occurring, namely, absorption of the neck. No such absorption takes place in fractures in any other part of the body. It never occurs when there is a fracture in the upper end of the humerus. This absorption is due to the primary condition of the circulation in the neck of the femur. When there is a fracture, a lesion or disease, the repair of that lesion depends more on the condition of the circulation in the neighborhood than on any other one thing, taking into account always the regenerative potency of the individual structure. In fractures that occur close to the head of the femur, there is practically no absorption at all; no fatty degeneration, no breaking down, no liquefaction of bone. When a fracture occurs close to the base of the neck and there is attachment to the trochanter, it does not tear off the blood-vessels in the capsule inside. That capsule goes down and out and back in again, and the blood-vessels go in a proximal and distal direction, but the bone for a certain distance, in a great majority of cases, is absorbed. If there is a fracture of the neck of the femur which does not tear off the blood-vessels, then the portion between the trochanter and the head remains, and it is capable not only of revascularization, but of ossification, regeneration and of sustaining the neck. In the management of fractures of the femur, it has been the custom to dress them with a straight external splint. What does this do? It tends to shortening by shortening of the adductors, and shortening of the gluteal group of muscles attached to the trochanter, and not only that, the tendency of the adductors is to draw the limb inward, and there is shortening in that position. What the surgeon wishes to do is to reduce to a minimum contraction during the process of absorption of this portion of the head of the femur, so that when absorption has taken place and the tissues are ready for regeneration, it is essential to have the parts in apposition. They can be best maintained in apposition by relaxing the group of muscles which did so much to cause shortening. The ambulatory management of tuberculosis of the head of the femur is wrong. An ambulatory apparatus is applied to prevent motion, and as far as it inhibits motion in a joint it is valuable. But what should it be applied for? To prevent pressure on the inflamed part. When the products of infection are held under tension there is rapid destruction of tissue. This tension should be relieved. The first main principle should be to separate these articular surfaces by an extension apparatus, and then build up the patient to stimulate the process of repair.

Current Medical Literature.**AMERICAN**

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal*January 12*

- 1 Acute Poliomyelonecephalitis. J. L. Morse, Boston.
- 2 *Treatment of Acute Poliomyelitis. W. E. Paul, Boston.
- 3 A Review of Sanitation in Panama. F. P. McCarthy, Boston.
- 4 Diseases of the Upper Abdomen That May Require Surgical Intervention. J. W. Keefe, Providence, R. I.
- 5 Mongolian Idiocy. W. N. Bullard, Boston.

2. **Treatment of Acute Poliomyelitis.**—The treatment employed by Paul may be summed up as follows: First are the patients with weakened muscles, and in these the order of value in treatment is: (1) voluntary exercises, (2) electricity, (3) massage. Second are the patients with paralysis, moderate atrophy and reaction of degeneration; in this class the order of value in treatment is: (1) electricity, (2) massage, (3) passive exercise. Third are those with absolute paralysis, complete reaction of degeneration, extreme atrophy and cold extremity; in this class the order of value in treatment is as follows: (1) massage, (2) passive exercises, (3) electricity.

Medical Record, New York*January 14*

- 6 Recent Experiences with Salvarsan. S. W. Lambert, New York.
- 7 *Practical Points in Treatment of Diseases of the Heart. E. E. Cornwall, Brooklyn, N. Y.
- 8 Treatment of Chronic Appendicitis with High-Frequency Currents. W. H. King, New York.
- 9 *Future of Psychotherapy. T. Klingmann, Ann Arbor, Mich.
- 10 Duodenitis. M. Gross, New York.
- 11 *Gastric Roentgenology. E. H. Skinner, Kansas City, Mo.

7. **Treatment of Diseases of the Heart.**—The conclusions arrived at by Cornwall are as follows: Make the diagnosis before prescribing treatment. Do not give heart stimulants to restore compensation when rest in bed alone will do it, except in cases occurring in middle or later life in which prolonged rest in bed might prove injurious. Do not give heart stimulants after compensation has been restored. Remember that children and young people should be kept in bed for at least one month after compensation in chronic valvular disease has been completely restored, and that they should be kept in bed for some time after an attack of acute endocarditis, with or without loss of compensation. Learn how to use the best remedies and forget the rest. Do not give digitalis to children or to old people, and always bear in mind the limitations and contra-indications to the use of this drug. Do not exceed 3 minims of tincture of strophanthus at a dose, except in extraordinary cases and when tolerance has been established. If you prescribe mechanical methods of treatment see that the dose is right; they can do harm in overdose as well as drugs. Do not expect to get compensation in a badly decompensated case of valvular disease too soon; be satisfied for a while if, under treatment, the patient does not get worse; improvement in many of these cases must be slow if it comes at all and attempts to hurry it unduly only exhaust the heart. Use the smallest dose of any remedy that will do the work. Rarely tell a patient with serious heart disease how grave is his condition, for such patients easily lose hope and become despondent, which aggravates their condition. The family, however, should always be told, and the patient should be informed of his true condition if that is the only way to secure his cooperation in treatment. Be slow to give up hope, at least of improving the patient's symptoms in apparently desperate conditions, and especially beware of giving too definite a prognosis. Cardiac therapeutics is in the majority of cases a fight against odds, but by the exercise of patience, perseverance, and especially judgment, many may be accomplished.

9. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1674.

11. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1582.

New York Medical Journal*January 14*

- 12 Treatment of Fractures, Especially Those of the Leg. C. Beek, New York.
- 13 How Pure Milk Cultures of Lactic Acid Ferments May be Obtained. F. S. Mason, New York.
- 14 Stereoscopic Photography with a Single Camera. W. G. Elmer, Philadelphia.
- 15 *"Grams"—Radiographs—in Three Dimensions. M. Girsdansk, New York.
- 16 Identification of the Tubercle Bacilli by Antiformin. D. Felberbaum, New York.
- 17 Diet, Nutrition and Growth in Children. E. M. Sill, New York.
- 18 The Heart in Lobar Pneumonia and Its Treatment. E. E. Cornwall, Brooklyn, N. Y.
- 19 *Fatal Case of Toxic Hematoporphyrinuria Complicating Septic Perforation of the Uterus. S. Wiener, New York.

15. **"Grams" in Three Dimensions.**—Briefly stated, Girsdansk's procedure is as follows: The Roentgen-ray apparatus and the photographic plate are adjusted in the usual manner. Assuming that the object is of such a size as to enable one to photograph it twice on the same plate, put the object over one-half of the plate, while the free half of the plate is protected with a sheet of lead, and a picture is taken. The operation is now reversed; the lead is put over the already exposed part; the object is moved over the still unexposed part, with the utmost care so that it maintains a position as symmetrical as possible to the source of light and to its own former position, and the picture is taken again. When the plate is developed, it shows a picture which resembles one taken with an ordinary stereoscopic camera. A print from such a plate differs from the commercial stereogram in that it is, in relation to the commercial picture, a transposed one, i. e., opposite to the right eye occurs the picture as would be seen by the left retina, and opposite the left eye occurs the picture as would be seen by the right retina. A Roentgenogram from such a plate is placed at a convenient distance from the eyes; a card board of a convenient size is prepared, and in the center of it a window is cut out which is about equal in size to any one individual picture of the twin Roentgenogram. The fenestrated screen is held in front of the print and at such a distance and in such a position that the right hand picture is in its entirety visible to the left eye, and the left hand picture to the right eye. When both eyes are focussed on the brim and frame of the card board window, the Roentgenogram appears at the plane of the window, as an image in three dimensions. If any difficulty at all is experienced at the beginning in the focussing of the eyes at the place of the empty window, one or more microscopic slides are fastened to the windowed card board by means of adhesive plaster, so as to cover it completely or in part and the observer proceeds as before. The image in three dimensions seems to appear on or between the glass slides.

19. **Toxic Hematoporphyrinuria.**—In this case the patient took repeated doses of saffron to induce abortion. Several similar cases are recorded in the literature. The symptoms of saffron poisoning, besides the hematoporphyrinuria are colic, vomiting, purging and convulsions, followed by delirium and coma.

Lancet-Clinic, Cincinnati*January 7*

- 20 Smith's Cataract Operation. (Continued.) D. T. Vail, Cincinnati.
- 21 Physiologic Measures in Treatment of Nervous Diseases. T. A. Williams, Washington, D. C.
- 22 Seasickness. H. R. Carroll, Cincinnati.

January 14

- 23 Smith's Cataract Operation (Concluded). D. T. Vail, Cincinnati.
- 24 *Pain in Abdominal Disease. W. M. Harsha, Chicago.

24. Abstracted in THE JOURNAL, Sept. 24, 1910, p. 1132.

Surgery, Gynecology and Obstetrics, Chicago*December*

- 25 *Surgical Treatment of Ulcers Along the Lesser Curvature of the Stomach. R. C. Coffey, Portland, Ore.
- 26 Use of the Finger in Rhinoplasty. T. A. McGraw, Detroit.
- 27 Ligation and Partial Thyroidectomy for Hyperthyroidism. C. H. Mayo, Rochester, Minn.
- 28 Brain Tumor with Impaction in Foramen Magnum Following Lumbar Puncture. W. W. Hamburger, Chicago.
- 29 Cerebral Hernia Following a Decompression Operation for Tumor of the Brain. C. A. Parker, Chicago.

- 30 Indications and Technic of Vaginal Cesarean Section. H. M. Stowe, Chicago.
- 31 The Newer Conservative Treatments for Pelvic Infection. R. T. Gillmore, Chicago.
- 32 *Diagnosis of Postoperative Insanity. J. C. DaCosta, Philadelphia.
- 33 Sarcoma of the Uterus. H. C. Dalton, St. Louis.
- 34 Use of Corpora Lutea in Gynecology. C. A. Hill, Pittsburg.
- 35 Traumatic Rupture of Pus Tubes, Causing Diffuse Peritonitis. C. M. Echols, Milwaukee, Wis.
- 36 Cesarean Section for Mechanical Obstruction; Ovarian Fibroma. G. Link, Indianapolis.
- 37 *A Popliteal Aneurysm of Unusual Size. J. R. B. Branch, Macon.
- 38 Technic of Nerve Alcoholization in Treatment of Spasticity and Muscle Group Overaction. N. Allison, St. Louis.
- 39 *Prostatectomy by the Perineal Route Without Opening the Bladder, with Immediate Suture. A. E. Hertzler, Kansas City, Mo.
- 40 *Extirpation of Upper Rectum and Sigmoid; the Noble Anastomat Modified. J. F. Baldwin, Columbus, Ohio.
- 41 Technic of Operations for Dilating the Os Uteri at or Near Term. C. B. Reed, Chicago.
- 42 *New Technic for Keeping Count of Gauze Pads. C. W. Barrett, Chicago.
- 43 *New Forceps for End-to-End Intestinal Anastomosis. L. J. Pollock and W. C. Speidel, Chicago.
- 44 *New Apparatus for Fracture Fixation. F. J. Cotton, Boston.
- 45 An Intravesical Ureterorenal Tumor. W. H. Lockett, New York.

25. Surgical Treatment of Ulcers of the Stomach.—The fact that very little has been said as to the surgical treatment of ulcers along the lesser curvature, and less as to the proper technic for excising an ulcer, prompts Coffey to report briefly five cases in which the patients were operated on during the year and in which a complete symptomatic recovery took place. These cases illustrate the various forms and locations of ulcers along the lesser curvature, and the variety of technic used. In Case 1, excision of the lesser curvature was done. This patient made a complete recovery, and five months after operation is well. Case 2 was one of long-standing ulcer which had finally healed and contracted the middle of the stomach down to a small tube with a caliber not larger than a lead pencil. Coffey excised the constricted portion of the stomach and duodenum, and did an end-to-end anastomosis between the two pouches. The clinical results were perfect, and the patient was well five months after the operation. In Case 3 the cicatrix of an old ulcer had almost completely closed the pylorus, and another large ulcer, located about the middle of the lesser curvature, was still active and bleeding but had contracted and formed sufficient scar tissue to make an hour-glass stomach. Only a narrow tube of healthy stomach remained on the greater curvature, therefore the only operation which offered hope of cure without incurring too much risk, was a gastrogastrostomy connecting the two pouches, and a gastrojejunostomy connecting the pyloric pouch with jejunum. The patient began to take nourishment on the third day and within two weeks was eating full meals and was well and fat when last heard from, seven months after the operation. Case 4 was one of ulcer well up toward the esophagus on the lesser curvature, which had gradually contracted producing almost complete stenosis near the esophagus, a small stomach tube passing with difficulty. The ulcer was excised and the wound closed transversely. The patient was symptomatically well five months after operation. In Case 5, a hard indurated ulcer was located in the posterior wall near the lesser curvature. The thick ragged edges of the ulcer were excised and the wound closed. The patient made an uninterrupted operative recovery.

32. Abstracted in THE JOURNAL, Dec. 10, 1910, p. 2093.

37. Popliteal Aneurysm of Unusual Size.—In Branch's case the left leg was the seat of a tumor, extending from within a few inches of the great trochanter to midway between the knee-joint and ankle. There was no motion at the knee-joint. The tumor was tender, especially behind the knee. The presence of fluid was demonstrated by a sensation of fluctuation at this point, and also over the small area about 2 inches internal to the patella and behind. A slight pulsation was seen and a slight murmur heard. The circumference of the right knee was 13 inches and of the left knee, 27.5 inches; right calf, 14 inches; left, 18 inches. A hip-joint amputation was done, but the patient never rallied from the operation, and died the following day.

39. Prostatectomy by the Perineal Route.—Elimination of the open wound, avoidance of perineal fistula, and prevention of incontinence are the ends Hertzler seeks to attain by his operation. By means of a modified Young's tractor, small enough (26 F.) to pass through the urethra without injuring it, the prostate is controlled and pushed into the wound so as to be accessible through the perineal incision. The bladder is moderately distended with water injected through the tractor, which is made hollow for the purpose. An inverted-V incision is made, beginning over the bulb and extending laterally on each side to the ischial tuberosities. The soft parts are incised down far enough to expose the median raphe. A Young's forked retractor is placed in position and strong traction is exerted. The raphe and levator are not incised, the urethra is cleared down to the prostate and the lower and posterior surfaces of the gland are exposed. Care must be taken to separate the rectum from the posterior surface as far as the bladder. As the dissection is done, all freely bleeding points are clamped and ligated. The capsule of the prostate is incised and separated from the gland on the lateral side as far back as the bladder. The dissection of the prostate from the urethra is then begun. If a median lobe exists it may be pressed into the wound after the lateral lobes have been removed. The opposite lobe is treated in the same way. When the lobes have been removed complete hemostasis is secured by making a purse-string suture in the depth of the wound, including the remains of the capsule and the rectum. The water is then drained from the bladder through the tractor, and if it is not blood-stained it may be assumed that the mucosa of the bladder and urethra has not been injured. The wound may then be closed, care being taken to obliterate all dead spaces by buried catgut sutures. The structure external to the cavity occupied by the prostate may be closed by sweeping silkworm gut sutures which pass through the skin after the manner of obstetric repairs of the perineum. The bladder is again irrigated and the blades of the tractor are closed while the bladder is distended, in order to avoid catching the wall between the blades of the tractor. The water may be allowed to escape before the tractor is removed. The wound which results, resembles that produced by a perineorrhaphy. If the urethra is intact, healing is complete in a week. Should the method fail, the necessary number of silkworm sutures may be removed and the wound treated as an open one just as though no primary union had been attempted. The operation as described, or a modification of it, has been done by Hertzler eight times. Infection requiring a complete opening of the wound occurred in one case, and partial opening was required in two other cases.

40. Extirpation of Upper Rectum and Sigmoid.—Baldwin has modified the Noble "anastomat" by making a curved tube, and by adding a spring device, to maintain the parts in apposition, as in the Murphy button. The inner tube is cut into a spiral, so as to furnish a spring of proper tension. To this is attached a hook which catches over the lower end of the outer tube. This hook can easily be caught with a hemostat, or with a special device. The inner tube being made flexible by the cutting of the spring enables one to bring the parts into position with less traumatism of the mesosigmoid than is possible with a rigid tube. Three of Baldwin's patients were women, and in these three he opened the cul-de-sac and passed gauze from above into the vagina so as to offer an additional protection in case of any leakage at the point of union in the bowel. In one of these cases this feature of the technic doubtless saved the patient's life, as a fecal fistula developed into the vagina; it had closed, however, when the patient left the hospital.

42. Keeping Count of Gauze Pads.—To laparotomy pads of all sizes, Barrett attaches a small, smooth, inexpensive snap through the medium of an 8 or 10-inch tape. To the laparotomy sheet a large horse-blanket pin, such as is now commonly used to group instruments, is attached a little distance from the wound. When each sponge comes to the field of operation it is snapped to the safety pin and is then introduced, the number of snaps indicating at all times the number of pads in the wound, and the tapes furnishing a ready means

of reaching the pads. The snaps are fixed, are not needed for other purposes, and are not to be confused with other instruments used and so remain at their task. Any sponge may be detached at will.

43. Forceps for Intestinal Anastomosis.—The instrument devised by Pollock and Speidel consists of a forceps shaped so as to form at its end an oblong square having at the center of its distal side two rings which may be approximated; these rings are inserted into slots, whereby rings of several sizes may be used in the instrument, the sizes being $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inches on their outside diameter. These rings are hinged, and the halves of the rings are held together by means either of a spring or a ball-and-socket lock. After the application of intestinal clamps, the mesenteric arteries are tied, the mesentery incised, and the intestines resected or divided in the usual manner. Each end of the intestines is then drawn through the rings by a fine tissue forceps, and the ends turned back over the rings as a small cuff. The forceps is then closed, thereby bringing the mucosa of the two ends of the intestines into apposition. There is no difficulty in turning back the mesenteric border and with it a small amount of the mesentery; the first suture, including the mesentery and the mesenteric border of the intestines, allows no subsequent bleeding. The severed ends may then be sutured by any of the various methods in vogue. The forceps is then removed by opening the rings and the mesentery is sutured in the usual manner.

44. New Apparatus for Fracture Fixation.—In certain old or new fractures (usually approximately transverse fractures) of the femur that cannot be brought into place by ordinary methods, in a certain few fractures of the upper arm, and some few fractures of the lower leg, Cotton uses an apparatus which consists of steel screws of a diameter of $\frac{5}{16}$ inch, with a screw thread of 24 turns to the inch cut on the fore end for a distance of $1\frac{3}{4}$ inches, and at the butt for a distance of $3\frac{1}{4}$ inches. This leaves a smooth polished shank at the point where the skin must eventually lie in contact with the screw. Each screw is cut at its tip into the shape of a "diamond-point" drill, at the other end it is so squared and tapered that it may be held firmly and squarely in a "drill chuck." The drill handle used is one furnished with such a "chuck," operating on the same principle as the more familiar "automatic" screw-driver. All that is necessary is to set the drill screw in the handle squarely, to set the point against the bone, and then alternately press on and release the "automatic" handle. Two screws are inserted into each fragment. The next step is accurate reduction of the fracture fragments. On each screw is spun a nut. Then over the whole set of screws comes a perforated oak board and then the washers. These nuts and washers are not steel, but iron, soft enough so that they can be "jammed" or "froze" in the setting up, giving a peculiarly rigid fixation. The advantage of this arrangement is said to be that an absolutely rigid fixation may be secured in this way without the least tendency to twist the screws (and with them the bones) out of the proper alignment.

Military Surgeon, Washington, D.C.

January

- 46 Enzootic Plague in the United States. W. C. Rueker, Washington, D. C.
- 47 Experiments on Relative Absorption of Solar Heat by Olive-Drab and Khaki-Colored Drilling. W. P. Chamberlain, H. D. Bloomergh and E. D. Kilbourne, U. S. Army.
- 48 Report on the 1910 Camp of the Division of the Pennsylvania National Guard at Gettysburg, Pa. A. S. Stayer, N. G. Pa.
- 49 Lessons Learned at Maneuver Camp. C. D. Center, I. N. G.
- 50 Report of the Chief Sanitary Officer of the Division, Camp of Illinois National Guard, at Peoria, Ill., 1910. D. W. Rogers, I. N. G.
- 51 The Army and the National Guard from the Viewpoint of a National Guard Officer. H. I. Jones, Ind. N. G.
- 52 Flat-Foot: A Possible Cause of Back-Ache. E. C. Hill, U. S. Army.
- 53 Ankylostomiasis. C. L. Cole, U. S. Army.

Quarterly Bulletin Northwestern University Medical School

December

- 54 *Perforating Duodenal Ulcer with Fat Necrosis. H. M. Richter, Chicago.
- 55 Significance of the Apex-Beat in Diagnosis of Cardiac Conditions. A. F. Beifeld, Chicago.
- 56 *Unusual Action of Acetyl-Salicylic Acid. W. H. Buhlig, Chicago.

- 57 *Bacteriology of the Stomatitis of Pellagra. W. H. Buhlig, Chicago.
- 58 *A Stable Anilin Gentian-Violet. W. H. Buhlig, Chicago.
- 59 *A New Theory Regarding the Mechanism of Skull Fractures. F. A. Besley, Chicago.
- 60 Diaphragmatic Hernia. J. H. Hess, Chicago.
- 61 Six Cases of Intestinal Obstruction. C. M. Fox, Chicago.
- 62 Quinin and Urea Hydrochlorate as a Local Anesthetic. V. D. Lespinasse, Chicago.
- 63 Mixed Hypercytosis, Its Nature and Significance. J. F. Hultgen, Chicago.

54. Perforating Duodenal Ulcer with Fat Necrosis.—Attention is called by Richter to an infrequent source of fat necrosis, the escape of duodenal contents into the peritoneum. In his case, on opening the abdomen, there immediately presented itself a widespread peritonitis, with considerable effusion, and with areas of fat necrosis widely distributed. The pancreas was immediately exposed, and found to be normal, though the injected overlying peritoneum suggested momentarily acute pancreatitis. Attention was then directed toward the duodenum, and a small perforation was found on its anterior border, about two inches from the pylorus. On retracting the liver and gall bladder, bile could be seen pouring through the opening. A thick inelastic ulcer could be made out in the bowel wall. The perforation was closed with sutures, and a posterior gastrojejunostomy made. A suprapubic peritoneal drain was inserted. The patient recovered.

56. Unusual Action of Acetyl-Salicylic Acid.—In Buhlig's case, about four hours after the ingestion of 10 grains of acetyl-salicylic acid, the face, particularly the lips and around the eyes, began to redden somewhat and swell, and shortly was so edematous and stiff that it was an effort to move the lips or eyelids. The bloating was so extreme as to give the impression of a local action of some poison. All over the body there was an urticarial eruption and a hoarseness developed, which a laryngologist asserted was due to edema. The maximum effect was reached in about an hour and a half, after which the edema and the eruption gradually receded.

57. Bacteriology of the Stomatitis of Pellagra.—In twelve out of fourteen cases in which direct smears were examined by Buhlig, there was found a combination of spindle-shaped bacilli and long wavy spirochetes. It is Buhlig's opinion that these symbiotic organisms, so common in ulcerative conditions, were one factor in the origin of the stomatitis. Both spirochetes and bacilli were Gram-negative, the latter sometimes only partially so. Cultures on Loeffler's serum were made from a number of these mouths. This particular medium was selected because there often were slight exudates in the mouths near the ulcerations. In these cultures many Gram-negative organisms were found which, from their size and their irregular staining with Loeffler's methylene blue, suggested that they probably were colon bacilli. As a matter of interest only, one of these cultures was plated and some of the colonies carried through the various media. Buhlig secured two Gram-negative organisms, one which corresponded nearly to the *Bacillus lactis aerogenes*, and the other was the *Bacillus cloacae*, so far as could be judged from cultural and microscopic methods.

58. A Stable Anilin Gentian-Violet.—Briefly, this is accomplished by excluding light and air as much as possible from the solution after it is prepared. Buhlig never filters anilin gentian-violet and, therefore, in addition to allowing the minimum action of air and light, he never disturbs or shakes the bottle containing this solution. This is practically carried out by putting the anilin gentian-violet into a syphon bottle of very dark brown glass. The intake for air is cut down to a capillary bore of such size that will still allow a flow of liquid, and the delivery tube is painted black to the tip with asphaltum paint. The lower part of the intake tube for air is also painted, to be quite certain of excluding light. This arrangement affords convenience as well as assuring a dependable stain.

59. Mechanism of Skull Fractures.—On investigation, Besley found that the fractures of the base bear a marked similarity in point of direction and location, regardless of where the blow is struck on the vault. These fractures do not follow the lines of least resistance, as to thickness or tensile strength.

The frequent occurrence of fractures in the middle fossa just anterior to the condyles, he believes, is confirmatory evidence of the inbending factor, due to counter force applied at the condyles.

American Journal of Urology, New York

December

- 64 A Case of Renal Calculi. F. C. Walsh, San Antonio, Texas.
- 65 Toxle Anuria Due to Bichlorid of Mercury. L. Gross, San Francisco.
- 66 Traumatic and Postoperative Retention of Urine. C. G. Cumston, Boston.
- 67 Normal Urine in a Patient with a Right Pyonephrosis. G. W. Warren, New York.

New Orleans Medical and Surgical Journal

January

- 68 Extrauterine Pregnancy. J. D. Bloom, New Orleans.
- 69 *A Simple Expedient in Treating Complicated Fractures of the Lower Jaw Forbidding Intrabuccal Prosthetics. L. H. Landry, New Orleans.
- 70 *Diabetes Mellitus Among Negroes. I. I. Lemann, New Orleans.
- 71 Gunshot Wounds of the Abdomen. C. Wilson, Birmingham, Ala.
- 72 Post-Diphtheritic Paralysis. L. L. Gazenavette, New Orleans.
- 73 Treatment of Syphilis of the Nervous System by Mercurial Inhalations in a Thermo-Diaphoretic Room. S. Schiro, New Orleans.
- 74 Neuralgia Pain in Distribution of Nerves Pressed on by Inflammatory Exudate and Scar Tissue. E. M. Hummel, New Orleans.
- 75 Study of the Blood in Certain Acute Infectious Diseases of Childhood and Their Diagnostic Value. J. J. Robert, Baton Rouge.
- 76 Treatment of Chorea. L. R. DeBuys, New Orleans.
- 77 Nephritis in Children. E. D. Fenner, New Orleans.

69. **Complicated Fracture of the Lower Jaw.**—The type of case considered by Landry is the case in which the splint is contra-indicated; that is, in multiple fractures of the jaw or marked compound cases with separation of the alveolar process, or cases with marked swelling and hematoma forbidding any intrabuccal appliance owing to pain and inability of keeping the mouth clean, etc. Landry has had occasion to study and observe two such cases. After reducing the fracture as much as possible, five or six turns of a thin Esmarch elastic bandage were taken around the head and chin, bringing the crowns of the teeth of the lower jaw in contact with those of the upper, and at the same time favoring and promoting the reduction and absorption of the hematoma and edema. The patient complained of inability to swallow, but this was due to the swelling and reactionary edema of the parts following the traumatism. Special attention was given to the cleaning of the mouth, particularly with the immobilizing bandage in place, which favored salivary stagnation and putrefaction. An irrigating can armed with a douche nozzle was attached to the head of the bed, and the patient instructed to use it himself, every hour, while awake, allowing the solution to go in as far back as possible and flow outward. In two or three days the swelling had subsided enough to allow him to take soft food. In four or five days, all the acute symptoms having subsided, the patient was allowed to walk about. The bandage was removed and readjusted whenever necessary to wash and freshen the skin. After seventeen days the patient was allowed to leave the hospital, with only a slight deformity and a good functioning jaw.

70. **Diabetes Mellitus Among Negroes.**—Among about 3,000 negroes Lemann found five cases of diabetes, four of which were severe. He says that there is no great difference in the frequency of the disease among whites and among negroes. The etiologic importance attributed by many authors to syphilis and alcoholism loses weight when viewed in the light of the statistics. The widespread existence of syphilis and alcoholism among the race has had no great effect in producing diabetes among them. In Lemann's series of negro diabetics neither of these factors seemed to have played any part in the causation of the disease. Another interesting point worthy of attention is the diet of the negro race. It is often preponderatingly carbohydrate with its hoecake, rice, hominy, and sugar cane. On the sugar plantations during the fall and winter months, sugar cane is an extremely important part and often a major portion of a day's dietary among the laborers. Certainly their carbohydrate function must be capable of caring for huge quantities if it can stand this strain.

Journal of Advanced Therapeutics, New York

December

- 78 Electricity in Treatment of Gout. F. de'Kraft, New York.
- 79 Roentgen-Ray Treatment of a Case of Lymphoid and Myeloid Leukemia, with Blood Findings of Each. J. W. Torbett, Marlin, Texas.
- 80 A Pendulum for Interrupting the Static Wave Current. G. E. Pfahler, Philadelphia.

American Journal of Physiology, Boston

January

- 81 *Physiology of Cell Division. R. S. Lillie, Philadelphia.
- 82 *Effects of Pressure on Conductivity in Nerve and Muscle. W. J. Meek and W. E. Leaper, Madison, Wis.
- 83 Effects of Stretching the Nerve on the Rate of Conduction of the Nervous Impulse. A. J. Carlson, Chicago.
- 84 Production of Glycosuria by Adrenalin in Thyroidectomized Dogs. F. P. Underhill, New Haven, Conn.

81. **Physiology of Cell Division.**—The chief experimental results of Lillie's work proved that the addition of small quantities of calcium chlorid to isotonic solutions of sodium salts (1) prevents the rapid increase in permeability produced in the unfertilized eggs of asterias and arbacia by the pure solution, (2) produces at the same time a marked decrease in the toxicity of the solution, and (3) prevents the membrane formation and initiation of cell division which are typically induced by the pure solution. The view is thus confirmed that both the toxic action of the pure salt solution and its action in initiating cell division are due primarily to the production of a condition of increased surface permeability. This increased permeability is, however, temporary in normal or favorable parthogenetic fertilization. Treatment with hypertonic sea-water after the formation of fertilization membranes by salt solutions results in an increase in the proportion of favorably developing eggs, especially in the case of arbacia, of which the majority of the eggs thus treated may reach active larval stages. Since hypertonic sea-water thus prolongs the life of the egg—an effect comparable to that of calcium in the above antitoxic action—and since prolonged life implies a practically normal permeability, the inference is drawn that the essential effect of such after-treatment is to bring the permeability—which has been increased by the initial membrane-forming treatment—again to the normal. An artificially induced increase is thus followed after a favorable interval by an artificially induced decrease of permeability. Without such after-treatment few eggs succeed in developing beyond an irregular early cleavage stage and development is abnormal.

82. **Effect of Pressure on Conductivity in Nerve and Muscle.**—The average time required to block the time impulse in the sciatic nerve of a frog by means of a constant pressure of 40 pounds was found by the authors to be 7.5 minutes. Under the same conditions 4.4 minutes were required to establish block in fresh sartorius muscles, and 2.4 minutes in curarized muscle. In both nerve and muscle the time necessary to interrupt conduction was proportional to the pressure applied and the strength of the stimulus. Immediately after the application to nerves of pressures not exceeding 20 pounds, stimuli of a given strength frequently caused an increased height of contraction in the recording muscle. There was probably a summation in the muscle of impulses set up in the compressed area with those due to the electrical stimulus.

Pennsylvania Medical Journal, Athens

December

- 85 *Past, Present and Future of Surgery. J. B. Deaver, Philadelphia.
- 86 *Significance of Transient Cerebral Crises and Seizures as Occurring in Arteriosclerotics. J. D. Heard, Pittsburg.
- 87 Symptomatology and Pathology of Tumors of the Pituitary Body. J. H. W. Rhein, Philadelphia.
- 88 Brain Abscess in Frontal Region; Operation; Death, with Necropsy Findings. T. Diller and J. K. Everhart, Pittsburg.
- 89 Trachoma and Facts Concerning Its Existence in Pennsylvania. C. M. Harris, Johnstown.
- 90 Progress of the Trachoma Campaign in Pennsylvania. C. P. Franklin, Philadelphia.
- 91 *Infant Mortality. S. G. Dixon, Harrisburg.
- 92 Urgent Need of More Adequate Care and Treatment for the Indigent Insane of Pennsylvania. T. Diller, Pittsburg.
- 93 Fear, as It Is Manifested in Psychoses, and Its Bearing on Treatment. W. K. Walker, Pittsburg.
- 94 *Acute Dilatation of the Stomach. E. Laplace, Philadelphia.
- 95 *Chronic Gastrosesenteric Ileus. G. P. Müller, Philadelphia.

85, 94 and 95. Abstracted in *THE JOURNAL*, November 19, p. 1837.

86 and 91. Abstracted in *THE JOURNAL*, Oct. 29, 1910, pp. 1580 and 1581.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

January 1

- 96 *The Heart in Disease of the Thyroid. J. S. Gilfillan, St. Paul.
- 97 Sinus Inflammation and Its Effect on the Eyes. T. McDavitt, St. Paul.
- 98 Epidemic Poliomyelitis: Prevention, Diagnosis and Treatment. W. A. Jones, Minneapolis.
- 99 A Case of Abdominal Pregnancy. F. A. Dunsmoor, Minneapolis.

96. Abstracted in *THE JOURNAL*, Nov. 19, 1910, p. 1832.

Kentucky Medical Journal, Bowling Green

December 15

- 100 Heart Block. F. C. Askenstedt, Louisville.
- 101 Movable Kidney. I. Abell, Louisville.
- 102 The Wassermann Reaction. E. S. Allen, Louisville.

American Journal of Diseases of Children, Chicago

January

- 103 *Anatomic Features of the Child's Thorax and Their Practical Application in Physical Diagnosis. G. Fetterolf and J. C. Gittings, Philadelphia.
- 104 *Three Hundred Cases of Acute Meningitis in Infants and Young Children. L. E. Holt, New York.
- 105 *Constant Presence of Tubercle Bacilli in the Cerebrospinal Fluid of Tuberculous Meningitis. J. Hemenway, New York.
- 106 *Influenza Meningitis and Its Experimental Production. M. Wollstein, New York.
- 107 Amaurotic Family Idiocy. I. A. Abt, Chicago.
- 108 *Atypical Scarlet Fever. C. G. Kerley, New York.

103. **Anatomic Features of the Child's Thorax.**—This work consisted of making dissections and sections of the bodies of infants which had been injected with a 10 per cent. dilution of liquor formaldehydi and then frozen. The results of the author's study of these preparations are embodied in this paper.

104. **Acute Meningitis in Infants and Children.**—The observations included in Holt's paper relate to 300 cases of acute meningitis seen in children for the most part under 3 years of age. Of this number 197 were observed during the lumbar puncture period and are available for more careful analysis. He says that apart from epidemics of cerebrospinal meningitis, 70 per cent. of the cases of acute meningitis occurring in young children are tuberculous. Etiologically, the 197 cases were divided as follows: Tuberculous, 138 cases; pneumococci, twenty-two cases; meningococci (sporadic), twenty-four cases; staphylococcus or streptococcus, ten cases; influenza, four cases; due to colon bacillus, one case. Two of these cases were mixed infections. Holt urges that lumbar puncture should be employed in every suspected case. It is only with very rare exceptions that to a skilled observer it gives uncertain results. In tuberculous meningitis, bacilli are always present in the cerebrospinal fluid; although difficult to find in the early stages, in later stages a careful examination should discover them. The v. Pirquet test in most cases gives positive results. In infants and very young children tuberculous meningitis occurs usually as an early manifestation of a general tuberculosis, and generally causes death before the lesions elsewhere are far enough advanced to give definite signs or symptoms. Pulmonary lesions are present in nearly all cases. Tuberculous meningitis is of human origin. Altogether the most frequent cause is exposure to adults with pulmonary tuberculosis. The age incidence and the seasonal occurrence are points which are not yet fully explained. Pneumococcus meningitis usually occurs in younger patients, and is associated with pneumonia. Clinically it resembles meningococcus meningitis but usually the course is shorter and it is almost invariably fatal. Influenza meningitis is infrequent and also resembles the cerebrospinal form; it, too, is almost invariably fatal. Streptococcus and staphylococcus meningitis are very rare forms in infancy, usually occur in the new-born and are often associated with spina bifida (but seldom follow mastoid disease); under such circumstances they are always fatal. Meningococcus meningitis is really the only variety in which at present there may be said to be any hope of recovery. The results in this variety of meningitis have been greatly improved by serotherapy.

105. **Tubercle Bacilli in the Cerebrospinal Fluid.**—In all but 2 of the 137 cases of tuberculous meningitis, tubercle bacilli were demonstrated in the cerebrospinal fluid. The fluid is collected in several test tubes, allowing about 20 c.c. to a tube. The last fluid withdrawn after the child has been raised to the sitting posture is considered the most important, as the bacilli are usually found more readily in this. Care must be taken not to shake the tubes. It has been found that a fibrin coagulum, the so-called film, forms oftener in tubes which have not been agitated. The fibrin coagulum is at first very delicate and friable. It forms with greater regularity and becomes firmer in fluids which have been placed in the incubator over night. After ten hours it is usually so firm that the entire film can be removed with a platinum loop. It is then carefully spread with fine needles on a glass slide. This is stained by the carbol-fuchsin Gabbett method. Bacilli were found with comparative ease in every case in which the film formed. In several cases in which the question of immediate diagnosis was extremely important, there was a sufficient coagulum after the fluid had stood three hours to enable one to find the bacilli.

106. **Influenza Meningitis.**—There have come under Wollstein's observation, within the past year, eight cases of influenza meningitis, from which the influenza bacillus was isolated in every case from the fluid removed by lumbar puncture, and the cultures studied in respect to their biologic reactions. All the cases terminated fatally.

108. **Atypical Scarlet Fever.**—Kerley cites a number of instances to prove that many cases of scarlet fever are so atypical as to go unrecognized until a sequela makes its appearance. He says that it is a disease of direct infection; it is rarely carried by a second person or object. The most contagious period is early in the disease during the period of angina, rash and temperature, therefore, the danger of transmitting the disease during the desquamation period is much exaggerated. Wrongly diagnosed and unsuspected cases are the great transmitters of the disease. During a scarlet fever epidemic, every suspect must be quarantined until he gives reasonable proof of innocence. The most constant symptom is the angina, a deep general congestion of the fauces, but even this may fail. In its symptomatology, scarlet fever is the most inconstant of the exanthemata. In its severity there are the widest possibilities.

Bulletin of the Manila Medical Society

November

- 109 Mortality Among Filipino Infants as Compared with Mortality Among European and American Infants. J. Albert, Manila.
- 110 Relation Between Physical Condition of Cattle and Their Resistance to Cattle Plague. E. H. Ruediger, Manila.
- 111 Medical Notes from French Indo-China. E. R. Whitmore, U. S. Army.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

January

- 112 Abnormal Implantation of Placenta. W. H. W. Knipe, New York.
- 113 *Should Eclamptic Mothers Nurse Their New-Born Infants? J. R. Goodall, Montreal.
- 114 Factors Concerned in Spontaneous Rupture of the Uterus. W. R. Wilson, Philadelphia.
- 115 *Value of Local Treatment in Gynecologic Cases. J. V. Young, New York.
- 116 *Pelvic Reflexes. R. T. Morris, New York.
- 117 *Two Cases of Perforated Gastric Ulcer. T. B. Noble, Indianapolis.
- 118 *Importance of Public and Private Hospitals in the Education of Young Physicians and Nurses, and the Clinical Instruction of Practitioners. J. Price, Philadelphia.
- 119 *High Operations in Cesarean Section. W. H. Humiston, Cleveland.
- 120 "Apical Pregnancy," a Pregnancy in the Horn of a Normal Uterus. H. Grad, New York.
- 121 *Fibromyomata of the Uterus, Complicating Pregnancy, Labor and the Puerperium. R. W. Lobenstein, New York.
- 122 *Treatment of Obstruction of Bowels Due to Malignant Neoplasm. M. J. Rosenthal, Fort Wayne, Ind.
- 123 Torsion of the Great Omentum. W. J. Gillette, Toledo, Ohio.
- 124 *Secondary Repair of Complete Perineal Laceration; Its Technique and Results. E. J. Ill, Newark, N. J.
- 125 *Cesarean Section, the Pregnant Uterus Being Within an Umbilical Hernia. J. H. Carstens, Detroit.

1113. **Should Eclamptic Mothers Nurse Their New-Born Infants?**—This paper was also published in the *Montreal Medical Journal*, November, 1910.

115. **Local Treatment in Gynecologic Cases.**—The cases in which Young regards local treatment as of value may be outlined as follows: inflammation of the external genitalia, infections and inflammations of the urethra and bladder, many conditions of the rectum and anus not mentioned in this paper, inflammatory and infectious conditions of the vagina, cervix, and endometrium, erosions, ulcerations or cystic degeneration of the cervix, cervical stenosis, uterine and pelvic congestion, local peritonitis, tubal infection, retroversion and the inoperable uterine prolapse of elderly patients. Preparatory to operation, local treatment has seemed to Young to be of great value both in private and hospital practice. In the relief of postoperative pain, and absorption of exudate left after operative procedures where infection had existed, the results have been most satisfactory.

116, 117, 118, 119, 121, 124 and 125. Abstracted in *THE JOURNAL*, Oct. 15, 1910, pp. 1402, 1403 and 1404.

122. Abstracted in *THE JOURNAL*, Oct. 8, 1910, p. 1311.

Western Medical Review, Omaha, Neb.

January

- 126 Insanities of the Puerperal Period. J. M. Aiken, Omaha.
- 127 Anterior Poliomyelitis. M. A. Ames, North Platte, Neb.
- 128 Preparation for and Operation of Appendicitis and Appendiceal Abscess. W. L. Sucha, Orleans, Neb.
- 129 Postoperative Acute Gastric Dilatation. H. M. Hepperlin, Beatrice, Neb.
- 130 The Emergencies of Hemorrhage and Eclampsia. A. E. Maek, Omaha, Neb.

Ophthalmology, Seattle, Washington

January

- 131 *An "Unlearnable" Vision Test Card for Use in the Naval Service. E. J. Grow, U. S. Navy.
- 132 Cyclophoria. A. A. Bradburne, Southampton, England.
- 133 Etiology, Pathology and Treatment of Concomitant, Convergent Squint. L. Emerson, Orange, N. J.
- 134 *Trachoma Treated After the Coover Method. H. H. Martin, Savannah, Ga.
- 135 An Unusual Factor in Amblyopia. F. M. Ruby, Union City, Ind.
- 136 Treatment of Daercystitis. G. Goldseth, Jamestown, N. Dak.
- 137 Traumatic Subconjunctival Dislocation of Cataractous Lens in Its Capsule. F. P. Maynard, Calcutta.
- 138 Presence of Non-Inflammatory Exudates in the Aqueous Humor. B. Chance, Philadelphia.
- 139 Marginal Ring Ulcer of the Cornea. S. H. Brown, Philadelphia.
- 140 A Case of Ulcerous Scleritis. H. Rønne, Copenhagen, Denmark.
- 141 Electrolysis in Treatment of Indolent Ulcers and Fistulas of the Cornea. F. Cornwall, San Francisco.
- 142 Anterior Chamber Irrigation After Cataract Extraction. E. T. Smith, Queensland, Australia.
- 143 Rupture of the Chorioid. G. F. Keiper, Lafayette, Ind.
- 144 Spasm of the Retinal Arteries. H. D. Bruns, New Orleans.
- 145 Spontaneous Thrombosis of the Central Vein of the Retina Following Parturition. A. Brav, Philadelphia.
- 146 Vaccine Therapy and Serotherapy in Ocular Tuberculosis. G. S. Derby, Boston.

131. Also published in the *United States Naval Bulletin*, August, 1910; abstracted in *THE JOURNAL*, Aug. 6, 1910, p. 534.

134. **Trachoma Treated by Coover Method.**—The first fifteen of the sixty patients seen by Martin were treated after Coover's method unmodified, the remaining forty-five were treated after the Coover method modified as follows: Instead of burning alcohol or making any other attempt to sterilize the sandpaper, he used the sandpaper just as it came from the shop, but immediately after the operation, the conjunctival sac was copiously irrigated with normal salt solution in order to clear the sac of any loose grains of sand; the lids were then everted and thoroughly scrubbed with gauze sponges and a 1 to 5,000 bichlorid solution (this was done also in the first fifteen). In the entire sixty cases there was no evidence of infection having occurred during the operation. Martin is convinced therefore that any attempt to sterilize the sandpaper is troublesome, unsatisfactory and entirely unnecessary. Immediately after the operation, the patients were kept in bed until they had recovered from the anesthetic, but no dressings or local applications were used.

Mississippi Medical Monthly, Vicksburg

January

- 147 Quinin in Malaria. J. T. Longino, Jonestown.
- 148 Fractures of the Skull. M. H. Roberts, Ebernezer.
- 149 A Case of Malarial Congestion. L. D. Harrison, Clarksdale.
- 150 Use of Gonococcus Vaccine in Chronic Gonorrheal Affections. S. T. Wells, Alligator.

Annals of Surgery, Philadelphia

January

- 151 Testing the Efficiency of the Collateral Circulation as a Preliminary to the Occlusion of the Great Surgical Arteries. R. Matas, New Orleans.
- 152 Anatomic and Surgical Desiderata in Exposure and Removal of the Hypophysis Cerebri. A. E. Schmitt, New York.
- 153 Treatment of Roentgen-Ray Ulcer. R. C. Throck, Jacksonville, Fla.
- 154 Posterior Gastro-Enterostomy, Three Years After Anterior Gastro-Enterostomy. M. A. Fauntleroy, U. S. Navy.
- 155 Non-Prostatic Urinary Retention of the Senile Bladder. M. W. Ware, New York.
- 156 Bone Abscess Treated with Moorhof's Bone Wax. C. C. Simmons, Boston.
- 157 Laceration of the Axillary Portion of the Capsule of the Shoulder-Joint as Factor in Etiology of Traumatic Combined Paralysis of Upper Extremity. T. T. Thomas, Philadelphia.
- 158 Disinfection of the Skin by Tincture of Iodin. C. L. Gibson, New York.
- 159 *Dry Iodin Catgut. A. V. Moschcowitz, New York.

159. **Dry Iodin Catgut.**—Ordinary catgut, just as it is bought from the dealers, is wound onto the well-known glass spools, in a single layer, and fastened at both ends, so as to prevent unravelling. It is then placed for five days in a 5 per cent. alcoholic solution of iodine in a tightly closed vessel (museum jar). On removal it is spread out on a sterile towel, covered by another sterile towel to facilitate drying, and is finally kept in a sterile container. Moschcowitz has proved to his own satisfaction, clinically as well as experimentally, that this dry iodine catgut is absolutely sterile. It is impossible to infect it by ordinary means. Its imbibition with iodine is not sufficient to act as an irritant on the tissues. Its tensile strength is superior to catgut prepared by other methods, and it is absorbed only after it has served the purposes for which it was intended.

Denver Medical Times and Utah Medical Journal

January

- 160 Case of Subglenoid Dislocation of the Shoulder (Erect Type), Avulsion of the Arm. M. E. Preston, Denver.
- 161 A Case of Strangulated Hernia. C. B. Dyde, Greeley, Colo.
- 162 Pericardium Penetrated by Needle. G. W. Miel, Denver.
- 163 A Tuberculous Muscle Tumor. F. C. Buchtel, Denver.
- 164 Some Passing Practices and Better Methods. B. O. Adams, Pueblo, Colo.
- 165 New Spinal Needle. C. G. Parsons, Denver.
- 166 Delayed Union of Fractured Limbs. H. G. Wetherill, Denver.
- 167 Repair of Fractures. G. F. Rochrig, Denver.
- 168 Diagnosis of Ureteral Problems. C. E. Tennant, Denver.
- 169 The Surgeon vs. the Physician. J. M. DeWeese, Denver.
- 170 Is Syphilis a Contagious Disease? F. Clift, Salt Lake City, Utah.
- 171 The Oral Hygiene Movement. E. C. Fairweather, Salt Lake City, Utah.

Memphis Medical Monthly

November

- 172 *Bacterial Vaccines a Factor in Therapeutics. W. Litterer, Nashville.
- 173 Injection Treatment of Infected Joints. M. G. Thompson, Hot Springs, Ark.
- 174 *The After-Care of Anterior Poliomyelitis. W. C. Campbell, Memphis.
- 175 Poliomyelitis. W. J. Wadlington, Memphis.

172 and 173. Abstracted in *THE JOURNAL*, Dec. 3, 1910, p. 2007.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

December 31

- 1 *Hyperchlorhydria and Its Complications. W. Russell.
- 2 *Distribution of Appendicitis, and Its Relation to Diet. O. T. Williams.
- 3 Clinical Study of Chronic Movable Kidney. P. Hicks.
- 4 *Use of Old Tuberculin Ointment in Diagnosis and Treatment of Lupus Vulgaris. A. Verge.
- 5 Cancer of the Breast. W. Mitchell.
- 6 *Cleft Palate Operations. T. S. Kirk.
- 7 A Case of Dwarfism. A. A. Jubb.

1. **Hyperchlorhydria.**—Russell summarizes the position by saying that if chronic gastric and duodenal ulcer be excluded, the question of operation depends on, first, the determination of the position of the inferior border of the stomach to the pyloric outlet; and second, on the prospect of being able to restore the sagged lower border. The first of these conditions is, in his experience, easy of attainment; the second depends on there being no natural or acquired barrier to the

passage of food through the pylorus or duodenum. On the accuracy of the answer to this last problem depends the accuracy of the prognosis, and it will determine the important question whether it is wise or not to try to restore a proper relation of stomach axis to outlet. It is, however, clearly stated by Russell, that many cases are most amenable to suitable medical treatment, but the attempt to cure all cases of ptosis—either partial or complete—can only end in loss of prestige to the physician. Physical laws hold here as elsewhere; and there are physical barriers to the emptying of some stomachs by the natural outlet—it is so impossible that it is simply fatuous to try to bring it about. Accuracy of diagnosis is not unattainable and on such accuracy or inaccuracy the physician's prestige naturally depends. If he attempts to cure what correct diagnosis would tell him he cannot cure, and the patient is driven by force of his misery into the hands of the willing operator, only one result can follow—namely, discredit to himself and the art he professes.

2. Distribution of Appendicitis.—A study of statistics has convinced Williams that appendicitis has a markedly different incidence in various countries, and that this different incidence may be largely a question of diet. Statistics show that where there is a large meat-eating population, appendicitis is a common disease, whereas in those countries where little meat is eaten, appendicitis is rare, if not almost unknown. There is no doubt that apart from improved diagnosis, appendicitis has greatly increased in the British Isles in the last few decades. Very little evidence has so far been advanced in explanation of this. The greatest change in the diet of the people has undoubtedly been the marked increase in meat eating. With the amount of foreign meat and canned food the poorer classes even are now able to supply themselves in fair quantity with meat of varying kinds, more particularly mutton. The fat of meat, more particularly that of mutton and beef, is characterized by the small amount of unsaturated fatty acid it contains. That the fat in the food determines the nature of the fat in the tissues is well known. From the clinical and chemical work quoted by Williams, it would seem that this factor determines the nature of the soaps to be found in the wall of the intestinal tract (probably as a manifestation of their excretion), and when these soaps are the calcium soaps of saturated fatty acids, there is usually some evidence of disease, either a mucous colitis or an intestinal lithiasis. In appendicitis, with which these two conditions are clinically associated, there is the same occurrence of these calcium soaps in the wall or in the lumen. In Williams' opinion, therefore, there is some evidence to connect the nature of the fat in the food with the incidence of the disease.

4. Old Tuberculin Ointment in Lupus.—As a means of diagnosis, Verge regards the application of tuberculin ointment of undoubted value. Numerous control tests were made by him in many other forms of skin diseases, such as psoriasis, lichen planus, sycosis, various forms of syphilis, dermatitis seborrheica, eczema, etc. In none of these did the typical reaction occur in the lesion, and the Moro reaction in the surrounding healthy skin was entirely absent. Therefore he thinks it may be fairly claimed to be a specific reaction occurring only in lupus. Several cases of doubtful diagnosis were cleared up, and so useful has the method proved that it is now employed in the skin department of the Royal Infirmary wherever there is any doubt as to the lesion not being lupus.

6. Cleft Palate Operations.—Kirk has used a continuous suture (No. 1 or 2 silkworm gut) in cleft palate operations with satisfactory results during the last three years. The operation he performs is the ordinary one with mucoperiosteal flaps in the case of the hard palate, and in the soft palate the latter is freed from the posterior margin of the bony palate and its muscles are divided. Apart from the ultimate good results obtained, he says that it will be found that this continuous suture can be inserted more rapidly and easily than the interrupted one, and that the necessity for great care to insert the stitches exactly opposite each other and to tie the sutures with the correct amount of tension is obviated. The ease and rapidity of operation makes the operation less serious, and it can easily be done when the child is 18 months old.

The amount of tension to be put on this suture must be sufficient, after it has been put in and before it is finally tied, to prevent the escape of any bubbles from the nose to the mouth in any part of the line of suture, when the patient is breathing quietly. The suture is put in close to the edges of the flap, only taking up enough tissue to give a firm hold and not enough to invert the margins. The suturing is most easily done from before backward. The form of needle Kirk uses is a small Durham's cleft-palate needle, bent at a right angle to the right, and he inserts it from below on the right side and from above on the left side, usually rethreading before each introduction. Only about $\frac{1}{2}$ inch of the silkworm gut should be passed through the eye of the needle, as the gut is apt to get frayed by the constant threading and unthreading. The suture can be left in for ten days or longer. He claims for a continuous suture that it gets rid of two of the causes of failure of union in cleft palate operations, namely, (1) imperfect apposition of the flap edges; (2) necrosis of the flap edges from stitch pressure; and that it considerably shortens the operation, thus materially diminishing the risk.

Lancet, London

December 31

- 8 Obesity and Certain Changes of Metabolism. O. Rozenraad.
- 9 *Simple Serodiagnosis for Tuberculosis: a Method of Obtaining an Immunity Index. V. B. Nesfield.
- 10 Clinical Aspects of Juvenile General Paralysis. J. J. Abraham.

9. Serodiagnosis of Tuberculosis.—With a view to discovering traces of immune substance in the serum of tuberculosis patients, Nesfield carried out a series of tests, taking as his basis the fact that the immune body combines with its specific bacterium or toxin, and that this bacterium-immune compound unites with complement. It is the principle employed by Wassermann for the diagnosis of syphilis. The procedure is described fully.

Australian Medical Journal, Melbourne

October

- 11 Acidosis and Acid Intoxication in Children. E. R. White.
- 12 Acetonuria and Acidosis. A. C. H. Rothera.
- 13 Sporadic Cerebrospinal Meningitis. M. Williams and R. Fowler.
- 14 Serotherapy of Epidemic Cerebrospinal Meningitis. G. A. Paton.
- 15 Brachial Neuritis Caused by Pressure of First Rib. T. Murphy.
- 16 Direct Examination of the Larynx, Trachea, Bronchi, and Esophagus. J. Murphy.
- 17 Quinsy. T. K. Hamilton.
- 18 Hemorrhagic Conjunctivitis. M. A. Schalit.
- 19 Hemorrhagic Mole. W. A. Wood.
- 20 Hemorrhagic Glossitis. R. A. Stirling.

Dublin Journal of Medical Sciences

December

- 21 Physiologic Effects of Alcohol. W. H. Thompson.
- 22 Tendencies of Modern Research in Veterinary and Human Medicine. E. J. McWeeney.

British Journal of Children's Diseases, London

December

- 23 Gangrene of Leg Following Diphtheria. J. D. Rolleston.
- 24 Chloroma. F. Tresilian.
- 25 Vaccine Therapy of Acute Infective Osteomyelitis. A. G. L. Reade.

Journal of Obstetrics and Gynecology of the British Empire, London

December

- 26 *Intraperitoneal Hemorrhage in Cases of Fibromyomata of the Uterus. A. J. Wallace.
- 27 *Torsion of the Fallopian Tube as a Factor in the Etiology of Hematosalpinx Apart from Extrauterine Pregnancy. A. L. McIlroy.
- 28 *Treatment of Eclampsia. J. W. Ballantyne.

26. Intraperitoneal Hemorrhage.—Wallace divides these cases into three classes: (1) the acute, in which the shedding of a large amount of blood is followed by a severe peritoneal crisis and general collapse; (2) the subacute or chronic, in which small or very moderate amounts of blood are shed at intervals, evidenced by mild signs of peritoneal disturbance of short duration, or by advancing anemia that is not explained by external losses or by general disease; (3) cases in which intraperitoneal bleeding occurs without evidence of its existence. In such cases the bleeding may have been pro-

voked by some exertion on the part of the patient. He reports seventeen cases in which the patients were submitted to operation. Death occurred in six cases—a mortality rate of 35.29 per cent.

27. Torsion of the Fallopian Tube.—The conclusions to be drawn from McIlroy's paper are that there is no one definite cause for the rotation of the pedicle, but that when torsion does take place followed by strangulation, there is an effusion of blood into the tissues and cavities of the organ or tumor involved. We may take it as proved in the majority of cases of hematosalpinx apart from ectopic pregnancy, that the cause is to be looked for in a torsion of the tube, as a rule at the uterine end. Predisposing causes such as congestive conditions, weakness of the vessel walls and tumors of the tube are to be taken into account. The exciting cause of the rotation may be found in the mobility of the tube in conjunction with increased intra-abdominal pressure. Peristaltic action of the lower bowel has undoubtedly some influence in favoring axial rotation. That torsion should occur in a perfectly healthy tube must be of rare occurrence, although histologic examination of series of tubes in the various stages of fetal development shows us that flexions of these organs are frequently present. The direction of the torsion and the number of twists are of little importance clinically, the degree of strangulation is what should be looked for on examination of the tube.

28. Treatment of Eclampsia.—For six years (1905-1910) Ballantyne has acted as physician in charge of the Edinburgh Royal Maternity Hospital during the autumn quarter, and in these eighteen months 2,214 patients were under his care. Thirty-eight of the patients suffered from eclampsia, or 1.7 per cent.; and five died, giving a maternal mortality of 13 per cent. During the autumn quarters of 1905, 1906 and 1907, there were twelve cases of eclampsia with three maternal deaths, or a mortality of 25 per cent.; while during the corresponding quarters of 1908, 1909 and 1910, there were twenty-six cases of eclampsia with two maternal deaths, a mortality of 7.6 per cent. The treatment employed in the latter period of time differed very markedly from that in vogue in the former. During the autumn quarters of 1905-1907, Ballantyne was still trusting in some measure to rapid emptying of the uterus, while in the corresponding quarters of 1908-1910, labor was hardly at all expedited. In the former years the maternal mortality was 25 per cent., in the latter it was only 7.6 per cent.; in the former years the fetal and infantile mortality was 75 per cent., and in the latter it was 42 per cent. Whether the eclampsia develops during pregnancy, during labor, or in the puerperium, Ballantyne orders venesection, transfusion with saline solution into the vein, washing out of the stomach with bicarbonate of soda solution, the introduction into the stomach of a large dose of magnesium sulphate, the use of a copious enema of soap and water and castor oil, and the hot pack. Obstetric interference has been put more and more into a secondary position.

Clinical Journal, London

December 14

- 29 Abortion. G. E. Herman.
30 Tuberculin Dispensaries and Sanatoria. A. M. Fraser.

December 21

- 31 Tuberculosis and Its Prevention. J. E. Squire.
32 Lymphadenitis. H. A. T. Fairbank.

Journal of Tropical Medicine and Hygiene, London

December 15

- 33 Recent Progress in Antityphoid Inoculation. R. H. Fox.
34 Growth of the Fungus of *Tinea imbricata* on Artificial Media. A. Castellani.
35 Yaws. A. B. Duprey.

Medical Press and Circular, London

December 21

- 36 Primary Chronic Nephritis in Children. A. B. Marfan.
37 Fringes of the Cancer Problem. W. S. Handley.
38 Modern Ideas on the Pathology of Syphilis. W. D. Emery.
39 Tonsillar Abscess: a Historical Note. J. Knott.

Journal of Hygiene, London

November

- 40 Reports on Plague Investigation in India. M. Greenwood and S. Rowland.

Annales de Médecine et Chirurgie Infantiles, Paris

December 1, XIV, No. 23, pp. 725-760

- 41 Curable Forms of Acute Tuberculosis in Children. Avragnet and L. Tixier.
42 *Index of Child's Physical Development. (Les divers indices numériques d'appréciation clinique de la robusticité chez l'enfant.) E. Gaujoux.
43 Perforated Duodenal Ulcer in Girl of 14. H. Bichat.

42. Index of Child's Physical Development.—Gaujoux thinks that a reliable estimate of the child's robustness can be obtained by dividing the weight by the length, using the metric system. The average normal weight at birth, 3 kg., divided by the average length, 50 cm., gives the index as 0.06 at birth. At 1 month, 3.75 kg. divided by 54 cm. equals 0.069; at 1 year, 9 kg. divided by 71 cm. equals 0.12; at the age of 5, 15 kg. divided by 100 cm. equals 0.15; at 10 years, 25.5 kg. divided by 130 cm. equals 0.19, and at 14, 35 kg. divided by 154 cm. equals 0.23. The index thus regularly increases with the child's growth, and he gives the index computed for each year of a child's life by this and other methods; no other formula, he says, seems to give such an instructive insight into the child's actual physical condition.

Bulletins de la Société de Pédiatrie, Paris

November, XII, No. 8, pp. 417-500

- 44 *Landry's Paralysis in Course of Epidemic Poliomyelitis. A. Netter.
45 Positive Wassermann Reaction in Rachitis. (Rachitisme syphilitique et séro-diagnostic.) H. Dufour and A. Huber.
46 Senile Type of Dwarf Growth Possibly of Suprarenal Origin. (Progeria de Gilford.) G. Variot and Pironneau.
47 Hydrocephalus as Sequel of Acute Meningitis. (Rapports de l'hydrocéphalie et des méningites aiguës.) P. Harvier and G. Schreiber.
48 Syphilis as Common Cause of Adenoid Vegetations. H. Abrand.
49 *Serodiagnosis of Whooping-Cough by Hemolytic Test. (Diagnostic de la coqueluche fruste par la réaction de Bordet-Gengou.) Delcourt.
50 *Gastro-Intestinal Disturbances in Children from Standpoint of Tropical Pathology. J. L. Duenas.

44. Epidemic Poliomyelitis.—Netter states that recently he has encountered a number of cases of acute poliomyelitis in Paris, in which the children developed paralysis of the Landry type. He admits that the virus is transmitted generally in the nasopharyngeal secretions, and that healthy germ-carriers or those with only slight symptoms of the infection are mainly instrumental in carrying contagion. Prophylaxis, he says, should be based on these apparently well-established facts, with isolation of the sick and exclusion from school of children from families in which a case has occurred. The nasal passages should be disinfected. Other children in the family and other inmates of the house are rarely affected, although a few cases are known in which from four to seven children in the family developed the disease, and not always in unhygienic homes.

49. Hemolytic Test for Suspected Whooping-Cough.—Delcourt applied the complement-deviation test in a recent epidemic of whooping-cough and was able to reveal by this means a number of cases so mild that the infection was not suspected. He is confident that such cases of masked pertussis are common in children and adults, and that serodiagnosis may be important from the standpoint of prophylaxis.

50. Gastro-Intestinal Disturbances in Children in Cuba.—Duenas remarks that the influence of a tropical climate on children is shown most decidedly in Cuba by the frequency of gastro-intestinal disturbances even more than by the mortality. The long persistence of the heat is responsible for their development both in adults and children and the children seem to be born with a predisposition for various gastro-intestinal disturbances. At Havana are encountered, he says, all forms of digestive affections known and described by the classic writers of all countries. The abundance and toxicity of intestinal putrefactions, in connection with the enhancing of the virulence of infectious germs by the heat, compel especially energetic therapeutic measures.

Lyon Chirurgica, Lyons

December, IV, No. 6, pp. 513-612

- 51 Malignant Lipoma. (Classification de certaines tumeurs malignes.) L. Bérét.
52 *State of Other Kidney in Renal Tuberculosis. H. Fayol.

52. Condition of Kidneys in Renal Tuberculosis.—Fayol concludes from his research on this subject and clinical experience that incipient tuberculous lesions in the other kidney, but with normal functioning, permit the removal of the first kidney with pronounced tuberculosis. Delayed or refused operation is inevitably fatal, while, on the other hand, incipient lesions in the other kidney seem to be arrested by nephrectomy for a long time at least. Nonspecific lesions, albuminuria, etc., do not contra-indicate nephrectomy unless the albuminuria is excessive and accompanied by numerous tube-casts; signs of insufficiency of the kidneys indicate that parenchymatous nephritis is already installed. When one kidney is unmistakably, irreparably tuberculous and the other kidney is functioning badly, nephrostomy or exploratory nephrotomy should be done and the patient supervised for four or six weeks. During this time the true functioning of both kidneys can be estimated and secondary nephrectomy may become possible; in any event the primary nephrotomy is liable to give relief and improve conditions for the major operation later. With advanced tuberculous lesions in both kidneys even an exploratory nephrotomy may entail fatal anuria. At the last international surgical congress the mortality of nephrectomy after functional tests of the other kidney was reported as averaging now only 2.85 per cent., and Albarran's mortality is below 2 per cent.

Presse Médicale, Paris

December 17, XVIII, No. 101, pp. 945-960

- 53 *Idiopathic Curvature of the Neck of the Femur in Adolescents. (Les fausses coxalgies.) M. Savariaud.
- 54 Radiographic Diagnosis of Oxycephaly and Other Conditions with Excessive Pressure within the Skull. M. Bertolotti.
- December 21, No. 102, pp. 961-968
- 55 Removal of Certain Bladder Tumors by Natural Passages. G. Marion.
- December 24, No. 103, pp. 969-976
- 56 *Serotherapy of Typhoid Fever. A. Rodet and Lagriffoul.
- December 28, No. 104, pp. 977-984
- 57 Serodiagnosis of Pott's Disease. (Réactions du liquide céphalorachidien au cours de la pachyméningite Pottique.) J. A. Sicard, Foix and Salin.
- 58 Technic for Injection of Salvarsan. P. Ravaut.
- 59 Technic for Preparing Albumin Milk. (Le lait albumineux.) G. Schreiber.

53. Coxa Vara of Adolescents.—Savariaud discusses cases of what he calls "false coxalgia," the curvature of the neck of the femur causing pains for which no inflammatory origin can be discovered. He has encountered seven cases in the last few years and calls attention to the three instructive signs of the condition, namely, the shortening of the leg with the great trochanter unduly high, the rotation of the tip of the foot outward with adduction of the knee, and the non-interference with the movements of the leg except with abduction and inward rotation. This triad of symptoms, he states, is seen only in spontaneous coxa vara and in old fractures of the neck of the femur, improperly called traumatic coxa vara. The hip joint may be ankylosed or not, and the shortening of the limb may be more or less pronounced. The trouble is due generally to defective growth of the bones—some parts developing too rapidly for the rest, and the persons thus affected are usually tall and lanky, with a tendency to flat-foot, genu valgum and poor circulation in the extremities. On this soil any overexertion, too long standing, etc., are liable to develop the false coxalgia. When the curvature of the femoral neck is recognized early, treatment should be mainly prophylactic—relieving the limb of the weight, having the youth change work if need be to relieve him from too much standing, or arranging his work so that he can sit. If there is concomitant arthritis, treatment should be by rest and continuous extension. If the deformity is well established, resection of the head and neck of the femur might be considered, but the ultimate outcome scarcely justifies such extensive interference and the wearing of a higher sole usually answers the purpose. On the other hand, when abduction is much limited and radiography shows that this is due mainly to the encroachment of the great trochanter on the ilium, resection of the enlarged trochanter is a good palliative operation.

56. Serotherapy of Typhoid.—Rodet and Lagriffoul have used an antityphoid serum of their own make in sixty-five cases of typhoid and the results, they state, have been grati-

fying. The serum acts best when given early, within eight or nine days or up to the eleventh day, and the infection must be pure, without associated infection. The serum seemed to abort the disease under these conditions in many cases, they state, and to render it much milder in the others and to shorten convalescence. The patients treated were in the Montpellier and Lyons hospitals; some were also given baths, others not.

Revue de Chirurgie, Paris

December, XXX, No. 12, pp. 1081-1248

- 60 Bismuth Paste in Treatment of Cold Abscesses. (Traitement conservateur des abcès froids.) E. G. Beck.
- 61 *Technic for Ligation of Subclavian Artery. (Technique opératoire de la ligature de la sous-clavière en dedans des scalènes et dans le médiastin.) P. Duval.
- 62 *Isolated Fracture of the Transverse Processes of the Lumbar Vertebrae. J. Tanton.
- 63 *Ulceration of the External Iliac Artery from Pressure of Drain in Appendiceal Abscess. Caraven and L. Basset.
- 64 *Origin of Hypertrophy of the Prostate. E. Marquis.

61. Ligation of Subclavian Artery.—Duval has successfully ligated the subclavian in three recent cases, and states that Monod found no fatalities among the last ten cases he has compiled from the literature. There is, therefore, he thinks, no need to regard the measure as exceptionally serious if done after temporary resection of muscle and bone to give access to the region. The skin is incised so as to permit temporary resection of the inner third of the clavicle, the left half of the manubrium and the first costal cartilage in one block. Resection of the clavicle is indispensable to ligate the subclavian properly, he declares. The article is illustrated.

62. Isolated Fracture of Transverse Processes.—Tanton refers in particular to the transverse processes of the lumbar vertebrae. This lesion is one of the latest to be revealed early by radiography, and the disturbances resulting from it are generally mistaken for other traumatic or post-traumatic affections of the lumbar region. Only fifteen cases of the kind have been reported, he believes, and he adds two to the list. Pain is the chief aid to diagnosis; it may be more or less localized and more or less severe, with sometimes pain in moving the legs. The local pain is usually intense at the moment of the fracture and it may radiate into the adjoining parts or follow the sciatic nerve; or the anterior abdominal wall may be tender. When the fracture involves the transverse process of the first lumbar vertebra the pain may be so severe as to interfere with respiration and immobilize the diaphragm. The patient generally lies on his back and efforts to raise the leg on the side of the fracture are usually extremely painful, as is also bending the trunk forward. When the trunk is flexed, the lumbar curvature increases in case only one process is fractured, while the curvature flattens out if several are involved. There is little if any pain as the trunk is bent backward, unless the fracture involves the fifth transverse process. The patient picks up an article from the floor like a person with Pott's disease; the gait is also characteristic, the knees are bent, the arms akimbo. The lesion generally heals in about a month without leaving appreciable traces, but in two of Haglund's cases the pains persisted for two years, and in Hoffmann's case an ossifying myositis developed. If the disturbances persist, the fractured process may be removed, as has been done in one case; in two others the hematoma in the region suppurated. In the first, the necrotic broken-off piece of the process maintained a purulent fistula, requiring two operations before recovery. In the other case the trouble was ascribed to a retrocecal abscess, and notwithstanding two operations the patient succumbed to suppurative psoriasis and pneumonia. Any contusion of the lumbar region leaving persisting pain and functional disturbances should be examined for isolated fracture of one or more of the transverse processes.

63. Ulceration of Iliac Artery in Contact with Drain Tube. Caraven and Basset report a case of hemorrhage from this cause after an operation for an abscess of appendicitic origin. Immediate ligation of the artery saved the patient, but this was not always possible in the four or five other cases of which they have learned. Only for two of these patients was immediate surgical relief possible, and these were the only patients who recovered; another survived the hemorrhage, but succumbed to resulting peritonitis. In one case the hem-

orrhage was internal. Such complications should be prevented by not letting the drain reach in far enough to touch the artery.

64. Hypertrophy of the Prostate Often a Suburethral Tumor.—Marquis reports research on the pathologic anatomy of so-called hypertrophy of the prostate, which confirms the clinical conclusions to the effect that in the majority of cases the apparent enlargement of the prostate is in reality an extraprostatic, suburethral reaction to traumatism of the region in the course of micturition or to infections by way of the urine or both. Comparison of the findings in 949 prostatectomies on record, shows, he says, that Freyer's method of enucleating the benign suburethral tumor, paying no attention to its source of origin, gives better results than perineal prostatectomy. The latter has a record of orchitis in nearly 25 per cent., of perineal fistula for more than three months in about 13 per cent., of incontinence in 10 per cent., and of complete retention or rectal fistula in 6 per cent., while none of these complications and little, if any, impairment of the sexual function occur with the transvesical technic except orchitis in 1 per cent. and retention in less than this proportion. The greatest argument in favor of the transvesical route, however, is that some of the most ardent advocates of the perineal route, a few years ago, seem now to have abandoned it completely.

Semaine Médicale, Paris

December 21, XXX, No. 51, pp. 595-608

- 65 Viscosity of the Blood and Its Clinical Significance. (Valeur clinique de la viscosité du sang.) L. Cheinisse.

December 28, No. 52, pp. 609-616

- 66 *Salpingitis and Laminaria Tents. R. de Bovis.

66. Salpingitis in Relation to the Use of Tents.—De Bovis discusses a recent communication on the frequency of evidences of salpingitis in women who have had the os uteri dilated with tents preliminary to curetting. He does not believe that the tents introduced germs, but that by obstructing the outlet to the uterus they induced stasis which favored the development of otherwise harmless germs already present, the germs rapidly acquiring virulence and setting up inflammation in the tubes. Amersbach thus found microscopic traces of inflammatory processes in the tubes in 42 per cent. of twenty-six women operated on for tubal sterilization. The inflammation seemed to have been transient and harmless, and even this was absent in the non-puerperal cases, but de Bovis reports a case of pelvic peritonitis evidently resulting from the tent dilatation in a non-puerperal case. There is a possibility of pre-existing gonorrheal inflammation in this case, but no one can guarantee against this in any case. On the whole, it is much safer, he says, to refrain from the use of tents.

Archiv für Gynaekologie, Berlin

XCII, No. 2, pp. 279-605. Last indexed Dec. 17, 1910, p. 2187

- 67 Etiology of Hematoma in Vulva or Vagina. C. Wimpfheimer.
68 Inflammatory Processes in the Adnexa. (700 Fälle von entzündlichen Adnextumoren.) L. Goth.
69 Dermoid Cysts and Their Metastasis. S. Boxer.
70 *Pregnancy Liver and Atypical Eclampsia. (Zur Physiologie und Pathologie der Schwangerschaft.) G. Schiebele.
71 *Heart Defects and Pregnancy. (Die Prognose von Schwangerschaft, Geburt und Wochenbett bei Herzfehlern.) R. T. Jäschke.
72 *Eclampsia Possibly an Anaphylaxis from Fetal Albumin. J. Thies.
73 Phlegmasia Alba Dolens. (Entwicklung des Begriffes und die Bedeutung der Phlegmasia alba dolens.) P. Kroemer.
74 Case of Peritoneal Pregnancy. J. F. M. Hammacher.

70. Eclampsia.—Schiebele has become convinced by his clinical experience and study of the literature that eclampsia occurs in various forms and degrees, ranging from the typical manifestations with convulsions, through the atypical form without convulsions and the severe, sometimes fatal, uncontrollable vomiting of pregnancy, to a condition in which there may be only a few symptoms showing that something is wrong. These symptoms are peculiarly violent, including salivation, exanthems, peripheral neuritis, vomiting, disturbances in vision, "pregnancy disturbances," etc. Jaundice may occur alone or with any of the above conditions. The liver may be specifically pathologic without any of these symptoms. It is probable, he thinks, that the changes in the liver and other organs in eclampsia are the result of an intravital

autolysis of the liver due to some still unknown eclampsia toxin. Chemical research on urine, etc., has not afforded any bases for better knowledge of the nature of eclampsia, to date.

71. Heart Defects and Pregnancy.—Jäschke analyzes the experiences with 1,548 women with heart defects delivered at von Rosthorn's clinic at Vienna; this was 1.47 per cent. of the total 37,014 deliveries during the last ten years. On the basis of this extensive material, his conclusions are more favorable than those of most writers on the outcome of a pregnancy with a pre-existing heart defect. He even declares that a heart defect should be regarded and estimated during a pregnancy exactly the same as outside of a pregnancy. The mortality was from 0.32 to 0.39 per cent., and in all the fatal cases the heart defect was exceptionally serious or combined with myocarditis. In seven-eighths of the cases the pregnancy proceeded to normal delivery at term. In only 4 per cent. was there spontaneous abortion, and spontaneous premature delivery in only 4.5 per cent. No special influence from the nature of the valvular defect was apparent, but failing compensation favors premature interruption of the pregnancy. In some cases the women seem to become accustomed to the heart defect with recurring pregnancies. Artificial interruption of the pregnancy was necessary in 1 per cent. of the cases on account of severe failing compensation. Functional tests of the heart decide the question as to whether the patient can stand the strain of delivery or not, especially Katzenstein's test (described in *THE JOURNAL*, July 9, 1904, page 159), and the Koranyi test (described Oct. 2, 1909, page 1141). In the severer cases operative sterilization of the woman may be advisable if the condition renders further pregnancies too dangerous. An undisturbed course of the pregnancy may be counted on in 96 per cent. of all cases; danger need be feared, as a rule, only when the heart defect is particularly severe, or the myocardium involved, or when there is complicating nephritis. Even with slightly failing compensation the delivery proceeded without disturbance in 98 per cent. of all his cases; there was no special tendency to atony and no special indications—on account of the heart defect—were encountered at any stage of labor. The delivery must be supervised by the obstetrician with exceptional care, however, especially in the period of expulsion in order to act immediately if any procedures become necessary. No operative procedure, he insists, is contra-indicated by the heart defect in itself. Scrupulous asepsis is more imperative in case of heart defect than under other conditions, as puerperal infection has special dangers for such patients. During the puerperium, the woman with a heart defect is not exposed to any more dangers on this account than the healthy, but she should be kept in bed a little longer to reduce the demands made on the heart. There is nothing to contra-indicate breast nursing. Any involvement of the myocardium naturally renders the prognosis graver. Age is also an unfavorable factor, as likewise the depressing influences of a large number of pregnancies occurring at short intervals.

72. Etiology of Eclampsia.—Thies injected rabbits with serum from fetuses and found that the gravid animals reacted with a kind of anaphylactic syndrome suggesting the symptoms of eclampsia. The same effect was obtained also to a very slight degree and much more slowly in the non-gravid animals. He thinks that the results of his research suggest that eclampsia is a kind of anaphylaxis induced in the maternal organism by the alien albuminous substances in the serum of the fetus.

Archiv für Verdauungs-Krankheiten, Berlin

December, XVI, No. 6, pp. 627-804

- 75 Ferments in Testing Gastric Functioning. (Experimentell-vergleichende Untersuchungen über den klinischen Wert der neueren Magenfermentproben und die Wesenseinheit von Lab und Pepsin.) P. Cohnheim.
76 Secreting Cells in Small Intestine. (Ueber die Panethischen Zellen des Dünndarmes.) L. Fischl.
77 Amebic Dysentery. E. Axisa.
78 Favorable Influence of Hydrogen Dioxid on Hyperchlorhydria. (Klinische und experimentelle Erfahrungen über den Einfluss des Wasserstoffsuperoxyds auf Hyperchlorhydrien und auf die Magensekretion.) F. Poly.
79 Palpation of Appendix. N. M. Rudnitzki.
80 Digestion of Cellulose. (Zelluloseverdauung bei dem Menschen.) F. Schilling.

- 81 Membranous Enteritis in Typhoid Fever. N. Ortner.
82 *Pain in Diagnosis of Gastric Cancer. (Zur Diagnose des Magenkarzinoms mit besonderem Hinweis auf das Schmerzsymptom.) B. Erlanger.

82. Pain in Chest or Shoulder as Early Sign of Gastric Cancer.—Erlanger describes five cases in which attacks of pain, diagnosed in some instances as intercostal neuralgia, were the only or the principal sign of an unsuspected gastric cancer. The first patient was an elderly man whose violent pains in the left side of the thorax were accompanied by the tender points characteristic of intercostal neuralgia. The pain occurred at first spasmodically, but later became more continuous and was increased by movements of the body. The patient was sometimes kept awake at night by the pains, and began to grow thin; no improvement followed courses at various sanatoriums for the supposed neuralgia, but tests of stomach functioning revealed a lack of free hydrochloric acid and abnormally low total acidity. The stomach tube encountered a slight obstruction near the cardia, and the possibility of a neoplasm at this point was suggested, but the pains then subsided and did not recur under bed rest. The suspected cancer made itself manifest a few months later. There was evidently a carcinomatous lymphangitis in this case with infiltration of the paravertebral tissue, inducing the neuralgiform pains. The second patient was a man of 37, healthy until slight gastric disturbances were noted, and at one time an attack of pain in back and upper abdomen so severe that he consulted a physician who prescribed codein. The stool was black one day about this time. The "neuralgia" returned occasionally and the patient was put on a special diet. Not long after this a very severe attack of pain came on one night, leaving the abdomen tender. As the attacks of pain kept recurring and with great intensity, the patient consulted several physicians, but none made any special diagnosis, until Erlanger tested the stomach functioning, finding no trace of free hydrochloric acid. Necropsy later revealed a gastric carcinoma that had developed on the basis of an old gastric ulcer. During the clinical study of the case there had been nothing to suggest malignant disease except the lack of free hydrochloric acid. The clinical picture had been solely attacks of pain resembling in some respects gallstone colic. In the third case an apparently healthy man of 32 developed symptoms of gastric ulcer, subsiding spontaneously, but returning about a year later for a brief period. Some time after this he had severe pains in the back, which were most severe when reclining. The pain was not continuous, but at times so severe that the man screamed. The attacks generally lasted an hour or two, and sometimes required morphin. The pains radiated to the shoulders and leg at times, but there were no signs of a tumor; the patient could not eat meat and had no appetite, while the increasing weakness and depression suggested malignant disease, but there were no signs to localize it except one enlarged gland in the left supraclavicular region. Necropsy disclosed a carcinoma in the lesser curvature of the stomach extending into the paravertebral tissue. There had never been fever, but sweat crises had been frequent toward the last. In the third case a manifest cancer in the stomach was accompanied by intense pain at times in the back and sacral region. It is assumed that the cancer in this case has also spread to the posterior wall of the abdomen, or there is metastasis in the tissues adjoining the spine, but the patient is still living. The fifth case is that of a man of 40 whose father and mother had both died of cancer, and a brother has cancer of the rectum. The objective findings suggested benign stenosis of the pylorus on the basis of an old gastric ulcer, especially as the stomach chemistry appeared to be normal. The patient consented to a gastro-enterostomy, but a carcinoma was found at the pylorus with metastasis in the greater omentum. There were no special pains in this case; but the extreme weakness and loss of appetite dominated the clinical picture. Erlanger discusses in conclusion what has been written on the pains with gastric cancer—they are generally described as nothing well defined or characteristic—and reviews the points that differentiate the pain from other causes. The main point is to think of the possibility that the neuralgiform pains may be due to cancerous involvement of the regions innervated by the intercostal, lumbar or sacral nerves.

Beiträge zur Geburtshilfe und Gynäkologie, Leipsic

XVI, No. 1, pp. 1-198. Last indexed Aug. 27, 1910, p. 809

- 83 Placenta Marginata and Placenta Implanted in the Cornua. (Placenta marginata und Verhalten der Tubenecken in der Schwangerschaft.) H. Bayer.
84 *Cesarean Section for Placenta Implanted Between Body and Cervix. (Isthmusplacenta und Kaiserschnitt.) O. Pankow.
85 The Isthmus of the Uterus. O. Büttner.
86 Pelvis Deformed from Trauma of Articulations. (Ueber ein Lazerationsbecken.) A. Sitzenfrey.
87 Origin of Cystic Tumors in the Ovary. (Herkunft cystischer Gebilde der Ovarien.) G. Schiekele.
88 *Hysterectomy for Puerperal Sepsis. (Zur Frage der Exstirpation des septischen Uterus.) G. Schiekele.

84. Cesarean Section for Placenta Implanted Between Body and Cervix.—Pankow advocates abdominal Cesarean section with placenta prævia, and states that he had no mortality among the twenty-three women treated in this way, while eight died of the forty-nine others, and he is convinced that six might have been saved by prompt abdominal Cesarean section. The children were delivered in good condition in the twenty-three Cesarean section cases, except one who had inhaled amniotic fluid.

88. Hysterectomy in Puerperal Sepsis.—The great question, of course, is whether the puerperal septic process is limited to the uterus or not. The only way to learn how to recognize these cases, Schiekele affirms, is to examine the uterus after its removal and compare the anatomic changes with the preceding clinical course in every case without fail, striving to obtain premises for certain general conclusions. At necropsies also the anatomic findings in the uterus should be studied and compared with the record of the clinical course. He describes a number of typical cases from his own experience, which demonstrate, among other things, that severe puerperal infection may develop without the uterus itself becoming diseased. The pathogenic germs may penetrate through the intact uterus wall into the general circulation, and general symptoms of sepsis and metastasis are then the first signs of trouble. In this group of cases, hysterectomy would be useless, as the uterus itself is not diseased. High fever for several days suggests a possible progressive inflammatory process inside the uterus, and this suspicion is strengthened by development of symptoms of peritonitis. The indications are especially urgent when there has been some preceding intra-uterine intervention. The vicinity of the uterus should be free from infiltration, and there should be no signs of general infection for the indications in this class of cases to be beyond question. The third category includes the cases in which fever persists after some intra-uterine procedure, and soon afterward chills follow or germs are found in the blood, or both occur together. In these cases the uterus should be removed without delay in the hope of forestalling general infection. If a few days have elapsed before the chills and sepsis develop, then the hysterectomy comes too late, especially if signs of metastasis have manifested themselves in the meanwhile. At the same time, Schiekele continues, if the chills and sepsis do not follow the intra-uterine intervention until after several days, with continuous fever in the interim, hysterectomy is indicated without delay in the hope that the mischief may be confined to the uterus, or at least that removal of the primary focus may bring relief. This applies also to cases in which the uterus has been injured. The trend of the times, he believes, is unmistakably toward operative treatment of puerperal fever. One of the cases reported in detail shows the importance of the slightest signs of peritonitis as an indication that the process is spreading beyond the uterus and that in immediate hysterectomy lies the only salvation of the patient. It was not done in this instance, and this lesson was learned from the necropsy findings in this and in some other cases. Another case teaches that signs of severe infection still persisting after manual separation of the placenta are an indication that the process is spreading, but that the immediate removal of the uterine focus may abort it. The general condition is the criterion in puerperal infection almost more than in any other circumstances. In one case of febrile abortion requiring intra-uterine intervention entailing considerable laceration, the general condition was good and the patient rapidly recovered. In two cases with signs of severe general infection in the first week, including swelling of a finger and decubitus, there were no signs of local

trouble in the uterus after the intra-uterine intervention, and necropsy in both revealed the uterus in good physiologic condition; the puerperal infection had penetrated the walls and set up fatal sepsis, leaving the uterus unmolested. Most of the various cases reported are instructive, because the necropsy findings are compared with the clinical records and clinical impressions, and Schickele urges others to do this at every opportunity as the best means to obtain light on this important subject of puerperal infection.

Berliner klinische Wochenschrift

December 12, XLVII, No. 50, pp. 2277-2328

- 89 *Treatment and Diagnosis of Progressive Paralysis. K. Bonhoeffer.
90 *Tardy Reaction After Salvarsan. Goldbach.
91 *Eventual By-Effects on the Cranial Nerves from Salvarsan. J. H. Rille.
92 *Salvarsan in Therapeutics. (Praktisches und Theoretisches vom Arsenobenzol Ehrlich-Hata 606.) K. Toutou. Commenced in No. 49.
93 Importance of Salt for Metabolism. (Bedeutung des Kochsalzes für den Stoffwechsel.) H. Strauss.
94 Epidemic Poliomyelitis. (Neuere Erfahrungen über die akute spinale Kinderlähmung.) R. Cassirer.
95 *Urine Findings in Diagnosis of Cancer. (Verwertung des Harnbefundes zur Carcinomdiagnose.) E. Salkowski.
96 *Drainage into Abdomen of Spina Bifida and Hydrocephalus. B. Heile.
97 Otosclerosis. G. Brühl.
98 Theory of Anaphylaxis. E. Friedberger.

89. **Progressive Paralysis.**—Bonhoeffer does not think that the recent achievements in serology and the introduction of salvarsan have been of much service in the diagnosis and treatment of progressive paralysis. In fully 15 per cent. of the cases, he says, we may anticipate remissions in the course of the disease during the early stages. A patient entering on a phase of remission should not be reported as "recovered" under the drug that he happened to be taking at the time. If the weight begins to increase, a suspicion of a remittent phase is justified. He further emphasizes the point that true syphilitic processes may coexist with the changes responsible for the paralysis, and consequently benefit will follow as the former subside under specific antisyphilitic measures.

90. **Tardy Reaction to Salvarsan.**—Goldbach reports that at the clinic for cutaneous skin diseases in charge of Lesser, several cases have been observed in which an eruption, angina and gastro-intestinal disturbances developed in from seven to ten days after injection of salvarsan for syphilis. The phenomena were observed, together with an extremely violent reaction at the point of injection, the whole picture suggesting a toxic syndrome due to the arsenic or to the production of antibodies in consequence of the medication.

91. **By-Effects of Salvarsan Involving the Cranial Nerves.**—Rille states that recurrence has been observed in fourteen of the forty syphilitics kept under observation since treatment with salvarsan. He further reports three cases in which patients with recent infection developed severe symptoms on the part of the cranial nerves. In the first, deafness came on four weeks after the injection, facial paralysis two weeks later, and choked disc a week and a half later. The patient was a robust girl of 21. The second patient was likewise a previously healthy girl of 18, infected with syphilis about four months before the injection of the drug. Nearly eight weeks afterward headache and vertigo developed, followed three weeks later by right facial paralysis and after another week by bilateral optic neuritis and right fourth nerve paralysis. In the third case a blacksmith became deaf nearly thirteen weeks after the injection, given three months after primary infection. Only one of these patients had recovered entirely at date of writing. Rille adds that complications of this kind have never been observed after mercurial treatment, but he does not venture to decide whether they are manifestations of the Herxheimer reaction or the result of an especial affinity of the drug for the nerve tissue.

92. **Action of Salvarsan.**—Toutou explains the failure of salvarsan to kill all the spirochetes as due to the fact that it is unable to reach all of them. In order for it to display its destructive action on the spirochetes, they must be mobilized and brought out from their lurking places so that the drug can act on them. He suggests that this might possibly be accomplished by preliminary treatment with some drug which would mobilize the spirochetes, seeking them out and driving

them out into regions accessible for the salvarsan. This may be done by means of the ordinary physical measures, exercise, massage, baths and sweating procedures, or they may be supplemented by iodids. He regards the intravenous technique as best for administration of the salvarsan, and reports some cases in which it seemed to display therapeutic action on spirochetes other than the pallida.

95. **Urine Findings in Diagnosis of Cancer.**—Salkowski and Kojo have worked out a simple method for determination of the nitrogen precipitated by salts of the heavy metals in relation to the total nitrogen output. The average in the urine of ten healthy persons was 1.22 per cent., while in ten cancer patients it averaged 3.03 per cent., the maximum being 4.62 per cent. The minimum, 2.15 per cent., was never reached in healthy urine. These facts are suggestive, but further experience is needed to determine whether the different findings are pathognomonic of malignant disease. The technique is simple; the filtrate corresponding to 100 c.c. of urine is neutralized with acetic acid and precipitated with lead subacetate; the precipitate is then quantitatively collected, rinsed and its nitrogen content ascertained. The figure representing this is then compared with the total nitrogen from 100 c.c. of urine to show the percentage of the latter represented by the former. The phosphoric and sulphuric acids in the urine must first be removed by the ordinary barium-chlorid process. Zinc chlorid or zinc sulphate can also be used for determination of the nitrogen precipitation with or without preliminary removal of the phosphoric acid with calcium chlorid or hydrate.

96. **Surgical Treatment of Spina Bifida with Hydrocephalus.**—Heile reported last year his attempt to ensure permanent drainage of the cerebrospinal fluid into the abdomen in a case of this kind. He sutured a loop of small intestine, drawn out near the spina bifida, to the open dural sac, and the drain answered its purpose perfectly, but so much fluid was thus drained away so abruptly that the child succumbed to this and the effects of the laparotomy necessary to draw out the bowel. To avoid these drawbacks he now drains the fluid into the abdomen by means of a wick of six silk threads introduced into the dural sac at one end and carried through a subcutaneous passage into the side of the abdominal cavity, into which it protrudes near the costal arch. The minute incisions rapidly healed in the case reported. The 2-days-old infant was kept lying on his back with the pelvis raised for a time to prevent too rapid drainage. The child has no further signs to date of the spina bifida and hydrocephalus for which the operation was done. The various steps of the operation are shown in three illustrations.

Deutsches Archiv für klinische Medizin, Leipzig

CI, Nos. 1-2, pp. 1-208. Last indexed Dec. 24, 1910, p. 2274

- 99 The Heart Sounds and the String Galvanometer. (Aufzeichnung von Herztönen mit dem Einthoven'schen Saitengalvanometer und Untersuchungen über Galopprrhythmus.) W. v. Wyss.
100 Lymphosarcomatosis and a Positive Wassermann Reaction. F. Trembur.
101 Prevention and Treatment of Catarrh. W. Ebstein.
102 Improved Spirometer. (Zur spirometrischen Methodik.) R. Siebeck.
103 Blood and Heart Findings with Nitrobenzol Intoxication. R. Massini.
104 Hemoglobinuria with Muscular Paralysis. (Eigenartiger mit Muskellähmungen verbundenen Fall von Hämoglobinurie.) F. Meyer-Betz.
105 The Nucleus Test of Digestive Processes. (Die Grundlage der Ad. Schmidt'schen Kernprobe.) F. W. Stranch.
106 Internal Drug Antisepsis. (Zur Frage der inneren Desinfektion.) A. Knick and J. Pringsheim.
107 Action of Albumin Bodies and Albuminoids on Coagulation of Blood. (Einwirkung von eiweissartigen und Eiweisskörpern auf die Gerinnbarkeit des Blutes.) H. Grau.
108 Roentgen-Ray Diagnosis of Gastric Cancer. (Bedeutung der Röntgenuntersuchung für die Diagnose des Magencarcinoms.) M. Faulhaber.
109 Velocity of Blood Stream in Anemia. (Zur Frage der Blutgeschwindigkeit bei Anämie.) V. Weizsäcker.

Deutsche medizinische Wochenschrift, Berlin

December 22, XXXVI, No. 51, pp. 2369-2416

- 110 *Obstetric Version. (Indikationen und Technik der Wendung.) K. Baisch.
111 Diabetic Lipemia. G. Klemperer.
112 Salvarsan in Syphilis. J. Jadassohn.
113 Action of Salvarsan on Spirochetes in Mouth. P. H. Gerber.
114 Emotional Instability of Blood-Pressure. (Psychogene Labilität des Blutdruckes und ihre Bedeutung in der Praxis.) P. Schrupp.

- 115 Cultural Differentiation of Paratyphoid and Enteritis Bacteria. R. Müller.
 116 Cholera Not Result of Nitrite Poisoning. (Zur Emmerichschen Theorie des Choleragifts.) H. Schidorsky.
 117 Blood-Count Technic Applied to Organized Elements in Urine. (Zur Methodik der Zählung organisierter Harn-elemente.) A. Kakowski.

110. **Indications and Technic for Version.**—Baisch cites statistics from Döderlein's and other clinics which show that version is applied on an average in about 1.5 per cent. of deliveries and forceps in about 2.4 per cent. In the clinics forceps and version are applied in 4 per cent., that is, in about one-third of all the operative births, while in general practice they are applied in two-thirds of all the operative deliveries. Decapitation and perforation, he declares, amount to 0.8 per cent. of all operative deliveries in the clinic and 0.1 per cent. in general practice. These figures confirm his impression that the mutilating operations are far too rare in private practice, as these alone are harmless for the mother, while the operations which presumably spare the child, but are fraught with danger for the mother, are far too frequent. His statistics show further that the mortality of the children with version amounts to 50 per cent., not including the infants who die soon after birth, which brings the total mortality from version up to 70 per cent. With this imposing mortality of the children with version, we are fully justified, he says, in seeking to restrict its application in favor of perforation of the fetus. If half of all the versions were omitted and in their place a mutilating operation done, the results for the children would be the same, he declares, but for the mothers it would be incomparably better. In a recent case, a physician doing version for a supposedly living child, found it had been dead for some time, and he then perforated the fetal head and tried to express the placenta by the Credé method, but found it impossible, and then discovered that the uterus had been completely ruptured. The woman died from peritonitis and the physician was sued for malpractice. Even though such results of version are extremely rare, yet difficult version is liable to induce severe injury, infection and long illness; think of the consequences of injury of the bladder or rectum, he exclaims. In the interests of the mother we must select with the greatest care the cases in which version is indicated.

Medizinische Klinik, Berlin

December 18, VI, No. 51, pp. 2005-2044

- 118 *Gastric Ulcer. (Behandlung des runden Magengeschwürs.) G. Singer.
 119 Moving Pictures as Aid in Studying and Teaching Nervous and Mental Diseases. H. Hennes.
 120 Value of Combining Suggestion with Physical Measures in Treatment of Heart Disease. M. Herz.
 121 *Insufficiency of the Vertebrae. G. Zuelzer.

118. **Gastric Ulcer.**—Singer reviews his experience with gastric ulcer, and says that feeding by the rectum is the only safe method in cases complicated with severe hemorrhage. In two such cases the attempt to commence the Lenhartz diet brought on serious hemorrhage anew, but restriction to nutrient enemata soon placed the patients on the road to recovery, and then the Lenhartz diet was tolerated without inconvenience and the final outcome was unusually good. He emphasizes the importance of rest and refraining from violent exertion for months and years; patients who have had a gastric ulcer must regard themselves as constantly liable to bring on new disturbances by errors in diet and overexertion. Two patients had had repeated small hemorrhages from a duodenal ulcer, but all disturbances ceased after a Lenhartz course, and the health was apparently perfect for months, when lifting a heavy weight or pushing a heavy table brought on the whole train of symptoms again. The patient should keep in touch with his physician for years and return at the slightest symptom suggesting the flaring up of the trouble. Singer calls particular attention to an early sign which he has found practically constant; this is a sensation of discomfort or pain radiating from the epigastrium toward the costal arches and thence along the intercostal nerve routes to the spine. The regularity of the appearance of this pain or sense of discomfort, especially in connection with eating, is characteristic, and almost pathognomonic of gastric ulcer, even when there is scarcely any dyspeptic disturbance.

121. **Insufficiency of the Vertebrae.**—Zuelzer calls attention anew to the disturbances which Schanz has described as resulting from insufficiency of the vertebrae analogous to the condition with flat-foot. Schanz' description was given in THE JOURNAL, Oct. 12, 1907, page 1318, and Zuelzer's experience has confirmed its accuracy in every detail. He found it associated with flat-foot in twenty-three cases. Rest and relief from weight-bearing are the main points in treatment, with massage in the milder cases, but the parts should be left at peace to recuperate in the severer cases. An expensive supporting corset is not necessary. Zuelzer has two long elastic strips of steel run into an ordinary corset, parallel to the spine, and has found that this answers the desired purpose.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXII, No. 2, pp. 173-310. Last indexed Nov. 19, 1910, p. 1852

- 122 *Blowing Out the Pleural Effusion and Other Pathologic Accumulation of Fluids Instead of Aspirating Them. (Ausbläsung anstatt Aspiration von Pleuraergüssen.) I. Holmgren.
 123 Neuralgia of the Base of the Fourth Toe: Morton's Metatarsalgia. (Die Mortonsehe Form der Metatarsalgia.) G. C. Bolten.
 124 Anemic Gangrene and Ulceration in Intestine as Result of Simple Distention. (Experimentelle Untersuchungen über die Entstehung von sogen. Dehnungsgeschwüren des Darmes.) K. Shimodaira.

122. **Blowing Out Instead of Aspirating Pleural Effusions.**—This article first appeared in *Hygiea*, Stockholm, September, 1910. Holmgren's experience now includes seventeen cases in which he has applied this measure. His technic differs considerably from that previously used for evacuation of pathologic effusions. Air is pumped in at an opening above to take the place of the effusion as it is forced out below by the pressure of the in-streaming air. This technic prevents the slightest change of pressure in the chest as the pressure is automatically regulated, and there are no manipulations to discommode the patient. The pumping in of the air is done with a double bulb in the hands of an assistant, the interposed tube being several feet long to make it more convenient for the patient. The operator watching over the two puncture needles can inspect and regulate the inflow of air and outflow of fluid. The pleural effusion can thus be forcibly blown out to the last drop without the patient's feeling the slightest discomfort. The puncture is made in the tenth interspace between the scapula and axillary line, the region being first painted with iodine and the patient being seated. The spot where the lower cannula is to be introduced is anesthetized by injection of a 1 per cent. solution of cocaine. By this means it proved possible to remove 3,200 c.c. of a tuberculous pleural effusion without the patient's feeling anything more than an agreeable sense of relief. In another case 3,100 and 2,000 c.c. were thus removed at two sittings. The technic described has the advantage that the procedure of evacuating the pleura can be supplemented by pumping air or gas into the cavity to induce therapeutic pneumothorax as indicated.

Münchener medizinische Wochenschrift

December 13, LVII, No. 50, pp. 2617-2672

- 125 Action of Salvarsan on Experimental Infection of Rabbits. (Wirkung des Dioxydiamidoarsenobenzols auf die experimentelle Vazineinfektion des Kaninchens.) L. H. Marks.
 126 *Lethal Dose of Salvarsan in Acid Solution. (Experimentelle Erfahrungen über die letale dosis der sauren Lösung von Ehrlich-Hata 606.) H. E. Hering.
 127 *Salvarsan in Syphilis. (Behandlung der Syphilis mit Arsenobenzol.) F. Weiler.
 128 *Thrombosis After Intravenous Injection of Salvarsan. T. Hansmann.
 129 *Paget's Disease of the Nipple. (Krebsekzem der Brust.) G. Hirsche.
 130 *Serodiagnosis of Typhoid. (Praktische Erfahrungen mit der serodiagnostischen Typhusreaktion nach Mandelbaum.) F. Ast.
 131 *Paraffin Injection in Treatment of Chronic Constipation. I. Lipowski.
 134 Improved Therapeutic Roentgen-Ray Technic. (Eine neue Methode der Röntgenbestrahlung.) J. Schwenter.
 135 Improved Inhalation Therapy. T. Christen.
 136 *Stenosis of the Larynx. (Seltene Verengungen des Kehlkopfes.) H. Graff.
 137 Facial Paralysis from Food Poisoning. (Fazialislähmung bei Nahrungsmittelvergiftungen.) F. Erben.
 138 Causes Starting Delivery. (Untersuchungen über die Ursachen des Geburtseintrittes.) F. Sauerbruch and M. Heyde.

126. **Lethal Dose of Salvarsan.**—Hering experimented with the acid solution of salvarsan in intravenous injection in five rabbits and five dogs. The results showed that the fatal

dose per kilo for the rabbits was 0.0045 gm. and for the dog from 0.01 to 0.02 gm. This is equivalent to a lethal dose of 0.315 gm. for a man of 70 kilos (about 150 pounds), estimated from the rabbit and of 1.15 gm. estimated by the dog. Fränkel and Grouven have reported the death of a patient injected intravenously with 0.4 gm. of salvarsan in 15 c.c. water with 1 c.c. 1/10 normal sodium hydroxid. Hering thinks that his experiments show that this was above the lethal dose for man, but he is inclined to believe that the acid reaction is mainly responsible for the toxicity of the solution. In an alkaline solution the rabbits were able to bear twenty times the otherwise lethal dose, and the dogs ten times.

127. Salvarsan in Syphilis.—Weiler reports experiences at the Leipsic dermatologic clinic in 206 cases of syphilis. Forty of the patients have been under continued observation and recurrence has been noted in fourteen. In three of these cases symptoms on the part of the cranial nerves have been noticed, but as yet it is impossible to say whether they are manifestations of the syphilis or by-effects of the medication. In seventeen cases eruptions developed, accompanied by jaundice in two cases. In two other cases the eruption and temperature resembled typical scarlet fever. In another case hemorrhagic nephritis developed a few weeks after the injection. On the whole, Weiler states that salvarsan undoubtedly works more rapidly than the usual measures in many cases, in some also much more powerfully, but we have as yet no criterion as to whether the drug is able to eradicate the disease. Weiler never used the intravenous route.

128. Thrombosis After Intravenous Infusion of Salvarsan.—Hausmann recently stated that he had never observed thrombosis in several hundred intravenous infusions of salvarsan, but now reports a case. It confirms his previous statement that infection is responsible for the thrombosis as in this case, by an accident, the injection was made elsewhere than in the area sterilized for it. The patient was a young man who had had veins punctured for the Wassermann test five times and also for a second infusion of salvarsan, without mishap. The thrombosed vein was resected a month after the infusion, and the *Streptococcus albus* was cultivated from it. In another case Hausmann in trying to obtain blood for cryoscopic investigation in a patient with a stab wound in the kidney; entailing great loss of blood, punctured the vein in various places before he could obtain enough of the very thick blood for the test, and yet there was no tendency to thrombosis. These two cases show the importance of infection in the development of thrombosis.

129. Paget's Disease of the Nipple.—Hirschel has encountered two cases during the last year in which an eczematous affection of the nipple and breast proved to be secondary to carcinoma beneath. He previously reported a similar case and here insists on the necessity for discarding the term, Paget's disease of the nipple, and calling this affection by its true name, cancerous eczema of the breast. In both of his cases the eczema had been noticed over a year before its malignant character was recognized. In one case the physician then consulted sent the patient at once to the surgeon. In the other case the patient consulted a physician four weeks after the first sign of the affection was observed. He treated it for simple eczema, and a second and third physician the same during the course of the disease. The patient finally applied to a dermatologist who advised an operation at once. Notwithstanding extensive amputation and Roentgen exposures, multiple recurrences are now manifest, six months later. Hirschel knows of about one hundred cases in the literature, and emphasizes that the trouble is not cancer developing on chronic eczema but eczema secondary to cancer.

130. Mandelbaum's Reaction in Typhoid.—THE JOURNAL, March 5, 1910, page 827, gave an illustrated description of the Mandelbaum technic. Ast has been applying the test to 106 persons and found it extremely sensitive, revealing typhoid agglutinins in some cases even when the agglutination test was negative. It seems to be especially useful for detection of bacillus carriers. On the other hand, a slight tendency to a positive reaction was obtained in some of the apparently healthy.

131. Treatment of Chronic Constipation by Injection of Paraffin.—Lipowski's attempt to prevent absorption of fluid in the rectum by injection of paraffin was mentioned in THE JOURNAL, Sept. 4, 1909, page 822. He makes the injection in the evening and his further experiences have confirmed, he says, the benefit of this treatment as the most certain means at our disposal for removing the cause of chronic constipation, while it is the simplest and easiest. The injection is made in the knee-elbow or side position, the tube and funnel being warmed and the paraffin warmed until it is fluid. He has found the method useful for children and especially for infants. The paraffin injection is proving further, he declares, an effectual means for aiding in the cure of hemorrhoids, fissures, proctitis and hemorrhagic or inflammatory changes in the rectum. The consistency is that of a salve at the temperature of the body.

136. Stenosis of the Larynx.—In Graff's first case the stenosis was the result of lordosis of the cervical vertebræ in a man of 60, the disturbances coming on gradually in the last two years. In the second case a young man awoke one morning with signs of stenosis ascribed to angina and laryngitis and a tuberculous process was assumed at first. The dyspnea became so intense that by the end of six weeks tracheotomy had to be done and the patient had to wear a cannula permanently. An inflammatory process was treated in various ways with no effect and attempts to dilate the stenosis proved ineffectual. In order to exclude an inflammatory process in the vertebræ, the patient was examined with the Roentgen rays when a foreign body was discovered, which proved to be the metal stopper of a mineral-water bottle. When the patient was shown the foreign body, he remembered that he had been drinking mineral water the night before the first sign of trouble and felt that he had swallowed something like a crumb at the time, but had quite forgotten it. The foreign body had penetrated the wall of the trachea and lay close to the spine, without injury of the esophagus. It took over two years to relieve the patient from the necessity of wearing the cannula.

Policlinico, Rome

D.ember, Surgical Section No. 12, pp. 525-568

- 139 *Early Diagnosis and Radical Treatment of Laryngeal Cancer. T. Della Vedova.
140 Structural Changes in Partially Transplanted Nerves. (Istopathologia degli impianti nervosi centrali parziali.) D. Maragliano.
141 Modification of Krause's Cholecystenterostomy. O. Marchetti.
142 Parathyroid Tumors. S. Gussio. Commenced in No. 11.

139. Laryngeal Cancer.—Della Vedova pleads for an earlier diagnosis of cancer of the larynx by the general practitioner and says that this is possible even without specialist skill. The ultimate outcome of the various methods of treating laryngeal cancer seems to be far better in the cases in which laryngotomy was done than in those with a more radical operation. About the first sign of the tendency to cancer is a change in the voice, which too often is referred to a harmless catarrh, but the change in the voice persists unmodified and isolated, even when the general health seems to be continually good. When the voice is hoarse the cancer is generally located in the region of the glottis, involving the vocal cords or their vicinity. A guttural tone suggests a cancer lower down. The change in the voice gradually grows more pronounced or complete aphonia may follow, especially if the cancer is located on the true vocal cords. Other signs that should arouse suspicion are an uncontrollable cough, a little pain radiating to the ear, blood streaks in the sputum and more or less difficulty in breathing after effort. There may be slight spasm of the glottis, especially after coughing. In this early stage there is no tendency to lose weight or grow weak and no infiltration of glands, so that the patient may feel constantly well for months and years until the symptoms of advanced malignant disease become manifest. As laryngotomy is commended as the best operative technic, the practitioner, Della Vedova says, should feel less hesitation in advising immediate operation, this being a comparatively simple measure.

Riforma Medica, Naples

December 12, XXVI, No. 50, pp. 1373-1400

- 143 Inflammatory Processes Around the Sigmoid. (Meso- e perisigmoidite fibrosa adhesiva. Laparotomia liberatrice. Guarigione.) O. Cignozzi.
- 144 Paradoxical Bulging of Interspaces During Inspiration. (Sui rigonfiamenti inspiratori paradossi delle spazi intercostali.) A. Signorelli.

Hospitalstidende, Copenhagen

November 23, LIII, No. 47, pp. 1297-1328

- 145 Abnormally Increased Respiration from Lack of Oxygen and Its Importance for the Organism. (Om Iltmangelpolypuoen.) C. Sonue.

November 30, No. 48, pp. 1329-1360

- 146 Chronic Subphrenic Abscess Presumably of Duodenal Origin. Videbeck. Commenced in No. 47.

December 14, No. 50, pp. 1393-1432

- 147 Intra-Ocular Pressure and Blood-Pressure in the Elderly. (Undersøgelser over det intraokulære Tryk og Blodtryk hos gamle Folk.) H. B. Christensen.

December 21, No. 51, pp. 1433-1480

- 148 *Duodenal Ulcer and Its Treatment. A. Blad. Commenced in No. 48.
- 149 *The Cutaneous Tuberculin and the Wassermann Reactions in 228 Scrofulous Children. R. Hertz and O. Thomsen.

December 28, No. 52, pp. 1481-1504

- 150 *Horseshoe Kidney. Symptomatology, Diagnosis and Treatment. (Hesteskonnyren.) T. Røvsing.

148. Duodenal Ulcer.—Blad gives the details of sixteen cases in which he operated on account of duodenal ulcer, and reviews 144 articles on duodenal ulcer and its surgical treatment. Medical treatment had been applied in all his cases once or more and had given apparently good results, but sooner or later the symptoms returned. His patients were thus all in a late stage of the disease. For twelve years Tuffier has been urging immediate operation as soon as the ulcer is diagnosed, but Blad does not advocate it until after medical treatment has been given a fair trial.

149. Cutaneous Tuberculin and Wassermann Reactions in Scrofulous Children.—The v. Pirquet test gave a positive reaction in 86 per cent. of the 228 children tested and the further course of the cases confirmed the absence of tuberculosis in a number of the cases with a negative response. The Wassermann reaction was positive in eight of the children; in four in this group it was quite slight and these children continued to improve without other measures than those against tuberculosis in general, the v. Pirquet test being positive also in them. The four other children with positive Wassermann reaction presented it in a lively form and mercurial treatment was instituted with the result that the children who had not been thriving before were cured of all disturbances in a short time. Hertz and Thomsen conclude from these experiences that both reactions are of great importance for the differential diagnosis of "scrofulous" affections.

150. Horseshoe Kidney.—Røvsing has operated in four cases of horseshoe kidney, but it was not diagnosed beforehand in two of the cases. The complaints of the patients were alike in all, referring to a sense of oppression and dragging down in the region below the stomach, and pains extending to the lumbar region or radiating upward. The discomfort and pain disappear when the patients recline or are at rest, but recur constantly during physical exercise and are especially pronounced if the patient bends over backward. This latter symptom was particularly noticeable in one of the patients, a young man who had to handle heavy lumber at his work. Whenever the spine is bent backward the horseshoe kidney is forced against the spine and not only is this painful but there is liable to be a nervous shock as was observed in one of his cases. The palpation findings confirm the diagnosis, sustained by the subsidence of all discomfort when the patients recline. Rest and refraining from physical overexertion are the main points in treatment, but when this is impossible he suggests operative separation of the kidney into the normal two organs. He performed this operation in his third case with complete success, the young man being relieved from all former disturbances and now having two apparently normally functioning kidneys. Røvsing thinks that he is the first to perform this operation and the gratifying results in his case commend it for wider adoption when the patients are

unable to spare themselves physical exertion. He operated by the transperitoneal route and commends this technic as the best; he entered the abdomen outside the colon and duodenum, fearing that the pressure of the kidney might have made the mesentery abnormally thick and tough in the center. He severed the isthmus by the same technic as for resection of the liver.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A TREATISE ON DIAGNOSTIC METHODS OF EXAMINATION. By Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with Additions, by Nathaniel Bowditch Potter, M.D., Assistant Professor of Clinical Medicine at Columbia University (College of Physicians and Surgeons), New York. Second Edition. Authorized Translation from the Fifth Revised and Enlarged German Edition. Cloth. Price, \$6.50 net. Pp. 1229, with 471 illustrations. Philadelphia: W. B. Saunders Co., 1911.

BISMUTH PASTE IN CHRONIC SUPPURATIONS. Its Diagnostic Importance and Therapeutic Value. By Emil G. Beck, M.D., Surgeon to the North Chicago Hospital, Chicago. With an Introduction by Carl Beck, M.D. And a Chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear, by Joseph C. Beck, M.D. Cloth. Price, \$2.50. Pp. 237, with 90 illustrations. St. Louis: C. V. Mosby Co., 1910.

OM THYMUSINVOLUTIONEN EFTER RÖNTGENBESTRÅLNING JÄMTE NÄGRE IAKTTAGELSER ÖFVER LEUKOLYSEN I ÖFRIGT HOS RÖNTGENBESTRÅLADE DJUR. Akademisk Afhandling. Medicinska Fakulteten i Uppsala För Vinnande Af Medicine Doktorsgrad. Af Hans Rudberg, Med. Kand. af Smålands Nation. Paper. Pp. 106, with illustrations. Uppsala: Almqvist & Wiksells Boktryckeri-A.-B., 1909.

PRIMER OF HYGIENE. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia, and Joseph S. Caldwell, Professor of Biology, George Peabody College for Teachers, Tennessee. Illustrated by Karl Hassmann and Hermann Meyer. Cloth. Price, 40 cents net. Pp. 184, with 113 illustrations. Yonkers-on-Hudson, N. Y.: World Book Co., 1910.

PRINCIPLES OF PUBLIC HEALTH. A Simple Text-Book on Hygiene Presenting the Principles Fundamental to the Conservation of Individual and Community Health. By Thomas D. Tuttle, M.D., Secretary and Executive Officer of the State Board of Health of Montana. Cloth. Price, 50 cents net. Yonkers-on-Hudson, N. Y.: World Book Co., 1910.

THE END OF DARWINISM. Not Change but Persistence is Characteristic of Life; Every Change is Essentially a Persistence; Only What Persists Can Change. An Essay by Alfred P. Schultz, M.D., Author of "Race or Mongrel." Paper. Price, 50 cents. Pp. 19. Monticello (Sullivan County), N. Y.: A. P. Schultz, 1911.

BIDRAG TILL DE CEREBRALA FÖRLÄMNINGARNAS SYMPTOMATOLOGI. Akademisk Afhandling. Medicinska Fakulteten i Uppsala För Vinnande Af Medicine Doktorsgrad. Af Gustaf Bergmark, Medicine Licentiat af Göteborgs Nation. Paper. Pp. 205, with illustrations. Uppsala: Almqvist & Wiksells Boktryckeri-A.-B., 1908.

DISEASES OF THE ANUS, RECTUM AND SIGMOID. For the Use of Students and General Practitioners. By Samuel T. Earle, M.D., Professor Emeritus of Diseases of the Rectum in the Baltimore Medical College. Cloth. Price, \$5 net. Pp. 476, with 152 illustrations. Philadelphia: J. B. Lippincott Co., 1911.

THE HISTORY OF MEDICINE. Philosophical and Critical, from Its Origin to the Twentieth Century. By David Allyn Gorton, M.D. In Two Volumes. Volumes I and II. Cloth. Price, \$6. Pp. 436 and 497, with 37 illustrations. New York: G. P. Putnam's Sons, 1910.

EDUCATION: HOW OLD THE NEW. By James J. Walsh, M.D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine. Cloth. Price, \$2 net. Pp. 459. New York: Fordham University Press, 1910.

PROCEEDINGS OF THE NORTH DAKOTA PHARMACEUTICAL ASSOCIATION. Twenty-Fifth Annual Meeting, held at Fargo, Aug. 9, 10, 11, 1910. Roll of Members, etc. Paper. Pp. 160. W. S. Parker, Secretary, Lisbon, N. Dak.

VAGINAL CELOTOMY. By S. Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Cloth. Price, \$5 net. Pp. 443, with 148 illustrations. Philadelphia: W. B. Saunders Co., 1911.

THE INFLUENCE OF STORAGE AND VARIOUS PRESERVATIVES ON THE DISSOLVED OXYGEN IN WATERS. By Dr. Arthur Lederer. Paper. Pp. 14. Sewage Disposal Investigations, the Sanitary District of Chicago, 1910.

THE PRESERVATION OF SEWAGE BY THE AID OF CHLOROFORM AND COLD STORAGE. Dr. Arthur Lederer and Harry B. Haddon. Paper. Pp. 16. Sewage Disposal Investigations, the Sanitary District of Chicago, 1910.

THE DAWN OF THE HEALTH AGE. By Benjamin Moore, D.Sc., M.R.C.S., L.R.C.P. Cloth. Price, \$1.40 net. Pp. 204. London: J. & A. Churchill (Philadelphia: P. Blakistoun's Son & Co.), 1911.

PRACTICAL PHYSIOLOGY. Edited by M. S. Pembrey. By Various Contributors. Third Edition. Cloth. Price, \$4 net. Pp. 480, with 255 illustrations. New York: Longmans, Green & Co., 1910.

THE CARE AND TRAINING OF CHILDREN. By Le Grand Kerr, M.D., Author of "Diseases of Children," etc. Cloth. Price, 75 cents net. Pp. 233. New York: Funk & Wagnalls Co., 1910.

REPORT OF THE MERCY HOSPITAL, PITTSBURG, PA. From May 31, 1908, to May 31, 1910. Paper. Pp. 154, with illustrations.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI. No. 5

CHICAGO, ILLINOIS

FEBRUARY 4, 1911

THE OPERATIVE TREATMENT OF CANCER OF THE BREAST *

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BOSTON

The only treatment of breast tumors which as yet gives any real hope of permanent cure is thorough removal. Operable cancer of the breast must not be subjected to any other method, because of the loss of precious time. I am obliged, at the beginning of my paper, to give the greatest emphasis to this opinion, because I have seen so many preventable disasters caused by this source of delay in resorting to the knife. And it is not at the hands of the inexperienced or of the empirics that I see these disasters, but in the hands of men experienced in the treatment of cancer, who have become convinced of the efficacy of non-operative methods and who cannot perceive the most glaring failures of their methods. The most pathetic instances of this kind of failure have been through months or years of *x-ray* treatment, during which the patients have gone from operability to glaring hopelessness.

Let non-operative means be used only in those cases which are by situation or extent hopeless. I say this in the strong belief that we are soon to discover an effective and permanent non-operative cure.

I realize fully my own deficiencies in trying to present before this body the operative part of the subject. I can plead only a large experience in breast tumors—an experience in which I have encountered many disasters as well as many successes. From the beginning, the worst of these disasters has been the result, first, of overconfidence in the diagnosis of benignancy, either on my part or on the part of the attending physician, by which overconfidence the most favorable moment for extirpation has been delayed or lost. I have therefore been strongly impressed by the importance of early diagnosis.

Another disaster has been the result of inadequate methods of operation. A third worthy of mention has been the result of a disregard of the contra-indications to operation, or the failure to detect them.

To consider adequately any one of these sources of failure—diagnosis, operative treatment, or indications—would exceed the limits of a single paper.

In confining my remarks to the operative treatment of breast cancer, I cannot but feel that the most important things to consider are timeliness and thoroughness of intervention. I therefore introduce the subject of operative treatment by the most important factor for its success—the early, invariable, and thorough extirpation of all breast tumors in which the expert diagnosis

of cancer is more than a possibility. At the cancer age a diagnosis of benignancy even by an expert surgeon does not always mean safety to the patient. Even in such favorable cases, there will be made too many disastrous errors, by which the most favorable moment for extirpation will be lost.

The one important consideration in the treatment of breast cancer is that the surgeon is not to be carried away by new methods in the hope of non-operative cure, lest the favorable moment for the successful mechanical extirpation of the disease be lost.

Though, as I have said, I fully believe that we are on the verge of discovering a means of treating cancer before which the disease will disappear absolutely and permanently, I feel that we have innumerable opportunities for using such methods on the hopeless and non-operable tumors. *All non-operative methods must be strictly confined to the inoperable cases.* In our hope and enthusiasm, or even in the face of some apparently extraordinary cures, we must not in the least relax our vigilance, or postpone operation a single day. We have all seen too many so-called “improvements” follow new methods to allow ourselves to be carried away by them; for have not our “improvements,” from the days of condurango to the present, ever proved ephemeral and disappointing? And has not the wish been father to the thought? I have seen the rise and fall of all these methods, and many have been and now are their victims. As in the end I have found nothing but failure and despair, so I look forward to more failures and renewed despair. The earlier and more favorable the tumors for surgical extirpation, the greater the failure and the more blame-worthy the disaster; and yet I am full of enthusiasm in the hope that the near future or the next method will solve the problem. One single total disappearance of undoubted breast cancer, under any form of non-operative treatment, will presage success, just as surely as a successful man-flight presaged aviation; but in the meantime, as I say, we must not in the least relax our vigilance.

DIAGNOSIS

The diagnosis of breast tumors on which the surgeon plans his operation may be so positive that he can safely extirpate the tumor by the broadest margin, and carry the axillary dissection to its farthest limitations. But can he always be thus positive? May he not unnecessarily remove a breast, and subject the patient to an unjustifiable danger through an error in diagnosis? May not certain cases of benign tumor resemble so closely cancer that the surgeon is mistaken?

One varies, perhaps, in the positiveness of one's opinion. One's diagnosis may be an absolute conviction. I have often said—and I here repeat—that the diagnosis of cancer by gross appearances, plus the history, made by

* Read in the Section on Surgery of the American Medical Association at the Sixty-First Annual Session, at St. Louis, June, 1910.

an experienced surgeon, is more worthy of credence in some cases than the microscopic examination alone. But it is certainly true that before operation the most experienced may be mistaken. One illustrative case will suffice:

A woman¹ of the cancer age (46), seen in December, 1907, had received a blow on the right breast. A black-and-blue spot followed, with a "little lump" which soon entirely disappeared. Later the bunch reappeared. It was tender and painful. The patient's physician in New York told her that the only safe thing was its removal—advice in which I strongly concurred. I did not think operation likely to cure permanently, for there was a large, hard, infiltrating tumor of the right breast, and my diagnosis was medullary cancer.

The following letter, written to the physician who was to operate, shows how serious a view I took of the case:

"Dear Doctor S.: I regret to say that in the case of your patient, Mrs. M., the diagnosis is medullary cancer of the breast. It belongs to the group of rapidly growing and excessively malignant forms of cancer. I can find nothing in the axilla, but the axilla is undoubtedly involved. I concur in your advice of immediate and extensive operation. I should remove the breast and all the skin over it and dissect the axilla up to the first rib. I should remove the pectoralis major and the pectoralis minor, and, if there are any glands above the clavicle, I should dissect the subclavian triangle. Even with the most thorough and extensive dissection that can be made in this case, it is one of those excessively malignant forms which will be followed by an almost immediate recurrence. It is your duty, however, to give this poor woman every chance."

The physician himself operated, removed by an extensive margin the breast and muscles, and dissected the axilla. He had with him a surgeon of experience, who, from the gross appearances of the tumor, agreed with the diagnosis of cancer. The specimen was to me clearly non-malignant. Dr. Whitney's diagnosis was fibroma. The growth was easily removable, and extirpation of the breast, with even its slight dangers and disabilities, entirely unjustifiable.

Although my part of this symposium is strictly the operative treatment, an important element in the operation itself is the demonstration of the diagnosis at the operating-table. The operation demands, before removal of the pectorals and dissection of the axilla, a confirmation of the diagnosis. And this is an essential step of the operation. Neglect to determine, by renewed examination, the nature of the growth, "tumor in hand," may result in an unjustifiable severity of operation. I do not mean necessarily section of the tumor, but I do mean examination between the fingers after the skin incision has been made, the muscles exposed, and the axilla opened. The following case illustrates the difficulty of telling, even after exposure of the tumor, its nature:

(The paragraphs descriptive of this case were written while the patient was being etherized and while my assistant was closing the wound, when the question of error in diagnosis and of the proper treatment under doubt, were most vivid.)

The patient is 47 years of age, and has a tumor in the breast which she noticed two months ago. The disease in this case is, I think, medullary cancer, but I am not positive. Shall I make sure by first incising the tumor, or shall I extirpate breast and dissect axilla on the strength of my diagnosis? I decide first against exploring the tumor *in situ*, because of the risk of auto-infection. I remove breast, pectoralis major, and axillary contents *en masse*. Section of the tumor shows a chronic mastitis, with a single large cyst in the center of the mass. Fluctuation before operation was obscured by the thickness and induration of the breast. There is perhaps a little suspicion of malignancy, but that question awaits the pathologist. The operation has been on the safe

side, both for recurrence and for malignancy, and, whatever the diagnosis, the patient ought hereafter to be well.

In this case the axillary lymph-nodes showed to the naked eye every sign of cancer, and I was quite convinced of the cancerous nature of the growth, before removing the whole. The pathologist's report was as follows:

Dear Dr. Richardson: The specimen from Mrs. — (T. 106—7), June 2, consisted of a large breast, diffusely fibrous, and contained a small cyst. There were lymph-nodes in the axilla which were normal in character.

Microscopic examination showed a diffuse growth of fibrous tissue in which were slightly proliferating gland acini with cystic dilated ducts.

DIAGNOSIS:—Fibrous and glandular hyperplasia with retention cysts.

W. F. WHITNEY.

The opinion which I venture to offer, and the rule which in doubtful diagnoses, especially at the cancer age, I would lay down, is that that operation should be performed which would be indicated were the diagnosis of cancer positive. It is better, I think, to follow this course than first to explore the tumor to make the demonstration of cancer clear. To perform an unnecessarily extensive operation is preferable to subjecting the patient to the dangers of auto-infection.

In this case, with the whole breast in my hands, I could get unmistakable fluctuation in the tumor; but, had I known the tumor to contain fluid, should I have been justified in assuming that the fluid was from a benign cyst? I should not, for it is not uncommon to find collections of fluid in connection with cancer, nor is it uncommon to find malignant degeneration of cysts.

I learned a good lesson a few years ago at a breast operation in Racine, Wisconsin. I found benign tumors of both breasts, and favored extirpation of the tumors alone. Dr. Zeit of Chicago was on hand with his freezing apparatus, and reported malignancy in what seemed to me non-malignant tissue. His diagnosis was "endothelioma in both breasts." With the approval of Dr. Dudley of Chicago, I removed both breasts, and the patient remains well to this day. Dr. Whitney, after a careful examination of both breasts made at his leisure, confirmed the bedside diagnosis of Dr. Zeit. Had I not followed the advice of Drs. Zeit and Dudley, I should have performed an inadequate operation.

In a few cases, reports of which I have already published, carcinoma has developed after the removal of cysts. The percentage, in the whole number of cysts, is extremely small, but it is not a negligible number. The only rule to lay down that would cover such cases would be based on the procedure at Racine—removal of the cyst by a margin sufficiently broad for the immediate microscopic demonstration of the breast tissues. In this way error in diagnosis would be avoided, and immediate radical operation could be performed.

But this question is perhaps a little beyond the scope of my contribution to this symposium. Suffice it to say that, when in doubt, the safe side for the patient demands the more rather than the less extensive operation.

A reasonable accuracy in the diagnosis of cancer of the breast is implied by the opinion of an experienced surgeon that the tumor is cancer. In a word, however positive one's own opinion may be as to benignancy, a single experienced contrary opinion is enough to indicate exploration.

The more I consider the question of reasonable accuracy in the diagnosis of breast tumors, and the larger

1. Office Records lxx, 161.

my experience becomes, the more I am inclined to advise operations on all breast tumors, whether the diagnosis points toward malignancy or not, provided the patient is of the cancer age.

A diagnosis of benignancy is positive enough to contra-indicate operation if the patient is not of the cancer age, and if the history and signs favor that benignancy. But if the patient is of the cancer age, a reasonably certain diagnosis of benignancy is not strong enough to justify the postponement of operation, unless there are contra-indications to operation other than in the tumor itself. There is perhaps one exception to this rule: when a second tumor appears precisely like one that by this rule has been removed, and has proved benign—a cyst, for example. I have several such cases under observation, in which I am ever anxious lest I overlook cancer. But even when, at a former operation, a similar tumor has been excised, does not the occurrence of any tumor, no matter if it is benign, show a tendency to tumor growth which the next time perhaps will show malignancy? My own opinion and observation go to show that cancer is no more likely to form in a breast subject to benign tumors than in one not subject to them. But as the cancer age approaches, does not human fallibility offer a reasonable doubt of *any* diagnosis? I believe that at the cancer age it does offer a reasonable doubt, and one that justifies if it does not demand operation. Indeed, why is it not common sense, in view of human fallibility and the fact that we are formulating rules for the guidance of men of widely varying experience and skill in diagnosis, to group together all breast tumors under the heading of uncertainties, of things beyond human skill and subject to all the frailties of human prognosis, and to extirpate them all?

I must admit that I have too little faith in my own opinion—or that of any one else—to let one dear to me run the awful risk of error, when certainty is so easy and permanent cure so sure.

I use the words “without reasonable doubt” in connection with the diagnosis of benignancy to express in the strongest way a human and therefore fallible opinion; and I use these words because of their well-known application in law. The law, in trying to express the justification of a jury’s verdict, on which punishment is based, requires on the evidence a unanimous opinion, “beyond reasonable doubt.” In surgery a similar freedom from reasonable doubt should prevail when on the opinion may depend health, happiness, and even life itself. And that doubt must be absent in those cases in which, if a necessary operation is deferred or omitted on the strength of it, disaster will follow.

I should not apply this rule to the diagnosis of malignancy. Were only those breast tumors excised in the case of which there is no reasonable doubt of malignancy, much harm would follow. The slightest suspicion of malignancy should demand operation, especially at the cancer age. If there is room for the slightest suspicion of malignancy in the tumor, then it cannot be pronounced benign beyond a reasonable doubt. On the other hand, unless the diagnosis of benignancy is overwhelming, there is no justification in the palliation of benign tumors.

In trying to present my views as to the operative treatment of breast cancer, I find great difficulty in expressing in words my thoughts. I could show this audience, individually, on the patient, what I am trying to say; and I could, I think, show them the tumor which to my mind, being benign beyond a doubt, I should dis-

sect from the breast, or leave alone, and the tumor which without exploration I should remove with the breast, axillary contents and all. But as clearly as I can express my opinion by words whose significance we all understand, it is this: We should remove, breast and all, those tumors in the diagnosis of which there is enough uncertainty to call that uncertainty a reasonable doubt. We should remove from the breast or explore those tumors in the benignancy of which we have enough indecision to call that indecision a reasonable doubt. We should leave untouched only those growths in which we are so positive that we would let them go in the case of our nearest and dearest.

In all cases of great importance a consultation is advisable; but, whatever the number of surgeons and whatever their experience, a single dissenting voice as to the diagnosis should constitute a reasonable doubt, whether as to malignancy or non-malignancy, and the verdict of operating or not should be decided accordingly. On him who decides against extirpation in the presence of such a doubt lies a heavier responsibility than the surgeon, in the present days of safe operating, should be called on to bear. The verdict of a discussion like this, of a body of distinguished surgeons like this, should help him to bear that responsibility.

What constitutes a reasonable doubt of benignancy? The “beyond reasonable doubt of benignancy” is the complement of the slight doubt as to malignancy. When a breast tumor is benign beyond reasonable doubt, there is not left evidence enough of malignancy for the most radical to base indications of operation on. If any man of experience, examining a breast tumor in a case in which I had the responsibility of decision, should say, “I am by no means sure of this being benign; I am afraid it is cancer,” I should call that enough doubt of benignancy to justify operation on that tumor. If, for example, everything favors a benign growth but the feel of the tumor, I should say that the slight doubt founded on the feel demanded operation. If the time of life were favorable for cancer, pain, perceptible axillary lymph-nodes, a marked family history of cancer, short duration, rapid growth, adherent and dimpling skin, retracted nipple—any one of these favoring cancer, the other evidence favoring benignancy—would lead me to operate. Of all the signs of cancer, the one that alone indicates operation most strongly is that which fails, through the *tactus eruditus*, to satisfy the surgeon of benignancy, or to remove his last fear of cancer.

In the diagnosis of benignancy, therefore, reasonable doubt is found in any sign or symptom favoring in the least cancer. The evidence of all kinds—the history, family and personal, and the results of physical examination—must be without the least flaw.

But even then, in view of the slight risk of operation, does not the absolute safety of the patient demand operation—after all has been said and done to justify or to postpone operation? Is there any valid reason against the operative investigation, at least, of breast and axilla, except in the clearly hopeless cases?

In trying to lay down rules for guidance in the surgery of breast tumors, am I not trying to sustain a position which, after all, is beyond human power, and therefore subject to human fallibility? Am I not substituting for certainty and safety, uncertainty and danger, and would not a rule of universal operation prevent those disasters, happily infrequent, which cannot but blot the record of even the most experienced and skilful surgeon who endeavors to discriminate between the benign and the malignant?

The only absolute certainty, then, is removal of the tumor and demonstration of its nature. By this means certainty will be established. But the reasonable doubt that I am speaking of is so slight a doubt that the dangers of acting on it are less than even the slight risks and disadvantages of operation.

I would say, finally, that the broadest and firmest foundation on which to base a reasonable doubt of its nature is that of experience. With men of small experience, the diagnosis is, from the limitations of their experience, open to a much greater doubt than would be called reasonable.

I have learned to beware of the swelling in the breast that is only "glandular"; of the "obstructed milk-ducts"; of the "fatty" tumor, the tuberculous, or even the sarcoma. Such diagnoses, except when made by men of great experience, raise always in my mind the presumption of malignancy. Indeed, I do not know how I can better close this part of my paper than by saying that in all tumors of the breast the presumption should be that they are malignant until they are proved benign—guilty until proved innocent—and that the treatment should be that appropriate to the disease which, unoperated on, is the more dangerous to health and comfort.

OPERATION

The first consideration in the radical operation for breast cancer is a reasonable thoroughness of extirpation. To this all other considerations should be subordinate. The main thing in the operation is to get all of the disease out. The more extensive the operation, the better the result, provided the dissection is extended in the same direction as the disease, and provided the patient lives; but there should be reason in all things. The direction in which the dissection should be far-reaching is along the line of the lymphatics, along the line of the great vessels. This line of metastasis after breast operations accounts for by far the greater number of failures; and yet in many cases the recurrence is in the immediate anatomic vicinity of the tumor-seat in the breast. These local recurrences, without recurrences in the lungs or above the clavicles, suggest the inadequacy of local extirpations. It is probably true that the local recurrences are blamed for the fatal results, because they occur first and kill before internal late metastases are detected. I am not, however, advocating any lessening of the present radical operative measures: I am advocating rather, if it were possible, increasing in breadth and depth the dissection. I recommend a reasonable thoroughness of dissection, and one that varies according to the extent and situation of the disease.

I admit that there would be less likelihood of recurrence after breast operations that included a girdle amputation of the upper extremity; but there would be, on the whole, less good to the greater number than after common-sense limited dissection. A reasonable thoroughness requires the removal of the tumor by a broad margin, and of its route of extension by a broad margin. The tumor itself may be removed by a satisfactory margin, when it is small, by including the breast and everything possible in close relation with it. This is accomplished by taking the whole breast and the skin about its margin; the pectoralis major and the subjacent tissues down to the thoracic wall; the axillary contents as far back as the latissimus dorsi, as high up as the first rib, and as deep as the posterior border of the scapula. The upper axillary dissection requires the removal of the pectoralis minor.

AUTHOR'S TECHNIC

The method that I use is an elaboration of one that I first employed in the early eighties, the principle of which is a dissection of the breast and axilla with knife and forceps, made as thorough and as clean as a dissecting-room preparation. Up to that time the only axillary dissections had been made with the fingers, by means of which the glands affected enough to be perceptible to the fingers were rooted out, as it were. Small glands just beginning to be infected were not then perceptible, and the method, though better than no axillary dissection at all (for there were not a few complete and permanent recoveries in demonstrated cancer) was of course inadequate.

From that time I have gradually added to the extent of the tissues removed, and now include the pectorals and make a very thorough and painstaking dissection of the axilla. I never cut through the clavicles, and seldom subject to any but palliative operations the patients with extension of disease above the clavicle. The removal of the skin in my cases is, I think, as extensive as that in any one's; but I contrive to close the wound effectively with skin. I wish to make here my acknowledgments to Halsted for the suggestion and example of thorough and wide removal of the disease. Except in a few minor points, there is nothing original in the method that I use; but in the elaboration of this method I have followed a definitely progressive line, taking one suggestion here and another there, and perhaps adding a detail of my own. The value of my own contributions to the evolution of this operation will, I dare say, be regarded as trivial, but I have learned to rely on them enough to repeat and now and then to elaborate them.

The mortality for operation is practically nothing. Deaths from shock are unknown in my statistics. On the average, the time from the first incision to the completion of the dressing is one hour. This method, which I have gradually elaborated in many hundred operations for breast cancer, seems to me reasonably thorough. In but few cases has it been necessary to graft the resulting wound. When the breast and the skin over it are so extensively infiltrated that the skin beyond the breast margin is stiff with disease, the patient is, in my judgment, beyond a rational hope of cure, and should be operated on only as a palliative measure preliminary to non-operative treatment.

The first incision goes from the insertion of the pectoralis major to the ensiform cartilage, passing to the sternal side of the breast and including as much of the skin outside the breast margin as is deemed advisable. The sternal skin-flap is next dissected from the subjacent fatty tissues, upward toward the clavicle. When the margin of the other breast is reached, that breast is dissected from the pectoralis major a sufficient distance to permit considerable displacement toward the affected side. If necessary, the other breast is dissected wholly free from the pectoralis major.

The second incision is made from the beginning to the end of the first, but passing well to the axillary side of the breast. The skin-flap is dissected back from subjacent tissues till it is well beyond the posterior fold of the axilla, and exposes a sufficient surface—say three or four inches—of the latissimus dorsi muscle.

The next step is the separation of the clavicular from the sternal portion of the pectoralis major. With the fingers of the left hand lifting the belly of the muscle, its sternal and costal attachments are cut close to the bone. The skin between the breast and epigastrium is

then dissected, with its underlying fat, down to the upper surface of the rectus and obliquus externus muscles. Sometimes the fascia covering these muscles is also taken with the skin. The mass containing the tumor now sags down and away from the axilla, and the opportunity for a careful and clean dissection is given. In most cases—but not always—I next remove entirely the pectoralis minor. To insure a safe and rapid dissection along the great vessels, I next find and expose the vein. For satisfactory dissection the assistants must be careful to do all sponging with gauze that has not been bloodied. By snapping all arteries and veins with two pairs of forceps and cutting between; by snapping all vessels at once as they begin to bleed and wiping with fresh gauze, the dissection may be kept so bloodless that there will be no chance for error. I begin usually at the first rib, and, with the knife, and without fingering, pulling, or hauling, make a complete axillary clearing from the first rib to the anterior edge of the latissimus dorsi, from its insertion to and along the posterior border of the wound; from the depths of the axillary space to the digitations of the serratus magnus. Nothing is left except the main trunks of the axillary vein and artery and the important motor nerves.

As soon as an absolutely dry wound is secured, I close without difficulty the whole in a straight line from the humerus to the ensiform cartilage.

The time of actual dissection is about twenty minutes; of the whole operation, from ether to the end, sixty minutes.

The speed or slowness of an operation seems to me to affect the amount of shock. As far as I can judge from what I have myself seen, a very much prolonged operation adds materially to the dangers, both by shock and by liability to infection. I have not attained that perfection in technique, or confidence in human infallibility, that would make me unwilling to give some consideration to the question of infecting clean wounds. And as I believe that the occasional wound infection is due primarily to exposure of that wound to unseen, unknown, and therefore humanly unpreventable causes, I like to limit that exposure to as little time as practice in dissecting and familiarity with anatomy will make possible. And yet I dare say that I am wrong, and that, as Halsted says, the severity of the shock depends entirely on the amount of blood lost. A rapid and extensive dissection sometimes has seemed to produce more or less impression on the patient, shown chiefly by slow and feeble pulse and by a deathly look to the face; but as I say, the patients, with practically no exception, recover from this shock and from the operation.

My mortality in fifteen hundred breast operations, of all kinds, is but four; and of those deaths, wound infection accounted for two. No patient has died from the immediate effects of the operation, unless suppression of urine be deemed the result of an extensive dissection.

I prefer this method of removing the breast to all others that I have seen. I do not say that it is any better than any other—perhaps it is not so good as many; but I have developed it in my own way and am familiar with its smallest details.

From the skin cut to the thoracic wall the amount of tissue removed increases in breadth. I have seen operations in which the breadth of tissue removed diminishes as the operation proceeds: there will be a broad skin removal, and a narrower portion of muscle and fat, as the thoracic wall is reached. The only way in which the mass removed can be made more extensive is by increasing the amount of skin removed, and by

carrying the dissection above the clavicle. Nothing is easier than to make this more extensive dissection when it is deemed advisable. I do not attempt it often, because the operation at best seems but a palliative one; and to subject a patient to dissections which are sure to be ineffective as to permanency seems to me unjustifiable. Let the broad and deep methods be limited to cases in which the disease is limited and in which the dissection extends far beyond the perceptible part of the tumor.

It will ever be a disputed question as to what constitutes a reasonably thorough operation for breast cancer. My opinion is that an operation, to be reasonably thorough, does not demand the most extensive possible removal of tissues, or even of the skin alone, for the most extensive possible means a girdle amputation. Nor does it often mean so extensive a skin removal that grafting is necessary. Nor does it require resection of the chest wall. Perhaps one gets unduly discouraged in operations for breast cancer; perhaps, indeed, a large percentage of recurrences is *prima facie* evidence of inadequate tissue removal. Whatever the reason, two recurrences in three cases—or the very smallest percentage of recurrences ever published—are but too discouraging.

CONTRA-INDICATIONS

I regard as contra-indications to extensive operations in the hope of permanent cure the presence of metastases above the clavicle, of beginning skin infiltrations (*carcinome en cuirasse*), of beginning chest wall growths. In a word, in extensive disease even the most extensive operation is unjustifiable; in limited disease, extensive operation is unnecessary. Yet in some cases of disease so extensive as to be almost forbidding I have been surprised by long immunity from recurrence; and in some of limited disease, by its speedy return after a radical operation. In either case let the extirpation be reasonably thorough, but not beyond common sense. There remain a few cases on the border-line of the hopeless in which the surgeon may or may not select the most mutilating operation, but in which, if his experience is like mine, he will perform the operation with little if any hope.

PROGNOSIS

The difficulty of establishing the prognosis as to recurrence after radical operation lies in our failure to establish definitely the extent and virulence of the case—in the impossibility of making out the type as it were, of the disease—the standard by which all results must be measured.

Nothing is more evident to me than that, in the hands of good surgeons, the results of operative treatment of similar lesions throughout the world are about the same. There is but a slight ratio for or against this or that operation, this or that clinic. Were all surgeons to operate on patients with the same class of some certain special lesion, the results in the long run would be about the same.

In breast cancer it seems to me by no means difficult to separate the cases in which there is no reasonable expectation of cure from those in which the expectation is good. Each operator, as his experience widens, can group his cases roughly into the hopeful and the hopeless, with an intermediate class difficult of grouping. And there should be, it seems to me, such a rough grouping, according to the prognosis of good, bad, or uncertain. Not that the prognosis after operation is ever anything but uncertain, but some cases are more uncertain than others.

When we are talking of prognosis as to recurrence, we are for the most part wasting our time and that of our audience—are we not?—if one of us includes in his statistics cases of conspicuously bad prognosis and another does not; if one of us operates on every tumor that permits an attempt at extirpation, whereas another excludes all that do not permit removal of the whole by a wide margin; if one publishes the results of a selected group of operations, whereas another publishes every case, including the doubtful or even those proved by operation hopeless.

When every case is published—whatever the findings of the operation—the prognosis will then depend on what the operator deems adequate indication for operation. I am very sure that what I regard as an adequate indication, another will regard as inadequate, and *vice versa*.

My opinion is that, in trying to establish the prognosis, only those cases should be included in the statistics which have about the same attributes—and that the surgeon himself is the sole judge. It behooves us, therefore, in trying to tell the prognosis, to be as rigidly unbiased as to the facts as it is possible for us to be. The only really reliable way, considering the impossibility of excluding bias from our own observations, would be to have the patient, the tumor, the operation, the microscope, under the control of an unprejudiced commission.

But perhaps, roughly, we can get a fair idea of the prognosis by the accumulation of large series of results, including all operators of large experience. The first thing that we wish to know is the average prognosis; the second, why one operator has a large percentage of permanent recoveries and another a small; and especially if that difference depends on methods of operating, and if it does so depend, what ratio to the whole the operative dependence is.

As it is, grouping together all cases, a large number of them show the surgeon, long before he completes his operation, that they will fail of permanent cure.

I am, I must admit, so little impressed by the value of statistics that I am not much given to collecting my own, especially in cases of cancer, to establish my ratio of permanent cures. In some fields they are, I dare say, too good to be accepted; in some, too bad to be questioned. In cancer of the breast they are about the same, I think, as those of most operators, and for the same reasons.

If in my immediate mortality I include, as I have here, every breast case I ever operated on, there will be a reliable percentage of recoveries and deaths. Unless I so include every case operated on in the *hope* of radical cure—whatever the hopefulness or hopelessness of the operative demonstration—I am open to the criticism of selecting my cases.

But some of my best results have followed the extirpation of the disease in somewhat discouraging cases.

The statistics—or my statistics (which, however, I have not as yet collected)—of cancer operations may be regarded as an accurate presentation of results after radical operation on cancer that seemed at least to present enough hope to justify that operation. Farther than that, statistics cannot go; and in estimating this, their real value, one must be able to take into account the operator's personal equation, as it were, in judging the operability and prognosis of his cases.

What do we mean by a permanent cure? For purposes of comparison, I accept the three-year limit, without sign or symptom of recurrence anywhere in the body.

But has such a brief period of apparent immunity any real significance? And when that period of time has elapsed can we feel sure that there will be no further trouble? I regret to say that the successful passage of three years means no assurance that the original disease will not later—perhaps many years later—show itself. Not five years, or ten, of perfect health means absolute cure; for have I not seen recurrences in the spine later than that?

For these discouraging views I can only plead the truth. Fortunately, the three-year limit indicates the likelihood that more years will pass without perceptible recurrence. So, as time passes, the dread of recurrence is displaced by an ever-increasing confidence in permanent cure. For its encouraging effect on the patient, I am grateful to this arbitrary, if misleading, period of immunity; for its value in establishing a standard by which one's own results may be measured, I make use of it; but, as far as sure indications of permanent cure go, I have long since abandoned it.

Now what constitutes a reasonable expectation of radical cure in operations for breast cancer—a reasonable hope that the given case will be the one of three or four to be permanently cured?

It is perhaps easier to pick out the cases in which there will surely be a recurrence.

In all cases there is the possibility of remote and internal metastases that makes the outlook discouraging. I regard the slowly growing tumor, with but few perceptible glands in the axilla—and those small—as the most favorable form of the disease, especially after middle life. Rapidity of growth, or the slightest sign of infiltration or of edema in the breast, makes recurrence after any operation for cancer of the breast almost certain. A peculiar thickening of the skin over the breast, gradually shading off at the periphery, is a grave sign.

A breast that is solid with the disease and its edema, with the skin over it stiffened as far as the margin, whatever the condition of the axilla, makes the case practically hopeless. When the disease has burst through the skin, as it were, and appears as a discolored mass amid a surrounding of normal skin, the prognosis is not necessarily bad. It is the infiltration in all directions from the central focus that makes unreasonable the expectation of radical cure.

Close attachment of the breast or of the tumor to structures that cannot be removed, of course means hopelessness. A tumor so close to the periosteum of the rib that it can be separated only by peeling it off—periosteum and all—with a bone scraper; or so close to the intercostal muscles that they, too, must come with it, is beyond the reasonable hope of permanent cure. A tumor that is so closely attached to or grown into the thoracic wall that resection of the ribs is necessary, is beyond the hope of cure, and should not be removed in that hope alone.

The same word "infiltration," as applied to the axillary contents, expresses, I think, hopelessness of radical cure. I, for one, never dissect the glands from veins, or other structures, with much hope, unless they are separated by loose connective tissue. When they are separable only by a sort of cleavage from the vein, from the chest wall, from the fascia, hope of permanent success must be abandoned.

Enlarged glands above the clavicle are always, in my belief, so significant of an already existing internal metastasis that I do not operate in such cases with much hope of permanent cure. For other reasons I remove these supraclavicular glands.

The only cases of breast cancer that can be reasonably included in the statistics for the cure of the disease by operation, are those in which the tumor is freely movable, and in which there is no infiltration or close attachment to tissues that cannot themselves be removed. There must be a margin of clear, uninfiltated, healthy tissue—in a word, the tumors have been, as far as we can tell, completely removed. Furthermore, the glands affected must not reach above the first rib, and there must not be the least sign of internal metastasis.

Only the most favorable cases, then, offer a reasonable expectation of radical cure.

Is there, in those cases which present one or more of the above unfavorable aspects, any hope of radical cure? If so, how much hope must there be to justify a radical operation?

Before operation many of these unfavorable things will not be apparent. In most cases hopelessness is a matter of operative demonstration, for, of course, we do not attempt radical operation on tumors that are clearly hopeless. If any of these unfavorable things can be detected before operation, almost the only justification of an operation for radical cure is human fallibility—the chance that the case may not be as bad as it seems. There is one other justification, however, and that lies in the experience, not uncommon with me, of an occasional extraordinary success when the outlook, such as I have described, has been bad. This is frequent enough to offer a distinct hope, and to justify operation in the doubtful case.

In any case, to take away pain; to relieve discomfort; to keep up the patient's hope; to permit a better application of non-operative measures; to take the blessed chance of mistaken prognosis and human fallibility—to accomplish any one of these things seems an ample justification in breast cancer for so safe an operation.

ABSTRACT OF DISCUSSION

DR. WILLY MEYER, New York: Diagnosis generally is easy because we see these patients too late. Sanguinolent discharge from the nipple, even in the absence of tumor formation, should lead us to observe the patient most carefully. If infiltration within the breast is found, we must think of a beginning cancer and act accordingly. In suspicious cases, I prefer the radical operation to an exploratory incision. In the last five or six years there have appeared in journals, text-books and monographs so many conflicting statements regarding the radical operation for cancer of the breast, that I think that it is but timely to lay down a few historical facts regarding this operation. The radical operation for cancer of the breast is an American operation. It has been worked out and the description published on American soil. There are two distinct advances in this operation. The one works from the chest toward the shoulder, and the other from the shoulder toward the chest. There is no intermediate operation. The one from the chest toward the shoulder, in which the trunks of the feeding blood-vessels and the tendons of the pectoral muscles, with the axillary lymphatics and glands are attended to later on in the course of the operation, has been worked out by W. S. Halsted, of Baltimore. The description was published in the *Annals of Surgery*, October, 1894. The operation in which the surgeon works from the shoulder toward the chest, in which the tendons of the pectoral muscles are primarily met and cut, and the blood-vessels leading toward and from the breast are primarily clamped at their base, and divided, and the axillary fat with glands removed toward the sternum, was worked out in New York and the description published in the *Medical Record*, December, 1894. It was but natural that surgeons should follow the leadership of Halsted, and I am sure that I would have done the same thing had I not seen independently at the operating table the advantages of working in the oppo-

site direction, making the operation a more typical and anatomic one, saving time and blood.

The publications that have appeared in the last five or six years point to the fact that surgeons are gradually coming to do the operation from the shoulder toward the chest. Warren of Boston and Jackson of Kansas City do not favor grafting toward the end of the operation and have therefore modified the operation by making dermatoplasty. In every other essential point the Boston and Kansas City operations are identical with that described in New York sixteen years ago. Rodman, of Philadelphia, also lately has done the operation from the shoulder toward the chest. He is afraid of continuing the incision onto the arm, fearing cicatricial band formation which might interfere later with the function of the arm and therefore he makes his skin incision transversely near the axilla. I have not seen such an occurrence in the ordinary case. Of European surgeons only Rotter, of Berlin, needs consideration. More than one year after the description of the New York operation was published he brought out an operation similar to it. Kocher, of Bern, has never devised an operation of his own for cancer of the breast.

With reference to final results: I still believe that, first, the virulence of the infection in a given case determines the fate of the patient; second, the time of the operation, and third, the situation of the tumor. With the radical operations in the hands of all surgeons, no matter in which direction we advance in operating, between 40 and 50 per cent. of the patients operated on pass the three-year mark; between 30 and 40 per cent. pass the five-year mark, and yet these patients are not always cured. Many have seen the trouble recurring after eight or ten years, and longer. Further improvement in our statistics will come when operations are done early, and when the cause of carcinoma has been found.

DR. PARKER SYMS, New York: We have learned much about cancer of the breast during the epoch which began in 1894, and can now take a hopeful view of the subject. Rodman has stated that it is possible to cure 80 per cent. of the patients with the ideal application of our present methods. This would be dependent on early diagnosis, and an early, radical and properly performed operation. There is, of course, much difficulty in making an early diagnosis in certain doubtful cases; but when we bear in mind the fact that between 80 and 90 per cent. of all breast tumors are cancers, and when we remember that there is a precancerous stage, we may expect to get much better results. Between 10 and 20 per cent. of tumors, though benign at one time, are precursors of cancer and must be regarded with suspicion. Every tumor of the breast should be removed. If a reasonable suspicion exists as to its malignancy, we should perform the most radical operation.

There is one early sign of cancer of the breast, which precedes retraction of the nipple, and which I have never seen mentioned in print. In a large proportion of cancers the nipple of the affected breast is on a higher level than the nipple of the healthy breast, owing to a shortening of the trabeculae. In a benign tumor the nipple of the affected breast will be lower than that of the healthy breast as a result of simple gravitation. I am glad of this opportunity to supplement what Dr. Willy Meyer said because modesty prevented him from saying what he should. By a coincidence the work of Meyer and Halsted appeared in the year 1894, and it was not till then that we attained satisfactory results in our treatment of cancer of the breast. Prior to that time I had an experience of ten years in the New York Cancer Hospital and in my own experience, as well as in that of my colleagues, I am sorry to say that it was almost unknown to cure a cancer of the breast. We all know what change there has been in our results since these admirable operations were given us. The operation of Meyer is one that I have always favored. I regard it as one of the most important operations in surgery. It is such a beautiful, classic, anatomic removal of all the affected parts, and, if properly done, it is a safe operation requiring but little time to perform. Although it is one of the largest operations we do in the domain of surgery, it is quite possible to shock the patient so little that she may be out of bed in from twenty-four to forty-eight hours. Meyer's operation has, as a particular advantage, the working from the shoulder to the chest,

against the direction of the flow of the lymph and venous channels, so that we are working toward the tumor and not from it, in that way very materially diminishing the chance of a recurrence by dissemination. There have been many modifications of the Meyer and Halsted methods. Of all incisions devised, those of Jackson are the most ingenious. They should certainly be employed whenever the tumor is not too high so that the quadrilateral flap may be taken from a part well above the growth. The obliteration of the axillary fossa is important. The outer flap should be brought tightly against the chest-wall, so that it will heal there by primary union. The method of dressing deserves special attention. The flap should be held snugly to the chest-wall by means of flat gauze pads, firmly secured with adhesive plaster. The arm should not be included in the dressing, but should be left perfectly free; the patient should be able to assume the "statue of liberty" attitude. If these details are carefully attended to there will never be limitation of motion.

DR. HERMAN TUHOLSKE, St. Louis: I have for the past fifteen years removed all tumors of the breast, whenever I could persuade the patient to let me do it. I have done that in many cases in which I was positive that the tumor was not malignant. These tumors should not remain in the breast, because we never know when they will become malignant. A frozen section was always made in those cases in which I was not quite sure that the tumor was not malignant. The reason for using the microscope is not to assist in deciding on removal of the tumor, but to determine whether radical operation or the usual elliptical incision and removal of the mass is called for. I believe that a tumor, small and round, a fibroma, may be removed safely without amputating the breast; but my experience has taught me that in the majority of cases a tumor occupying much space will in time necessitate the sacrifice of the whole breast. The eye and the hand will always decide the malignancy of the tumor. The patient should always be examined in the horizontal position. It is only then that the hand, moving the breast over the thorax, will discern every little inequality and discover nodules and whether they are hard or soft. In that way and with a careful history you can make a fairly correct diagnosis, and if the tumor is malignant the most radical operation should be performed. My plan has always been to go from the shoulder into the axilla, exposing the large vascular bundle and emptying the axilla of its contents as far as the posterior border of the scapula. I make the cut forward, passing down along the sternum so as to cut the upper part of the external oblique fascia. There something to be removed might be encountered. Then, when the skin is undermined extensively, it will do away with tension of sutures or with the necessity of skin grafting. In all these radical operations not only the pectoralis major but the pectoralis minor should be removed; the latter, because it facilitates the operation greatly.

DR. MILES F. PORTER, Fort Wayne, Ind.: After all known diagnostic skill has been exercised, what is there left? Uncertainty as to the final results. That means that all tumors of the breast should be removed. Doubt can be dispelled by microscopic examination made by an expert only, and that should be done in all cases of tumor of the breast. It has been my fortune or misfortune to encounter four cases of breast trouble in none of which was there any tumor to be discovered on close examination, and in two cases I was assisted in the examination by men who are recognized as being among the best men in the country. In two cases we had to deal with a malignant condition. In two cases the condition was benign. I would call attention, therefore, to the possibility of the existence of carcinoma of the breast without tumor formation. Two of these cases occurred in women at or after the menopause; two occurred in younger women. One of these had a carcinoma, and one of the older women had a non-malignant trouble. The occasion for looking at the breast in three of the cases was a sanguineous discharge from the nipple, without any tumor whatsoever. In the fourth case there was retraction of the nipple with eczema. I am firmly convinced that surgical removal of tumors before diagnosis is possible can cure more individuals and add more to human life and human usefulness than can any other measure. The

surgeon should remove the tumor and make the diagnosis from the specimen.

DR. WILLIAM L. RODMAN, Philadelphia: I want to emphasize the last statement Dr. Porter made. If better results are to come at all they must come from earlier diagnoses. It must be admitted by everybody that operative measures have been carried to the extreme limit. We must make earlier diagnoses if we are to get better results. I understood Dr. Porter to say that this can be done only by making frozen sections at the time of operation. Macroscopic appearances are valuable, and experienced men are usually able to hit the nail on the head, particularly those who work in laboratories; but it is simply impossible, and beyond the ken of any surgeon, no matter how experienced he may be, or how sharp in acumen, to diagnosticate a case of abnormal involution which is just changing into a condition of malignancy. And yet this is a very common condition. At least 10 per cent., perhaps 25, of such cases end in malignancy. Therefore the only safe thing to do is to employ frozen sections in all cases of doubt. There is no danger in such a practice if a hot iron is used at the time, even if the case is cancerous. It has been stated that it is not absolutely certain. Of course it is not. Dr. Porter said yesterday that the x-ray was the best means of diagnosing stone in the kidney, and yet he and others admit that occasionally it will fail to detect the stone. We should use all and certainly the best means at our command, at the same time admitting that none is absolutely infallible.

DR. MAURICE H. RICHARDSON, Boston: I believe in the invariable extirpation of a tumor which is a cancer; yet we are not yet so proficient in our diagnosis as to be able to tell always when a tumor is a cancer. In the case of a young girl I do not believe that there is any danger in leaving a small fibroma in the breast, provided that we can see the patient often enough. In performing this operation, I employ a method which has proved entirely satisfactory to me. It is an operation by which the breast wound is closed. I make the Warren incision and the old-fashioned elliptical incision, starting in high up, going beyond the margin on one side and lower on the other down to the ensiform cartilage. That takes in all of the skin of the breast to the distal and to the proximal side. The next step in the operation is to undermine well over to the other side and back to the border of the latissimus dorsi and down to the margin of the obliquus externus. The pectoralis muscles are then removed. There is nothing original about the operation, as I have only followed the lead of others, but I like to do the operation in this way. I do not know that it makes any difference at which end you begin, except for the reasonable argument that you work away from the current of the blood and lymph instead of toward it.

DISTURBANCES OF LACTATION *

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If an apology were necessary for the presentation of this subject I would merely refer to the vast amount of clinical and experimental work and the great number of able papers recording observations and deductions along the line of substitute feeding.

During the past two decades medical literature has teemed with contributions on the subject of artificial feeding of infants, and the world is informed of the awakening of the profession to the necessity for a more exact knowledge of infants' dietetics. That there is good reason for this activity is evident in the high rate of infant mortality from dietetic disorders.

Research, observation and clinical evidence beget research, observation and clinical evidence. Ideas and

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

theories find champions, patents are secured for artificial foods and methods of feeding, the mercenary spirit is aroused, and the money power enlisted, chemists, clinicians and practitioners enroll under the different banners and the merry war is on.

Just now a lull in the conflict allows us to look over the field and observe that the leaders of the "exact percentage feeding" idea have gained signal points of vantage in the population centers while their opponents are sullenly withdrawing to the woods with the evident intention of continuing the struggle in the rural districts. Each faction claims a victory and statistical bulletins announce the delivery of the human infant from nutritional disorders.

The observer can hardly refrain from indulging the conjecture that, if the originator of the plan of genesis could have secured for Rotch or Beidert or Lehman or Professor Gaertner access to the ear of the First Great Cause, Grandmother Eve's pectoral function might have been arranged more in conformity with modern laboratory ideas.

"What!" exclaims Mother Partington; "is it true they are about to abolish the mammary gland? that the maternal lactiferous fount is to be relegated to a condition of innocuous desuetude? Are the sufferings of our good old maternal progenitor, great-grandmother Marsupiala, in vain? Is the adjustment of her pectoral integuments to the assaults of the cruel mandibles of her ornithorhynchous progeny to count for naught? Is that wonderful mechanism by which the female mammal supplies nutriment for the infant a failure? Is the human mammary gland inadequate to meet the requirements of civilization? If so, why? Wherein is it inadequate? What long stride in our evolution has taken us beyond the reach of compensatory development?"

The lower orders of mammalia, both free and domesticated, nourish their young by lactation with success to a degree that, by comparison, seems to place instinct above intelligence when contrasted with the failures in the human being. In all candor let us inquire whether it is not expedient that we should devote a portion of that vast energy now expended in the search for substitute foods to the subject of "disturbed lactation and its causes." Let us face this question squarely. Have we exhausted the resources of the human mammary gland as a milk laboratory? I beg leave to emphasize the importance of careful clinical and analytic work towards a determination of the causes of disturbances in the equilibrium of mother's milk.

Before entering on this subject the physiologic process by which milk is produced should be considered briefly, in order that some of the influences which affect these changes may be better appreciated. A peculiarity of the function of the mammary gland is that it persists during a more or less definite time and then subsides. Exceptions are seen in some cases of prolonged lactation, and in curious instances in which the function is established in women who had never conceived, under stimulation of the nipple by sucking, a point of clinical value.

Without taking time to review the structure of the gland, attention is called to the fact that the alveoli are lined with columnar epithelium, and it is by means of these cells that this composite emulsion is produced.

The exact mode of its production from the circulating fluids has been a subject of much discussion and extended research. The older belief that the cells of the glands operate as a sort of filter, the milk being derived directly from the blood, has been rejected as unscientific. To-day three theories claim attention.

Stated briefly, the first explains the production of fat by an actual breaking down of the lining cells—a fatty degeneration—a process which, it is estimated, would require the renewal of the epithelium of the alveoli at least five times in the twenty-four hours. This is held by some to be preposterous. The second theory is a modification of the first, as only the free ends of the cells, after a stage of increased activity, appear to break down, liberating their products of metabolism, the fixed ends with the nuclei remaining to renew the process. The third attributes to the cells of the mammary gland, through the agency of protoplasm, a power analogous to that of other secreting structures, viz., the power of elaborating from the fluids a secretion peculiar to themselves, cell destruction being no more necessary than in other secreting glands. More exact knowledge on this subject would be valuable in its bearing on the subject of changing the constituents of the milk by physiologic methods, as feeding, etc., a matter which has hitherto been determined exclusively by clinical observation and experiment. Were the glands mere filters, as was formerly taught, it is reasonable to suppose that the quality of their products would partake of the nature of the blood constituents, and that changes in the latter would produce corresponding changes in the milk, a result which repeated observations have disproved.

No secretory nerves have yet been demonstrated in the mammary gland, but, were clinical data wanting, analogy would compel the acceptance of the hypothesis of nerve influence and control in the secretion of milk, probably through the cranial and sympathetic nerves. It is a fact of such common observation that mental conditions influence the milk-supply that no teacher denies it. Violent emotion, excitement, shock, fatigue, may alter any or all the secretions. Secretory glands may become vicariously excretory, etc.

Milk secretion is subject to variations in quantity as well as in quality. In the majority of cases it is regulated to meet the requirements of the infant, although instances are common in which the quantity is insufficient. On the other hand, it frequently occurs that the mother may successfully nurse two infants, as in the case of twins, or in wet-nursing in foundlings' homes, etc. From this it may be inferred that in some mysterious way, to a limited extent, the supply is regulated by the demand. It is believed that the surplus, if not drawn, is reabsorbed.

It is a question whether the daily quantity of milk can be increased by any medicinal agent. It is well known, however, that the mammary secretion, both as to quantity and composition, is quite sensitive to many influences. The secretion is usually diminished by a so-called "dry diet," in which there is a deficiency of water, while, on the other hand, it may be increased by a liberal allowance of fluids.

Attention is directed to the mental attitude of the mother during nursing as influencing the quantity of milk. It must not be forgotten, however, that over-anxiety to produce may defeat its object. Loss of fluids from any cause—as copious perspiration, menstruation or diarrhea—may lessen the amount.

The secretion of milk, when scanty, may be increased by any agency that increases normal metabolism—as diet, exercise, massage, electricity, fresh air, sunlight, congenial surroundings, freedom from discomfort and an equable temperament. Sudden emotion—as grief, anxiety, anger, fear, or anything that produces shock or profoundly impresses the nervous system—may not only

diminish the secretion, but occasionally may cause total suppression.

It is accepted that the constituents of milk may be influenced by variations in the hygiene, especially in the diet of the mother. The former belief that the fat of the milk was increased by the fat ingested has been repeatedly disproved by actual experiment, although Winternitz claims to have demonstrated its truth in lower animals. It is believed to-day that the proportion of fat in the milk depends largely on the amount of protein in the mother's food, increase or diminution in the latter causing a like change in the former. This relation of proteins in the food to fats in the milk is a matter of daily observation. A mere ingestion of albuminoids, however, is not sufficient to produce a "rich milk," since thorough digestion and assimilation are essential to fat elaboration. Fat may be scanty in the milk, not only from an insufficiently nitrogenous diet, but also as a result of excess of fats in the food. Examples are not wanting of mothers who, in their efforts to enrich their milk, defeat this object by inordinate ingestion of cream.

The proteins are rarely low, except in cases of exhaustion or debility, as from sickness or insufficient food. In this condition the milk is poor and watery, there being a deficiency in all the solids. It may occur that the mother's milk, in cases of debility, shows an excess of proteins with a deficiency of other constituents. Excessive proteins may appear also in the milk of the overfed mother of sedentary habits.

Sudden disturbances in the digestion of a healthy nursing leads the physician at times to startling conclusions in his search for their etiology. Violent agitation of the nervous system of the mother may change the quality of the lacteal secretion almost instantly; the milk quite frequently, under these circumstances, resembling colostrum in its changed proteins, low fat, and colostrum corpuscles. Instances are known in which convulsions and even death to the nursing have followed.

The analysis of the mother's milk frequently leads to the discovery of the cause of the infant's indigestion. The secretion of colostrum milk has been known to follow undue fatigue, excitement, anger, grief, coitus, also menstruation and conception. In fact, disturbances of digestion in the infant are frequently the first intimation of another pregnancy in the mother.

Both the quantity and the quality of the milk are influenced by the frequency of nursing. Poor milk frequently results from prolonged or irregular intervals in nursing. The more frequently the breasts are emptied the higher will be the percentage of solids, especially the proteids.

Among many probable influences that operate to the disadvantage of normal lactation I would suggest as worthy of immediate study (because apparently most ignored) (1) the return of maternal menstruation and (2) the indulgence in coitus during lactation.

Pregnancy in the nursing woman has long been regarded by the majority of observers as a contra-indication to suckling, but, as to the effect of menstruation and coitus wide differences of opinion are apparent and the paucity of reported observations concerning their influence on lactation is, to say the least, quite startling.

The lame excuse that the subject is delicate and the facts hard to get at because (for obvious reasons) our sources of information are unreliable, is just as valid along other lines, and was formerly considered a bar to the clinical study of anatomy, physiology and gynecol-

ogy. The gynecologist found it necessary to know of and to control the exercise of sexual function in his patient ere he secured satisfactory results. Shall the pediatrician be expected to work in ignorance of conditions of possible vital importance to the welfare of his nursing patient? Must he be handicapped in his control of certain important elements in the hygiene of lactation?

The prevalent modern uplift movement in social hygiene is facing some startling facts and theories and is becoming familiar with very plain language largely in the interest of the unbegotten progeny. Shall lack of candor concerning sexual hygiene sacrifice the already born nursing?

With all due appreciation of the high degree of success attained by our rapid advance in substitute feeding, I protest against the too frequent early resort to the artificial, before the possibilities of the natural mode of feeding have been exhausted. I believe that there are moral and prudential, as well as physiologic and sanitary reasons, why the rapidly increasing tendency towards abrogation of this maternal function should be checked.

These and kindred considerations have impelled me to look up the literature as to the effects of menstruation, and more especially coitus, on maternal lactation. A review of over ninety books on diseases of children, obstetrics, physiology, physiologic chemistry and about 200 magazine articles on infant-feeding and allied subjects, shows not more than a dozen authors who directly referred to effects of sexual intercourse during lactation. Time will allow but a few references to older writers.

Bouchut¹ quotes an aphorism of Galen: "I order all women who are nursing children to abstain from venery."

Chevasse² says: "If the mother begins to menstruate, she should refrain from coitus, from probability of conception."

Bouchut quotes Platner: "Certain it is that unsatisfied desires are worse and more harmful than a rare and moderate use of venery." Routh³ in treatment of defective lactation refers to great sympathy between breasts and genitalia, states that proper functional use of the one will influence the other and advises occasional reunion to improve and excite flow of milk.

Hartman⁴ says that sexual intercourse may be allowed the mother moderately; it should be forbidden only from danger of ensuing pregnancy.

Trousseau⁵ says that conjugal intercourse is not injurious to nurse or nursing provided it is regulated by great moderation.

Laurent Joubert in "Curiosities," advocated moderation from personal experience in his own family.

Vogel⁶ says, "Whether a coitus, on which no gestation follows, is in itself injurious, I am unable to say; but it does not seem probable."

Bouchut says that nothing positive is known concerning the influence of coitus, but that wet-nurses should be forbidden it from danger of conception following and the consequent diminution of milk. He recites a case of a young woman whose child fell into violent convulsions each time she gave herself up to coitus, but says that numerous examples on the other hand demonstrate that influence not always so injurious.

1. Bouchut: Diseases of Children, 1855.

2. Chevasse: Advice to Wife and Mother, 1877.

3. Routh: Infant-Feeding, 1879.

4. Hartman: Diseases of Children, 1853.

5. Trousseau: Clinical Medicine, 1871.

6. Vogel: Practical Treatise of Diseases of Children, 1806.

Routh ("Galactorrhea") says that there can be no doubt that irritation in the uterus itself, or its immediate appendages causes profuse secretion. Undue excitement has been known to produce a jet of milk from both breasts, which has subsided only with the cessation of the stimulus. He says nothing concerning the quality of such milk.

Busey⁷ says that excessive sexual indulgence during the period of lactation seriously deteriorates the nutritive qualities of the milk. This influence has not been definitely determined. The unwholesome and sometimes pernicious changes produced in the mother's milk by sudden bursts of passion, menstruation and excessive sexual indulgence are too well established by clinical observations, if not by chemical analysis, to be considered mere coincidences unworthy of the attention and careful scrutiny of the scientific physician. Woman is the highest type of the breeding female, yet she is the only one not exempted from the approach of the male by a natural interval between the periods of estrum. It is a law of the physical economy that excessive indulgence of any animal passion, or the overwork of any function or organ, is detrimental to the whole organism.

The "Dictionary of Medical Sciences" reports a case of a woman whose milk gushed out with force and abundance during coition; the quality is not mentioned. Herodotus refers to this long-known effect.

Engelmann⁸ says that the negroes of Loango of Central Africa are a fair type of the black race. With them women are prohibited from sexual intercourse during lactation, which averages from twelve to fourteen months. Among the northern tribes of Russia the mother dwells apart for several months after confinement. On the slave-coast, when women become mothers, they are sent away for three years to nurse the infant and to prevent cohabitation. If the act should be accomplished they believe that the evil spirit takes away the milk and the child dies. A woman is chosen for the husband by the wife during her own period of lactation. The Japanese employ "by-wives." Native women of Africa, Asia and many of our Western territories are not only kept apart from the husband during confinement but for weeks afterward. With them as with Hebrews there is the idea of uncleanness. But by this isolation, rest and non-exposure the women escape numerous uterine troubles.

Regarding the Jewish custom⁹ of a longer period of uncleanness for a "maid child" than for a male, Kotelman believes it was because females were weaker, more despised and believed to be more unclean. For a boy the period of lochia rubra was seven days and twice that period for a girl. The lochia alba lasted thirty-three days for a boy and sixty-six for a girl, before their burnt offerings could be made.

Arabs do not deprive themselves of sexual intercourse during the course of lactation. The Prophet, however, without expressly forbidding this practice, lets it be understood that it must not be an injury to the nursing. According to Sue, Mohammed commanded a widow who was nursing a child not to remarry before two years, counting from the day of birth of the child, unless he should die or her milk be dried up.

Busey-Caseauz suggested a "relation of causality between rickets of the infant and the frequent occurrence of the menses during the greater part of lactation"; but Tilbur Fox was the first to assert and prove

the direct relation of cause and effect. From numerous observations carefully recorded, he deduced the important conclusions that when rickets attacks a child entirely dependent on the mother's milk, the mother will be found to have menstruated during lactation regularly for several months and the degree of rickets will be in direct ratio to the frequency, duration and amount of menstrual flow. My own observation fully corroborates the testimony of Fox.

Hirst¹⁰ says that return of menstruation will sometimes affect the quantity and quality of milk but not as often as popularly supposed. Zweifel, Winkel, Joux, Tilt, Becqueril and Vernois state positively that the return is without influence on lactation. Tilt obtained these results; of 100 women whose menstruation returned, forty-five retained milk unchanged; in eight it was diminished; two lost the milk altogether; twenty-four had large flow during and fifteen after menstruation. In six the percentage of solids decreased.

Rotch¹¹ gives few analyses, but suggests the probability of a deficiency in fats and increase of proteins.

Holt¹² says that the effect is exceedingly variable, depending on individual and ease of menstruation. Meyer in 685 cases noted disturbances in over one-half. At the present time sufficient observations have not been made. Monti believes that the fat is not constantly affected.

Schlichter¹³ arrived at conclusions after careful watching and chemical analyses; the increase in weight during menstruation in many cases was extraordinary. Increase in weight is greater during and directly after the appearance of menstruation than before. Metrorrhagia before the sixth week may retard development.

Diseases in the nursing child, as dyspepsia, colic, enteric catarrh, occurring during menstruation, should be regarded as coincidences.

The "American Text-Book of Obstetrics" (1895) says that the presence of colostrum corpuscles after the eighth or tenth day indicates qualitative changes in the milk which may disagree with the child. This has been observed when the mother has been affected by some profound nervous impression, such as excessive grief, fright, fatigue, or sexual excitement, anemia, and occasionally the return of menstruation.

Jacobi¹⁴ says that pregnancy is incompatible with lactation. It is rare for a woman to have strength and blood in sufficient quantity to sustain herself, nursing and an embryo. Therefore as early as 1758, a law was passed in France, according to which wet-nurses had to inform their employers of the occurrence of another conception. Not very rarely will the uterus not be able to resist the persistent mammary irritation kept up by nursing and the fetus is expelled. The milk of a pregnant woman undergoes a certain number of changes. Milk assumes the nature of colostrum. Changes brought on by menstruation are analogous, though not so complete. Opinions differ as to whether it contra-indicates nursing; for it is true that there are many observations of colic, vomiting and acid diarrhea, but just as many of entire euphoria. Sutlis¹⁵ records an investigation of the influences of pregnancy on nursing women as shown in weight of infants. In twenty-six cases, on the nurse's becoming pregnant, there was retardation in child's gain.

10. Hirst: Abnormalities of Milk Secretion.

11. Rotch: Text-Book, J. B. Lippincott, 1908.

12. Holt: Text-Book of Diseases of Children, D. Appleton, 1909.

13. Schlichter: Wien. klin. Wchnschr., 1889.

14. Jacobi: Influence of Menstruation, Pregnancy and Medicine on Lactation.

15. Sutlis: L'Obstetrique.

7. Busey: Mortality of Young Children, 1881.

8. Engelmann: Labor Among Primitive Peoples, 1883.

9. Leviticus, xii, 2, 5.

That the early appearance of menstruation is a frequent result of coitus during lactation I believe to be true. I am satisfied that disturbances of lactation on the recurrence of menstruation is the rule with few exceptions.

Unlike Schlichter's, my own observations show that the child gains weight occasionally toward the close of and nearly always immediately following menstruation. Exceptions to this are seen in those cases in which the digestive disturbances of the nursling are unusually marked, such disturbances most frequently occurring during the approach of or in the early days of the menstrual molimen.

My own observations lead to the conclusion that gestation, menstruation and copulation in the large majority of cases are inimical to the highest perfection of lactation; that there are apparent exceptions to this may only prove the rule.

I believe that primitive woman attained to the highest degree of perfection in the exercise of but one of these functions at a time; that primarily menstruation did not recur during lactation nor during gestation; that woman's period of estrum ceased with conception and remained quiescent throughout gestation and lactation; that coitus out of the period of estrum was forced on the primitive female as the price of monogamy; that one of the results of the compromise is menstruation during the primal period of rest.

The price of civilization includes other items of compromise with natural laws which tend to prevent or deteriorate healthful function. As a result of these misplaced or superinduced reproductive functions I have noted the injurious effects on the nursling in varying degree from retarded weight gain, loss of weight, athrepsia, marasmus, and acute gastro-intestinal disturbances to sudden death in convulsions or coma from acute intoxication.

Truly, it is claimed that menstruation and especially coitus are factors difficult of isolation in the etiology of disturbed lactation. The alert observer, however, will encounter not infrequently cases in which this factor is obvious; as, for instance, the normal lactation in maternity hospitals disturbed on returning to the husband reestablished on reentering hospital; the cases of impoverished or perverted lactation which improve under relief from sexual duties as a result of sickness, absence, injury to or death of the husband, or the hygienic visit to grandmother's; not to mention the authentic occurrences of dyspepsia, convulsions or even death of the nursling following the return of the commercial drummer to the bosom of his family.

The gynecologist has demonstrated that cohabitation is in many instances inimical to successful treatment, and he learned to supervise the sexual relation of his patient. Are we willing to admit that the matter is too difficult for the pediatrician?

If then in all possible cases of indigestion or disturbed nutrition in the nursling, in which other cause is not apparent we add to our routine of weighing and milk analysis a careful supervision of the nurse as to the physical and functional condition of the generative organs with exact knowledge as to her sexual habits, we shall undoubtedly arrive at more definite conclusions. The field promises to be too fruitful to remain much longer fallow. If just a moiety of the energy and ingenuity now expended on the problem of how to rob the baby of his birthright through the substitution of unnat-

ural foods were applied to the question of normal lactation the resultant betterment of both mother and nursling, the lowered infant mortality and diminished child morbidity would, in my opinion, prove a most profitable harvest.

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COMPLEMENTAL FEEDING OF THE INFANT AS AN EFFECTIVE AID IN MAINTAIN- ING MATERNAL NURSING *

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Possibly no subject to-day is attracting more serious attention among the thoughtful members of society in various civilized countries than that of the necessity of devising measures to reduce infant mortality. While the phases of this question are legion, and the remedies complex, there is at least uniformity in the opinion that maternal nursing furnishes one of the chief aids in the solution of the problem, provided the breast-milk already is, or can be made to be, competent. I have already addressed this body concerning measures directed to the nutrition and health of the mother, which may be employed to assist in maintaining or reestablishing a sufficient flow of breast-milk, and it is not my intention to dwell on this phase of the subject.

While such measures have proved to be often most helpful, it would be absurd to assert that they are always completely successful. However, even in less successful instances there is often some undoubted gain both in quantity and quality of the mammary secretion, although the total secretion may not at best suffice to satisfy all the needs of the infant, as shown by its inadequate increase in weight. It is, nevertheless, a definite strategic gain, measured by the future chances for the infant's life, if the threatened loss of breast-milk can be stopped or even delayed. The continuance of a moderate amount of breast-milk ensures a greater probability that the newborn infant will not suffer from serious disturbances or retrograde rapidly into a condition of malnutrition. Such delay at least enables us to introduce, with necessary caution, and without undue or disturbing haste, the additional nutriment which the infant requires. This may be done with more confidence, because of the recognized aid which the natural ferments of human milk seem to offer in the digestion of other forms of milk.

This paper is presented to draw attention to the available methods of supplementing a more or less deficient secretion in order to bring about normal development in infants who at best can only receive a somewhat deficient breast-milk. The far too common course with such infants is to abandon the idea of utilizing the breast-milk, and immediately or rapidly to substitute bottle-feeding. This step is based on failure to gain weight, the evident dissatisfaction of the infant, apparent abnormality of the infant's stools, and the traditional assumption that these phenomena are caused by unsuitable breast-milk. It is exceedingly probable that much that has been accepted concerning the frequent occurrence of poor or injurious breast-milk must be corrected in the light of more recent investigation of these matters.

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

DEFICIENT NUTRITION NOT INDIGESTION

After years of misapprehension, we should now recognize the simple truth that mucoid and somewhat frequent stools, varying in hue from dark green to golden brown, and containing but little fecal residue of milk, are the stools of a relative starvation, and indicate a scanty intake of breast-milk, and not digestive disturbance caused by a breast-milk of abnormal chemical composition. When this view assumes its place in medical teaching and practice, more infants will be started smoothly on the road to normal increase of weight, instead of being switched off in the direction of

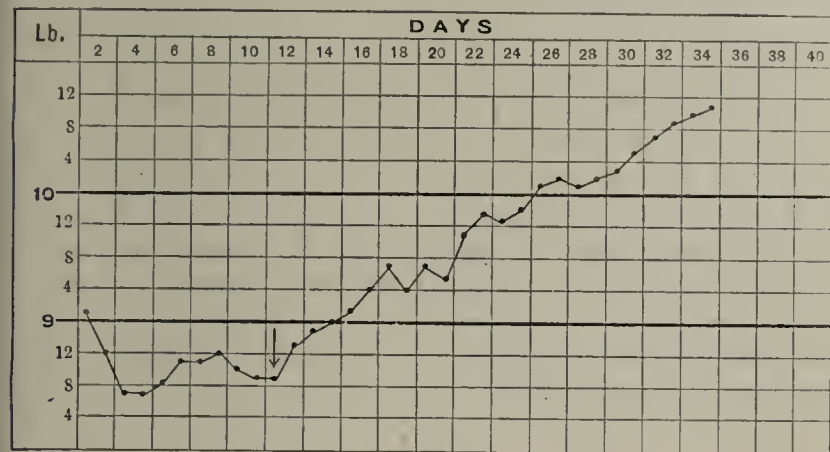


Fig. 1.—Daily weight chart of C. D., male. On eleventh day use of whey was begun, one ounce being given after each nursing. Across top, figures indicate days; down left side, weight in pounds.

marasmus by early weaning and utterly misguided efforts to correct a digestion that only demands more breast-milk to digest. That the import of such stools, so easily confirmed by any open-minded investigator, should have escaped general recognition so long, seems almost incredible; yet it is the key to the right management of many infants.

IMPROVE THE MOTHER'S NUTRITION

If the trouble be not due to the simple failure of the infant to draw the milk from the breast, with few and rare exceptions, breast-milk which is considered poor or injurious is only the deficient secretion, possibly, of ill-functioning breasts, but more commonly of those of a human body which is improperly nourished or physically below par in other ways. It is irrational to suppose that such a body can always produce good and abundant milk; on the contrary, it is a matter of surprise that it does so as often as it does; but it is rational to the same degree to assume that, with a favorable diet and the restoration to bodily vigor, the quality and quantity of the secretion should improve. That this cannot be accomplished at once, and that in many cases a perfectly normal quantity of milk cannot be produced is but natural, yet the value to the infant of the available, even though somewhat inadequate, natural nourishment, should be neither underestimated nor forgotten. We may not at all times feel justified in waiting for this improvement in the breast-milk to take place, and pending a final judgment on its possibilities, something further may be necessary for the welfare of the infant.

EARLY PERIOD IMPORTANT

Of the various periods of infancy in which a stationary weight is a menace to the infant, that of the first few weeks of life is preeminent. While standing still it is really losing ground, because it is not acquiring the vigor and capacity to make the increased demands to which the breast, by normal physiologic adjustment,

endeavors to respond. We need not search for any special dispensation of Providence which enables many a mother of twins to nurse both of her babies. The explanation is to be found in the response of the breast to the larger demand.

There is a further reason why breast-milk, even if somewhat deficient, should be utilized to the utmost in order that the infant may secure a good start. The worst type of marasmic infants, by common consent, is often found in those who have failed to receive breast-milk in the first weeks or months of life. This is undoubtedly because the digestive system, having only reached a certain stage of its development at birth, cannot without further growth of the body, receive its natural increment of digestive and absorptive power.

DEVELOPMENT SHOULD BE PROGRESSIVE

After the initial loss of weight in the newborn, which Hirsch's¹ careful studies show to be practically equal to that of the meconium and fluids voided, the development of the immature body should normally be progressive. When this does not occur for any considerable length of time, or having begun, ceases, experience teaches us that the matter may have a more serious aspect than that of a merely stationary weight, for where progress is lacking there may be also an actual deterioration in assimilative power. This seeming paradox reaches its full demonstration in the marasmic bottle-fed infant which, having long failed to gain, is often with the greatest difficulty brought to a point where it will renew its assimilation of food in sufficient quantities to resume normal growth. This should not be construed as meaning that there is an immediate danger to the infant in our continuing for a reasonable period every effort to bring about the mutual physiological adjustment between mother and child, so often delayed on the side of either by temporary and remediable factors, but that the policy should not be continued indefinitely.

During the waiting period, which may continue for ten days or two weeks, attention should be paid to the diet and hygiene of the mother, and weaning should not be lightly decided on if there be reasonable expectation of success. Nevertheless, in our management of these babies it is of the highest importance to conserve as far

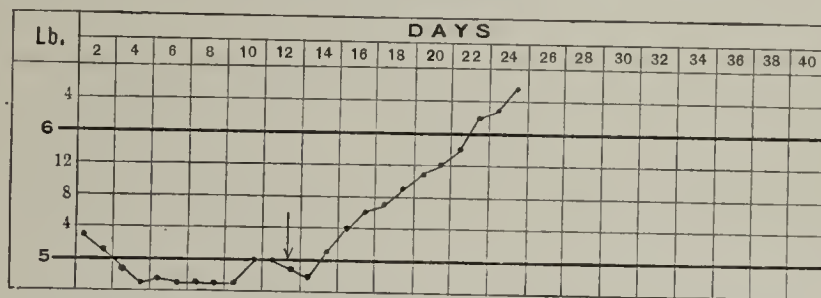


Fig. 2.—Daily weight chart of E. J., male. On twelfth day use of whey was begun, one ounce being given after each nursing.

as possible and utilize the initial impetus to growths which is possessed by every newborn infant. The greatest aid is obtained from breast-milk, which contains, or may elaborate, principles which stimulate digestion and absorption. But to accomplish this end, it is rational that when the breast-milk of the mother for any reason, temporary or otherwise, proves insufficient to supply all the material needed for normal continuous growth, we should make up this deficiency by giving in addition some form of supplementary feeding.

1. Berl. klin. Wehnschr., Jan. 3, 1910.

SMALL COMPLEMENTAL FEEDINGS

Most striking in my work along this line has been the discovery of how simple may be the food and how small the quantities which often serve under such circumstances to inaugurate a gain in weight. As little as half an ounce of barley water given before or after nursing has repeatedly proven sufficient to start the line upwards on the weight chart. This experience has shown conclusively how small a margin exists at times between insufficiency and sufficiency of the mammary secretion, and is worthy of serious consideration by those who have long been in the habit of jumping to the conclusion

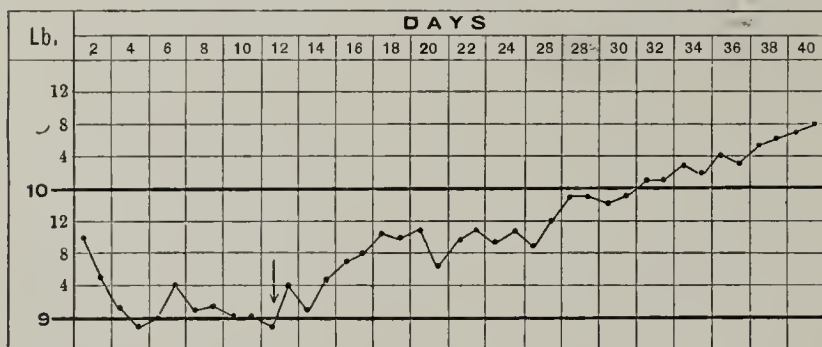


Fig. 3.—Daily weight chart of A. B., male. On eleventh day use of whey was begun, half an ounce being given after each nursing.

that because the infant did not gain there must necessarily be something seriously wrong with the breast-milk, and have consequently discarded the breast-milk entirely for the more hazardous use of exclusive bottle-feeding.

It has been my duty and the privilege to impress the folly of the latter course on the profession in several papers dealing with other phases of this subject; but while the doctrine of the conservation of maternal breast-milk has made considerable and gratifying progress, it is evident that it is not widely practiced and that its importance and its simplicity must be made clearer to the profession at large.

Knowing that the margin between insufficiency and sufficiency of the mother's milk is often a narrow one, and granting for the moment that suitable attention to the mother's diet does not promptly overcome the difficulty, I deem it often unwise while continuing these efforts to lose further precious time in awaiting the result, but would advise supplementing the maternal breast with small artificial feedings. It makes little difference whether this is done with the expectation that the secreting power of the maternal breasts will eventually be entirely sufficient for the infant or whether the probabilities are that only an important part of the infant's nourishment can be derived from the mother. The purpose at this time is to sustain the natural impetus to growth, increase the infant's weight, and so continue the development of the digestive system. Every half pound and pound of weight gained at this time increases the infant's chance of life.

While later in lactation it may be necessary to make this supplementary food take the place of the breast at one or more of the nursing periods, this is not the best course with the recently born infant. For these infants, where it is of supreme importance to maintain the frequent periodical suction of the infant at the breast in order to furnish the full natural stimulation to increased secretion, it is better to give small bottle feedings as soon as the baby has finished nursing. These *post-cibum*, or "p.c." feedings I prefer to designate as "complemental feedings," to distinguish them more readily from "supplementary feedings," inasmuch as the

latter term has by long usage been applied to those bottle feedings which are given occasionally during the day to nursing infants, instead of the breast.

REQUISITES OF COMPLEMENTARY FEEDINGS

There are two chief requisites to be considered in giving complemental feedings, and these are: first, that they shall furnish food in such simple and assimilable form that they will not disturb the digestion of the infant; and, second, that they shall be so small in quantity as not to exceed, when added to the previously ingested breast-milk, the normal capacity of the stomach at this age. A transgression of either of these principles may readily defeat our purpose, which, as the term complemental implies, is simply to fill out the nutritional value and quantity of a partially deficient breast-milk.

For this purpose, complemental feedings after each nursing, of one-half ounce, or later one ounce, are usually sufficient for recently born infants. The increase to one ounce may be made when the growth and age of the infant indicate a larger stomach capacity, or earlier if the residue in the stools or the weight of the infant before and after nursing demonstrates a larger deficiency in the breast-milk.

MATERIALS FOR COMPLEMENTAL FEEDINGS

Materials for these small complemental feedings which have met the indications have been barley water, whey, or one of the proprietary combinations of maltose, dextrose, and dry condensed milk—the latter in the proportions of one-half of a fairly level teaspoonful to one-half ounce of boiled water. Of these, barley water is naturally limited in its usefulness to instances in which the deficiency of the breast-milk is not very great, and since its food value is small, it cannot be used alone for a very long period. It is, however, not only an aid to the proper digestion of certain over-rich breast-milks, but is also an excellent medium for the addition of cows' milk, if the subsequent progress of the case proves that with further failure of the breast-milk more food is necessary. Moreover, nursing infants so fed make the

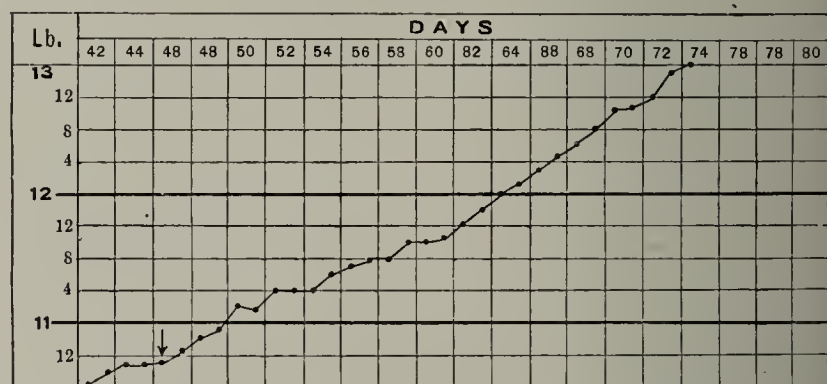


Fig. 4.—Daily weight chart of A. B. (Fig. 3), continued. Whey discontinued after forty-fifth day, the child being given the breast only.

transition from breast to bottle feeding without noticeable difficulty.

Whey and the maltose-dextrose-milk preparations have proved most useful in my hands, inaugurating prompt gains without attendant disturbances of digestion, and may be continued for considerable periods if the breast-milk holds its own. They may, not infrequently, be discontinued when it seems probable that the mother is able to furnish all the breast-milk needed, but if the nursing gradually fails they should, of course, be replaced by suitable modifications of fresh cows' milk,

since neither is suitable to maintain well-rounded development when given exclusively.

Not only is weaning often undertaken on mistaken and insufficient grounds, but the argument is frequently advanced that where success in breast-feeding appears to be doubtful, better results are obtained by beginning total artificial feeding soon after birth. This argument can obtain only when the artificial feeding of the infant is in the most expert hands, and the infant can remain under close supervision for a long period. With the vast majority of infants such supervision, for many reasons, is not possible. The pitfalls of unsupervised bottle-feeding are many and the danger of subnutrition or overfeeding great. The safer progress of the infant receiving breast-milk needs no argument. Breast-feeding, at least in competent part, can be established in many cases which at first seem rather unpromising, and any method which enables us to promote the normal growth of the infant by utilizing the physiological nutriment from the mothers' breasts while we are endeavoring to establish its permanency, is worth trying.

Since it will undoubtedly be admitted that to inaugurate a gain in weight in the newly-born infant is a long step toward its ultimate welfare and subsequent expectation of life, these measures are submitted for your consideration at this time.

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FEEDING OF FATS TO INFANTS AND THE DIFFICULTIES ENCOUNTERED *

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DETROIT

A great deal has been written during the last three years regarding the propriety of feeding fats to infants during the first year. When the percentage method of feeding was introduced all the teaching was on a plan of imitating very largely the percentages of fat protein and sugar in human milk. Many elaborate formulas were made and appeared in pediatric text-books showing how low and high percentages of each of these ingredients could be combined in a milk formula. In the more recent text-books fewer of these formulas appear. All physicians who are paying close attention to feeding young infants during the first year soon come to realize that the percentages of each food must be adjusted to the infant's digestive power rather than that the infant should be adjusted to some formula which may be thought suitable for an infant's dietary.

Experienced pediatricists realized that the first idea of imitating with cow's milk the proportions of fat protein and sugar in human milk would rarely give success. Consequently they found it necessary to give to each infant only that amount of each ingredient which the results, as shown by the infant's comfort and growth, were found to be suitable. Having once seen this necessity it soon became apparent that the amount of fat which could be fed to infants varied very much with their digestive power, their age and previous disturbances of the intestinal mucosa.

About three years ago occasional articles appeared in the pediatric journals reporting instances in which an infant could digest no fat and its dietary consequently

was constructed entirely of protein and carbohydrates. These articles continue to appear occasionally. It is not my object to report more of these cases, but rather to consider the digestion of fat in its various proportions and the bad effects resulting from imperfect digestion of fats and the foods containing them. Consequently these foods must be limited or avoided entirely.

Some ten years ago, when trying to follow the teachings on percentage feeding, I encountered great difficulties in feeding infants with the 4 per cent. proportion advocated so much at that time, it being the proportion in human milk. Nearly all physicians had the same experience, yet some continue it still. A great wave of high percentage fat feeding was spread through the country by physicians generally, who read this teaching, but had little opportunity to practice it. The result was that all pediatricists found the parents soon thoroughly imbued with the necessity of feeding cream liberally to their infants on the ground that, as they thought, it was the best part of the milk, and they were also taught that the free use of it would overcome the constipated condition of the bowels so much to be contended with in hand-fed infants. This practice still continues among the laity, and a large part of the medical profession also, and is the source of a great deal of harm to the little ones, and in only rare cases is it beneficial from a cathartic point of view. On the contrary, in most infants it causes a very obstinate constipation.

Newly born infants generally digest fat more perfectly during the first few weeks of their lives than they do in later months. Very rarely will an infant digest perfectly more fat after the second month than it has done prior to that time. In my experience there are very few of them who will at any time digest more than 2 per cent. As I do no obstetrical work, I have only a very limited number of infants to feed continuously from birth. Most of my patients are infants who have been imperfectly nursed or improperly fed for several weeks before I see them. I find that these infants have almost invariably been fed with a too high percentage of fat and that either they were born with imperfect fat digesting power or very rapidly acquired it through over-feeding of it. My experience shows that over-feeding either fat, protein or sugar will very soon materially limit or entirely destroy the power to digest that food. In most of these cases which come to me I have been compelled for many years to reduce the fat to less than 1 per cent. and in very many of the cases to remove it entirely as far as it can be removed from milk by the gravity process. The amount left in gravity milk after many hours' exposure to ice or cold air of winter is less than one-half of 1 per cent. Even this amount causes difficulty to some infants, and I have found that the fat-free milk obtained by the separator process was preferable in some families to that obtained by the gravity process. This appears to me to be due to a lesser amount of fat in the separated milk and the better condition of the sugar in the newer milk from the separative process. I always find less difficulty in feeding fat to normal infants during the first months than to those who are older.

It is a serious mistake to increase the proportion of fat in food for its laxative effect. If a small increase of one-half of 1 per cent. does not promptly produce some softening effect on the stools no further increase should be made, as usually it decomposes in the bowel and poisons the child or forms crumbly, dry, soapy stools, which increase the constipation. It is very desirable that

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

each infant should receive the highest percentage of fat which it can digest properly. It is equally important that the fat should not be increased when there is the slightest evidence of its imperfect digestion. There is no food the digestion of which is so quickly destroyed as fat. There is also no food which will so completely check the growth and development of an infant when it is imperfectly digested. It requires less than one-half of 1 per cent. of imperfectly digested fat in an infant's dietary to prevent it from growing, to disturb its sleep, to destroy its color and to pave the way for marasmus and other forms of malnutrition.

The early and prompt recognition of fat indigestion is absolutely necessary for successful infant feeding. The physician must have clear ideas on this subject and have the strength of his convictions in order to overcome the strong desire of all mothers and nurses to feed cream too freely to their infants. Imperfect digestion of fat is shown by the variable and lessened appetite of the infant, by the gassy condition of the stomach and bowels, by the disturbed sleep, by the pale-yellow color of the skin, by the tendency to vomit from one-half to one hour after feeding, by the offensive odor of the stools, by their pale, greasy, rancid-butter, or dry, crumbly appearance, and by the failure of the infant to grow. Any one of these symptoms is enough evidence to the experienced pediatricist that the proportion of fat in the food is too high and that success demands its reduction or entire removal. In the young infant during the first few months this difficulty of fat feeding applies to the milk fat only. As infants become older and able to take other foods the proportions of fat which these other foods contain will usually govern their suitability in preparing the infantile dietary. In the nitrogenous line experience shows that the poor milk fat digester cannot take the yolk of egg or the fat of oatmeal.

Where an infant's milk digestive power has been reduced through over-feeding of milk it often becomes necessary to substitute egg-albumen for this deficiency. Care must always be taken to commence with the albumen only and avoid the yolk, as the latter contains the fatty part of the egg. In feeding broths to such infants care must always be taken to remove all fat by cooling it before feeding, or, better still, to feed beef juice made by the cold-water process. The same difficulty applies to the use of cod-liver oil in most cases.

In selecting a suitable carbohydrate for these infants with defective fat digestive power, experience shows that oatmeal can rarely be fed, as it contains over 6 per cent. of fat. My experience is that the fat of oatmeal acts similarly on the child's digestive organs to the fat of milk. There is scarcely an infant who has lost the power to digest milk fat who can take any proportion of oatmeal.

Barley contains over 2 per cent. of fat. These infants do not show the same difficulty in digesting barley fat that they do with the oatmeal fat, but there is a large number of them who are unable to appropriate the fat of barley, and consequently fail when fed barley flour as a part of their dietary. These facts are very much to be regretted, as these two carbohydrates are very valuable and give excellent results in those infants who can digest them perfectly.

My experience is that these infants with feeble fat digesting power succeed better when fed rice starch than they do with any other. Rice contains less than one-half of 1 per cent. of fat, a low percentage of protein but a high and easily digested proportion of starch.

After several years' experience in using the different forms of starches I find very few of these infants with weak or damaged digestive glands who cannot metabolize a proper proportion of rice in their daily dietary.

When an infant cannot appropriate fat it is compelled to exist and grow on two foods only—proteins and carbohydrates—when Nature designed three as necessary for growth and development. The result is that these infants always make slow progress during the first six to eight months of life. As their dietary must be made up of proteins and carbohydrates it is important to select those containing the least fat.

The most suitable proteins are found in nitrogenous foods, skimmed milk, white of egg and meat juice. In these the fat is separated with little difficulty; but when we look for a carbohydrate free from fat we instantly meet with difficulty, as Nature has so mingled fat with the protein and carbohydrate in all cereals that it is impossible of such separation as can be accomplished in the nitrogenous foods. The best we can do is to select that cereal which contains the least fat with no other objectionable food feature.

A look at the chemical composition of the cereals suitable for infant foods shows the following, according to the latest reliable analyses of Wiley, Bryant, Atwater and others:

	Proteins, per cent.	Fat, per cent.	Carbo- hydrates, per cent.	Crude fiber, per cent.
Wheat flour	14.	1.90	71.20	.....
Rye	12.25	1.50	71.75	2.10
Barley	11.00	2.25	69.55	3.85
Oats	11.73	6.04	55.43	10.83
Corn	10.00	4.25	71.75	1.75
Rice	7.50	0.40	78.80	0.40

These figures show that rice contains the least fat and largest amount of starch of all cereals. It also shows the smallest percentage of crude fiber. As delicate infants usually show a tendency to loose, soft stools, which are inimical to growth, this latter feature is important, as crude fiber increases the activity of the intestine and consequent watery stools. Experience shows that rice starch is the most easily digested of all starches and equally nutritious with the best of them.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. COTTON, DOUGLAS AND SOUTHWORTH

DR. JOHN ZAHORSKY, St. Louis: For many reasons the mother's milk is deemed inadequate and the mother is advised to give the infant one or two bottle feedings a day. Of course, it is convenient for the mother, but I think this giving of one or two bottles a day is the chief cause for producing a lack of breast-feeding. It gives a long interval in which the ducts of the breast become distended, resulting in a lessening of the activity. For several years I have insisted on having the mother nurse the baby every time, and if the mother's milk is deficient I order a complementary feeding after nursing. This conserves the normal maternal nursing better than supplemental feeding. If a breast is deficient in activity, we must keep up the stimulus to that breast.

We have been taught to give the new-born infant low proteid and comparatively high fat, and this method is frequently a success; but recently we have been trying to get the nutritive ratio much higher and the difficulty we encounter is due to the fact that an excess of casein will lead to soap stools, in that it diminishes the digestion of fat. Now, shall we try to give the young baby a low protein and

comparatively high fat percentage, or a high protein and a comparatively low percentage of fat? European authorities deny that there is such a thing as a casein stool. I am convinced that American investigators are correct, that rarely there is "curd" in the stool which has casein as a central nucleus. The most common coagula in stools are those of soaps or fatty acids.

DR. EFFA V. DAVIS, Chicago: I agree with the practical point brought out by Dr. Southworth; I have used this method several years. In the last few years I have discovered that it is in the afternoon and evening that the mother gives the least milk; frequently in the morning she will give a sufficient quantity. In such cases I compromise with the patient and ask her to give complemental feeding in the afternoon. That can be determined, if there is any doubt about it, by weighing the baby before and after nursing.

I want to compliment Dr. Cotton on some of the points brought out in his paper. It seems to me that civilization is hardly civilization if it deteriorates the race. Environment has much to do with development, and I hardly care to take the time to go into a discussion of monogamy, but there is a necessity for pointing out these facts in their influence on breast feeding. It is an easy matter to tell patients what to do, but the difficulty is to have these things done, for there are two members in the family, the husband and the wife. If Dr. Cotton is right then we must take into consideration the sexual relations in the result to the nursing infant, and what sexual relations have to do with the degeneration of the child. I try to convince my families that these things must be taken account of and that they should not be heedless in reproduction without realizing what it means. One Chicago physician illustrated the point that frequent reproduction does not necessarily imply higher intelligence or physical ability, by citing the conditions that exist among tame and wild ducks. The keen, clever, courageous wild duck reproduces its kind once in a season, but the tame duck, which procreates the year round, is a stupid, lumbering creature that can hardly fly over the garden wall.

DR. J. P. SEDGWICK, Minneapolis: I think that those of us who have tried complemental feeding have found it of great value. I think we can well use even more accurate methods, in difficult cases, *i. e.*, weigh the children before and after nursing and then supplement the breast milk with enough food to come somewhere near the caloric requirement. I do think that is a valuable check, although we cannot feed the child exactly according to its caloric need. The French have recently done much along this line and they state that if we want to keep up breast feeding we must keep up the evacuation of the breasts by the complemental method. If we wish to stop the flow of milk we should give supplemental feedings.

DR. JOHN LOVETT MORSE, Boston: I want to come to the rescue of supplemental feeding. There is no doubt that all Dr. Zahorsky has said is perfectly true, but there is another side to the question. I have found that the modern woman, with all her social and family duties, has to have more than two or two and a half hours at one time away from home, and I have found that she does better and can nurse her baby longer with a supplemental feeding than if she tries to nurse it every time.

In considering the disturbance of the digestion of fat in babies we must take into consideration whether we are dealing with a well baby or with a sick baby. The conditions are entirely different. We have heard a great deal from the Germans about the dangers of fat. In the last article I saw in a German magazine it was claimed, however, that the primary cause of disturbance was the carbohydrates and that the disturbance of digestion of fat was secondary.

DR. C. F. WAHRER, Fort Madison, Ia.: While I agree with Dr. Zahorsky, I want to sound a note of warning. It is so much easier to put some food in a bottle and turn it over to some member of the family to feed the baby while the woman is thus allowed to go about her various duties, that there is great temptation to use this method of feeding. In case the child dies, we are taught that administration of 20 grains of

citrate of potash 3 times daily will aid in drying up the milk. Now careful observers at Johns Hopkins advise doing nothing at all, but let it dry up, and careful experiments have shown that if let alone thus the breasts dry up sooner. There is danger in supplemental feeding. Let us teach the mother to give the child all she can give and then, if necessary, give it complemental feeding. We have lazy mothers, incompetent mothers, and mothers who are bound up in their social duties, who are only too glad to turn the child over to the supplemental bottle. In rural districts many people bring up their babies on cows' milk and add half as much again of cream and the children do well. It is wonderful on what things some children will thrive and grow fat.

DR. JULES M. BRADY, St. Louis: Since the publication of Czerny and Keller's paper, I have made observations along this line and the clinical results prove conclusively that babies fed low fat percentage, particularly during the first two months, do far better than those fed on a comparatively high percentage of fat. The use of top milk in making dilutions has not been so successful in my hands as the use of skim milk, with its 0.5 per cent. of fat. As to the curds in infants stools the fat alone and proteid alone seem not responsible, both must be present. When fat-free acidified milk is given curds never occur, as the proteid being in the form of the lactate is not coagulable.

DR. C. G. KERLEY, New York: In almost every discussion on nursing and infant-feeding, the supposed indifference of the young mother, the so-called educated young mother, or the young mother in good society, whatever this may mean, is strenuously berated. By those who know little or nothing of New York City, all sorts of vice and corruption are supposed to abide in that city, but my observations of the mothers of New York City are very extensive, and I have found that the young mother who has had the best opportunities in life, makes the best mother, and when this young woman does not appreciate her duties in the matter of nursing and supervision of her children, it is usually the fault of her physicians and other advisers. Such a young woman has been educated sufficiently to appreciate scientific principles, and when it is explained to her that a baby's stomach is intended to digest mothers' milk and not cows' milk, and how the organ is adapted to human milk, or how human milk is made to fit the organ, no one will appreciate it more quickly and act on it more satisfactorily than the educated young mother; but the physician must be sufficiently well informed to explain this. Then this so-called high-strung mother will nurse her baby, or if she is unable to do it, she will see to its every want and fulfill her function in every respect to the best of her ability. It is difficult for me to understand why a young woman, with all the finer instincts of culture and education, should, on the advent of a child, be transformed into a creature who neglects her offspring, ranking her lower than the lower animals. In a very active work for twenty-two years among every possible class of mother, I cannot understand why I have not seen some of this supposed indifference and neglect.

If you wish one of these young mothers to discontinue her nursing function, then have her discontinue her former method of life. Tie her down to the baby and keep her there and very likely the nursing will be short-lived. She has been accustomed probably to an active girl's out-of-door life, as every girl should who has an opportunity. I have these mothers continue their activities, horseback riding, golf, afternoon teas, the theater, surf-bathing; in fact, one of the secrets of continuing a reasonably good milk-supply in a nursing mother, regardless of station, is to have her lead a happy and congenial life, in both a social and an occupational way. The diet practically should be the diet to which she was accustomed before she became a mother. One cannot take a high-class young mother and make a drudge and an animal out of her with success, just because she happens to have a baby. In order that she may be a successful mother, there will have to be one or two supplemental feedings a day. The statement that one bottle or two bottles a day, supplied the baby in order that the mother may be given more freedom, is a means of gradually curtailing the milk

supply or cutting short the nursing period is absolutely without foundation. On the contrary, by this method I am able to have the mother continue nursing longer by 2 or 3 months than when she is required to nurse the child at each feeding.

DR. A. C. COTTON, Chicago: I never listened to a discussion on infant-feeding where there was so much good sense manifest and so little foolishness. I don't know of anything that was overlooked except that perhaps there might have been a little more emphasis laid on the utilization of mother's milk, even if it be in extreme reduction. There should always be an effort made to stimulate the lacteal secretion; even though there be but two or three grams of it, it is worth saving. I think many of you will remember a paper presented by Dr. Wentworth, of Boston, on the excretors of secretion; it was very suggestive. It is fair to assume that there is something in mother's milk which acts as an exciter to the digestive functions that we cannot imitate in any artificial food. Even only a gram or two of mother's milk may be sufficient to promote digestion. That was the only point that I did not think received sufficient emphasis.

As to the digestion of fats, I presume we shall never come to an agreement. Dr. Morse hit it exactly on the head when he said enough was enough and too much was too much. No exact rule can ever be laid down for the individual baby. The differences between the fat of cows' milk and the fat of maternal milk are sufficient to prevent any comparison as to quantity ever being attempted.

DR. CHARLES DOUGLAS, Detroit: I use complementary or supplemental feeding according to the needs of the woman. I may use the supplemental method until the woman recovers her strength and is able to do the whole work herself. The point of stimulating the breast at intervals is good, but that stimulation may be once in 2 hours, or once in 4 hours, or once in 6 hours, and if the woman is worn out or exhausted, I think she does better with 4 or 6 hours' rest. In a strong woman I think two hours is better. But the woman herself usually argues that substituting every alternate meal is better for her. I think that as a regular practice it is not good, although I continually do it with women who have to get away from the house a few hours. Putting a young woman in the house and in charge of a baby when she is not educated along that line is a great tax, and if she can get a certain amount of rest it is a great advantage.

DR. T. S. SOUTHWORTH, New York: I employ supplementary feeding in many cases and should limit the use of complementary feedings to the first few weeks of life, while trying to get the child started on the upward road of growth and nutrition. I make the largest use of supplementary feedings later. I am glad Dr. Davis spoke of a fact that has not been mentioned in certain text-books, namely: that in the afternoon and evening the nursing mother is liable to have the least milk. Any one who follows this out can easily recognize the fact by weighing the children in the morning and in the afternoon and evening, both before and after nursing. It is a matter we should remember in giving nourishment to the mother in order to improve the breast milk and also with reference to the needs of the infant itself. When with deficient milk it is necessary to substitute bottle feedings in part for the breast, I am accustomed to have the mother nurse, particularly in the afternoon, each time from both breasts, thus maintaining the stimulation of the breasts. This is satisfactory in keeping up the flow of the breast milk so long as the number of bottles does not exceed the number of nursings. The mother nurses from both breasts at one nursing and gives the bottle at the next feeding. The only difficulty with Dr. Sedgwick's method, which would be excellent where one could weigh the child before and after nursing and adjust the amount accordingly, is that it would be too complicated to employ in very many cases.

Creosote in Bronchopneumonia.—Creosote is indicated in all stages of the disease. It should be prescribed in small doses several times a day. The tent made of bed-sheets hung around the bed and moistened with creosote, oil of eucalyptus and the like is of service, especially in tracheobronchitis.—H. B. Sheffield, in *Merck's Archives*.

YERSIN-ROUX SERUM IN THE TREATMENT OF PLAGUE*

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HONOLULU, T. H.

By permission of Dr. Ramus, chief quarantine officer of the Territory of Hawaii, I submit for consideration the following report on the treatment of three cases of plague, by Yersin-Roux serum.

The action of Yersin-Roux serum in the treatment of this disease has been so greatly a matter of dispute among those who have used it that this report is given in the hope of causing at least a revision of opinion among those who condemn it as useless.

My first experience in the treatment of plague by means of this serum, in 1907, caused me to regard its use most favorably. Unfortunately, the records of those cases, about 20 in number, were thought by me to be in the possession of the Territorial Board of Health, but cannot now be found. But the three cases I am about to report show admirably the chief points observed at that time, and I am enabled to use them as types illustrative of the action of the serum in cases of plague.

The three patients were Russian immigrants, all of the same family: the father aged 45, one daughter aged 15, and another daughter aged 8.

For the purpose of classification I have designated the older daughter as Case 1, the father as Case 2 and the younger daughter as Case 3.

CASE 1.—Russian girl, aged 15.

History.—I first saw this patient at the Immigration Station on June 7, 1910, at about 11 a. m. She had complained of headache and nausea the day before, with some fever, and her illness was attributed to the eating of preserved eggs, which her father had brought with him from Siberia. When I saw her, at the request and in consultation with Dr. Ramus, she was in bed, feeling too ill to be about. The facies at once impressed me as suggestive of plague: the wrinkled brow, half-closed eyes, and drooping mouth united in producing that "worried look" so frequently accompanying plague.

Examination.—A swelling was made out in the neck, under the angle of the jaw. The tumor was about the size and shape of a hen's egg—indurated, but uniformly smooth to the touch, and showing no evidence of its multiglandular structure. It was exceedingly painful on manipulation, although there was but little redness or edema of the skin. I have repeatedly noticed that the skin over a cervical bubo is not nearly so frequently affected with redness and edema as the skin over plague buboes in other situations. Temperature was 102 F., and in view of the fact that the girl's father was in a similar condition (but with a bubo in the right groin, in which a bacillus resembling that of plague had been found), a provisional diagnosis of plague was made. The gland was not punctured or incised for examination, however, as owing to the difficulty in securing healing, or even preventing sloughing, in buboes so treated, I have long since avoided tampering with a bubo in the cervical region, where the occurrence of sloughing can so easily endanger so many important structures.

Treatment.—The patient was removed to Quarantine Island, and on June 8 I was detailed by Dr. Ramus to take charge of her and the other patients. On this date her condition was much more serious, the lethargy having increased, and there being considerable pain in the chest on the left side. The percussion note over the whole of the front of the chest as far down as the cardiac dulness was diminished in reson-

* Read before the Hawaiian Territorial Medical Society, July, 1910.

ance, there was a shortening of the expiratory murmur, and some fine suberepitant râles. The advisability of administering serum was decided on, and at 6 p. m. she received an injection of 30 e.e. The supplementary treatment consisted of a tablespoonful of whiskey in a glass of milk every 4 hours, alternating every two hours with 5 minims of tincture of digitalis and 1/40 grain of strychnin.

Course of Disease.—June 9: She slept well, and her temperature had fallen from 102.2 (the evening before) to 99.6 F., the pulse, however, remaining the same, 120, and the respiration increasing from 32 to 36. By evening, the temperature had risen to 103 F., and pulse was 128 and respiration 38. The progress of the involvement of the lungs was not much further than the day before, although the left apex was involved.

June 10: There was no marked fall, as occurs in the mornings in favorable cases, instead there was a fall of but two-tenths of a degree; pulse was 120, respiration 36. By evening the temperature had risen to a higher point than it had yet reached, 104 F.; pulse was 140, respiration 38. The patient became delirious about 8 p. m., muttering and picking at the bedclothes.

June 11: At 6 a. m., temperature was 105.6 F., and she died about 8 a. m.

Autopsy.—Post-mortem examination showed macroscopic evidences of plague. The enlarged cervical gland was removed; it was deeply infiltrated with a hemorrhagic exudate, being very dark-red in color, and extremely friable.

The pleura was adherent to both lungs by a fibrinous exudate, and so firmly attached that some difficulty was experienced in removal of the lungs.

The greater part of the lower lobe of the right lung was congested, but not entirely so, the evidences being of a lobular rather than a lobar pneumonia. The upper lobe of the left lung, while not so extensively involved, presented similar conditions. The pericardium was distended with bloody serum. The left ventricle of the heart was empty except for the presence of small chicken-fat clots, which condition also obtained in the right ventricle. The liver was congested, but presented no mottled areas on its surface, although evidences of fatty

degeneration were evident on section. The spleen was greatly enlarged, deeply congested, and friable. The kidneys were enlarged, with undue prominence of the pyramids, which were congested. There were evidences of glomerular hemorrhage under the capsule, which stripped easily.

Bacteriologic Examination.—Smears from gland, lungs and spleen showed typical plague bacilli. A guinea-pig was inoculated with a piece of lung and another with a piece of spleen, both on June 11, 1910. Both pigs died on June 16, and from them the bacillus was recovered in pure culture.

During the progress of the disease the condition of the lungs did not present the characteristics of a plague pneumonia. There was not the rapid and progressive involvement of the lungs I have found to occur in cases of plague pneumonia not treated with serum, and in which, from the involvement of a single or few lobules with a pneumonia of the bronchopneumonic type, there is in 24 or 36 hours an involvement of a whole lung (or both lungs), with transition to the lobar form of pneumonia. This failure of transition I have noticed before in cases treated by serum.

In 1905 I read a paper in which I pointed out this rapid involvement and transition from a lobular to a lobar pneumonia in from 24 to 36 hours (with the characteristic sputum: "islands of bright red blood, about the size of a quarter, floating in a copious frothy liquid") as being, to me, diagnostic of plague pneumonia.

I advanced the theory that at first the pneumonia was due to an infection through the bronchial tubes, thus producing a bronchopneumonia; but a systemic infection soon supervenes and there is a transition from the lobular to the lobar type of pneumonia.

To me it is a very interesting fact that if serum is given in pneumonic plague, before the lobar form of pneumonia has developed, it frequently happens that the pneumonia retains its lobular type throughout the course of the disease. Furthermore, in fatal cases of bubonic plague (with involvement of the lungs) it is customary for the disease to lose its bubonic type, and to assume the characters of the pneumonic type—death resulting,

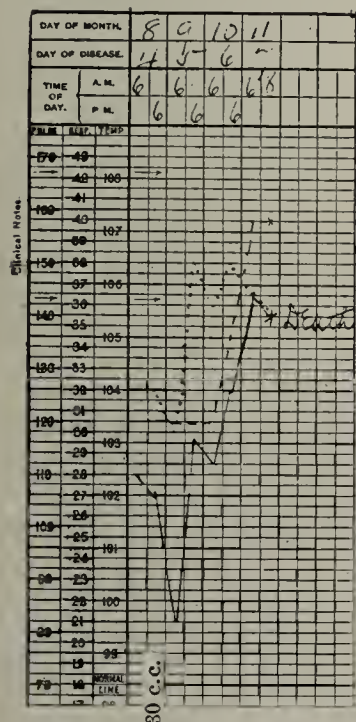


Chart 1.—Temperature chart in plague (Case 1), showing effect of serum, as described in text.

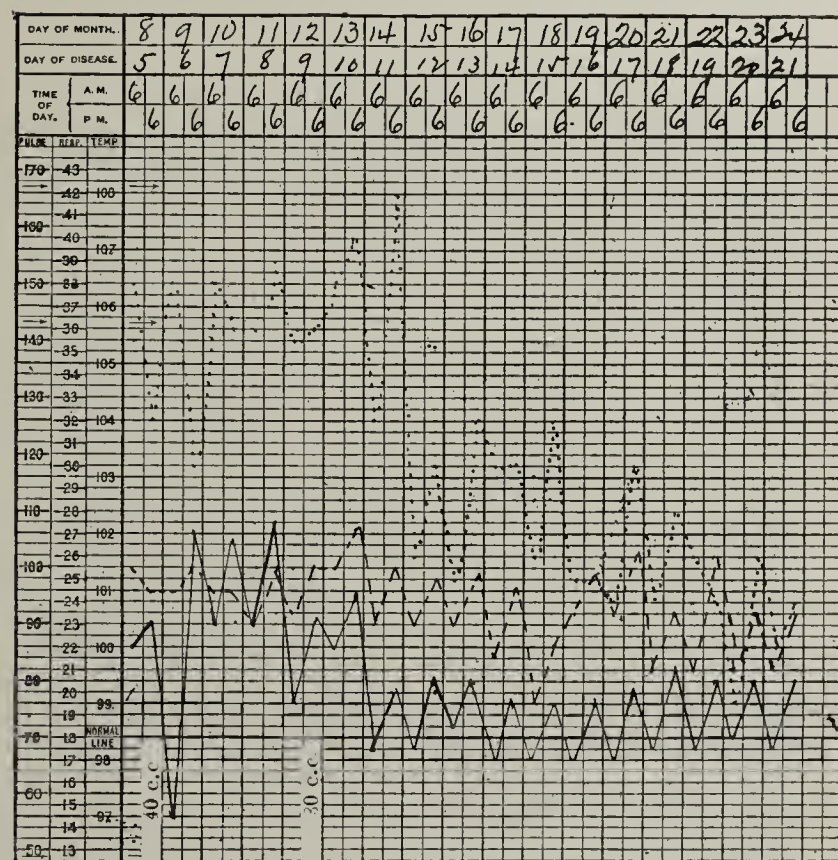


Chart 2.—Temperature chart in plague (Case 2).

as I suggested some years ago, as much from lack of lung tissue, to carry out its function, as from toxemia. When serum has been administered in these cases, however, it frequently happens that the disease, though ending fatally, retains its bubonic type, death resulting from toxemia. Both these occurrences seem to prove that the serum prevents a systemic infection of the lungs, by its action on the circulating blood.

That a patient with lung involvement should invariably die, in spite of the use of the serum, is not difficult of explanation, even when as much as 100 e.e. are administered. The lungs afford such an extensive and easy means of entrance to the circulation, for toxins, that an explanation is thus offered.

CASE 2.—Russian man, aged 45.

History.—Was first seen by me at the Japanese Hospital on June 7, where he had been taken from the Immigration Station. He presented the facies, and decubitus of bubonic plague—lying on the affected (the right) side, with the right thigh flexed on the abdomen.

Examination.—A bubo, about the size of a hen's egg, was found in the right groin, directly over the femoral muscles,

and involving the horizontal chain of glands. The bubo was very tender, and some redness and edema existed in the skin over it. There was slight hebetude and fever, 102 F. A history was given of his having been ill for several days, and of having had an epistaxis on the preceding day. The occurrence of epistaxis, with a febrile condition, has been seen by me as commonly in plague as in typhoid fever. The bubo had been aspirated twice for bacteriologic examination with negative results. The case, however, was so suggestively one of bubonic plague that Dr. Ramus and I decided it would be advisable to remove a portion of the affected gland for examination. This was done, and when taken to the laboratory, and a smear made, the specimen showed the presence of typical plague bacilli.

Experiments.—A portion was inoculated in a guinea-pig (1), which died on June 15, and the bacillus of plague was found in the spleen. A portion of the spleen of guinea-pig (1) was inoculated into a mongoos (1) and into a guinea-pig (2). The mongoos (1) died in 48 hours—on June 17—and the bacillus was recovered from its spleen. Guinea-pig (2) died on June 17, and the bacillus was recovered from its spleen. A portion of the spleen of guinea-pig (2) was inoculated in a mongoos, which died in about 8 hours, and the bacilli were recovered from its spleen.

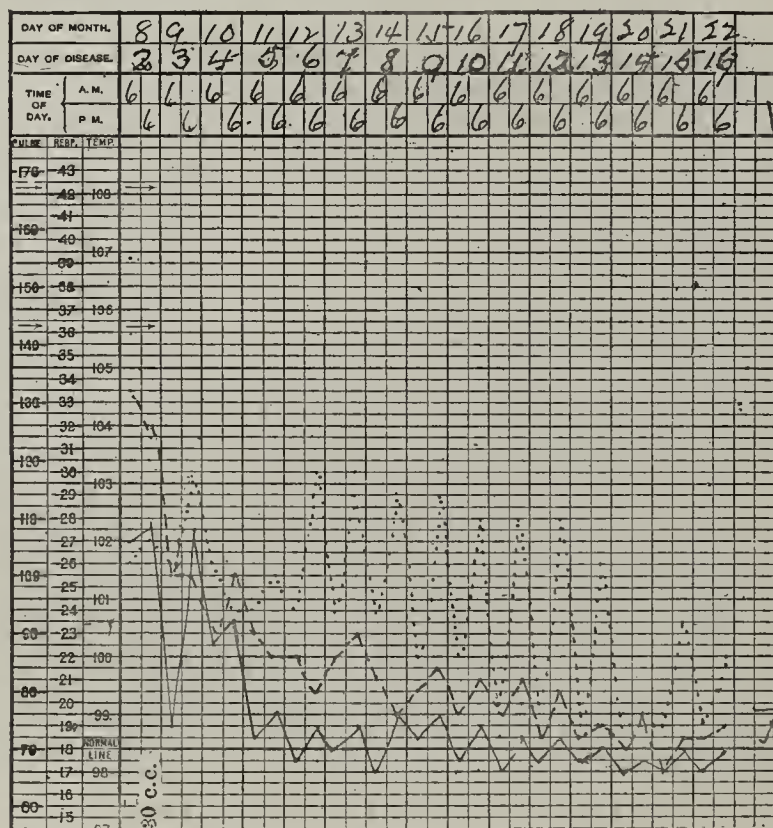


Chart 3.—Temperature chart in plague (Case 3).

Treatment.—When next seen by me, on June 8, the man's condition was considered serious—there was more restlessness and increasing hebetude, and it was deemed advisable to administer serum; 40 c.c. were injected at 6 p. m. At that time his temperature was 100.4 F., pulse 96, respiration 32.

Course of Disease.—June 9: He had a very good night, sleeping most of the time, and in the morning his temperature had fallen to 97 F., the pulse remaining at 96, but the respiration increasing to 38. There was, however, no involvement of the lung, as was feared from the increased rate of respiration. The same supplementary treatment was adopted in Case 2 as in Case 1. In the evening he had a temperature of 102 F. and pulse 98, the respiration falling from 36 to 30.

June 10: He had a good night, sleeping most of the time, but in the morning his temperature was still high, 102 F., and on the morning of June 11 the temperature was slightly higher, 102.2 F., pulse 90, respiration 36. Serum was ordered given on this date, but there was none on hand, and as it was a holiday none was procurable, so the serum was not given till the following day.

June 12: Although in the morning the temperature had fallen to 99 F., the pulse was bad, with slight dirotism and

still rapid, 94; respiration was 36, but no further involvement of the lungs was manifest. There was in addition increasing hebetude, so that the man's condition was alarming. Thirty c.c. of serum were given at 4:30 p. m.

June 13: While the temperature remained high (100.8 F.) the general condition was improved. The man was brighter, and had slept fairly well. The reaction to the serum did not take place till the succeeding morning (or about 36 hours after administration), a delay in its action which I have often observed.

June 14: The temperature fell to normal, pulse to 90, and the respiration from 42 on the night before to 26.

After this second crisis, the patient has steadily improved, and has had no adverse complications beyond some slight sloughing of the bubo.

CASE 3.—Russian girl, aged 8.

History.—This patient was seen by me at the Immigration Station, in consultation with Dr. Ramus, on June 7, 1910, at the same time as Case 1. She complained of headache and lassitude, sufficient to confine her to bed. Her temperature was 103.5 F., and she had only felt ill that morning.

Examination.—A small bulla, about the size of a ten-cent piece, was found on the inner side of the right ankle. Its characteristic smoky blue color, and surrounding areola of redness, left no question in my mind that it was the site of inoculation of plague by a flea or other agent. There was some tenderness over the glands in the right groin, although no definite bubo could be made out, simply a doughy thickening, such as occurs when a bubo is forming. Some serum was taken from the bulla and, as intimated, it was found to yield the plague bacilli as perfectly as if a pure culture.

Experiments.—A guinea-pig was inoculated from the serum, and it died on July 12, but gave in smears from glands (which were enlarged) and spleen only amorphous forms of the plague bacillus. A culture was made from the spleen, which on examination after 24 hours showed typical bipolar-staining bacilli. A second guinea-pig was inoculated with this culture on June 15 and it died on June 20, showing typical plague bacilli in specimens from the spleen.

Course of Disease.—When the patient was again seen by me on June 8, her temperature was 102 F., pulse 130, respiration 26. There was then a definite bubo in the right groin. There was increasing lassitude and headache, and she was given 30 c.c. of serum at 6 p. m.

June 9: She slept well, and her temperature had fallen to 98.8 F., pulse to 102, respiration 26. There was no involvement of the lungs. Supplementary treatment was carried out as in the other cases. In the evening her temperature again rose to 102 F., but the pulse remained at 102, respiration being 30.

June 10: There was a fall in temperature to 100.2 F., pulse 90, respiration 26. There was a slight rise that evening, but on the next morning (June 11) the temperature had fallen to 98.6 F., and thereafter continued, with remissions of half a degree, almost normal. She had no complications, beyond some pain in the bubo, but felt perfectly well after June 11. The bubo resolved without suppuration.

These three cases present so perfectly the three groups into which fall the vast majority of cases I have treated with serum, I believe their report to be of value to every physician liable to be called on to treat a case of plague.

Case 1 illustrates that group in which the serum fails to accomplish a cure; Case 2, that group in which a second injection is of value; Case 3, that group in which one injection is sufficient.

Furthermore, these three cases presented points which I considered valuable for another reason. Many authorities contend that the serum is of no value; that it is useless to administer it. It seems to me that a study of its effects on these three cases should modify such wholesale condemnation.

In the first place, it will be observed that each of these 3 cases was at a different stage of progress when the

serum was administered. In Case 1 the patient had been ill 4 or 5 days; in Case 2, about 2 days, and in Case 3, about 36 hours. Yet in each case the temperature was markedly lower on the morning after administration—falling about 3 degrees; and as each case was in a different stage of progress, this fall of temperature could not have been a pseudocrisis of the disease. Surely no one can contend that the fall was not produced by the serum; and if we have a remedy producing such a beneficial effect, is it not worthy of a trial in all cases unless the patient is moribund?

I have observed this fall in temperature in all cases in which the serum treatment has been adopted, although it may sometimes be delayed for 36 hours, even on a first administration, as on the second in Case 2.

By referring to Chart 1 it will be noticed that in Case 1, while there is a reaction to the serum, the temperature falling almost 3 degrees the morning after administration, at 6 p. m., however, there is a rise to a temperature almost a degree higher than before the serum was given; and on the second morning after a rise to 105.4 F. The rise on the second morning, after administration, has always heralded a fatal issue; the patient has failed to respond, in these cases, to as great a dose as 100 c.c. But I have never observed this failure in bubonic cases as early in their course as Case 2, unless the lungs have been involved.

In Case 2 (Chart 2) it will be noticed that while there is a rise in the evening temperatures for 3 days after administration from the temperature of the preceding morning, there is on each occasion a corresponding fall in the respective morning temperatures, so that no evening temperature greatly exceeds that on administration. But at no time did the morning temperature fall below 100 F., and, although it fell to 99 F. on the day of the second injection, yet the patient's general condition was bad. In fact, so serious was his condition that I have not the least doubt he would have died had serum not been given a second time.

I desire to again call attention to the fact that, in my opinion, the serum should be given a second time when the temperature is above 100 F. for three evenings after the first dose.

The looked-for fall after the second dose in Case 2 did not take place till 36 hours after the injection. A delay for this length of time, however, need not cause doubt as to the reaction occurring. I have repeatedly seen this time required even after a first dose.

Case 3 is an illustration of that group of cases most favorable for treatment by serum. In fact, the serum has acted similarly in all cases of uncomplicated bubonic plague which have been treated within 48 hours of its inception.

Usually on the morning after administration, but it may be delayed till the second morning, as already alluded to, there is a fall in the temperature to almost normal, in the evening a rise to almost its former height (in this case to 102 F.), the next morning a fall to a temperature about midway between the highest and lowest temperatures of the day before, followed by a slight rise (here 0.4 of a degree) in the evening, the temperature reaching within half a degree of normal on the third morning after injection, and with variations of but half a degree thereafter.

The serum used in these cases was that known as "dry serum," and was made by the Pasteur Institute. I believe that this is far superior to the liquid serum, and it may be that the liquid serum is responsible for the

poor results reported by some observers. The dry serum is difficult to dissolve if one is not familiar with it. The main point is to have a test-tube with just sufficient water to moisten its sides—no more. The dry serum is dropped from the glass capsule, in which it comes, so that the particles of the serum, which adhere readily, form a layer of only one particle in thickness on the sides of the tube. Then sufficient water is added to make the necessary 10 c.c. of serum. Heat should never be employed, but as much time taken to cause the particles to dissolve by gently shaking as is necessary. A stirring rod should not be used unless the tube is held over another vessel to catch the serum, and preparations are made to filter broken glass from the solution.

In conclusion I wish to say that I do not offer these cases as an attempt at a clinical description of plague, a disease as variable in its aspects as the fabled god Proteus. Nor do I wish to be interpreted as considering myself as entitled to acceptance as some authorities who have reported unfavorably on the use of antipest serum.

All I have aimed to do is to present the effects of the serum in these three cases, supplemented by what observations of its benefit I have made in a limited use of the remedy, in the hope that in the event of anyone being called on to treat a case of plague he will at least give it a trial—with this assurance: you can do no harm with it, and you may do incalculable good.

NOTES ON TRIFACIAL NEURALGIA TREATED BY DEEP INJECTIONS *

V. P. BLAIR, M.D.
ST. LOUIS

For the privilege of observing and treating these cases I am indebted to the courtesy of Drs. Baker, Behrens, Bliss, Boislinière, Butler, Falk, Fry, Graves, Hauck, Hoge, Kennerly, and Remme.

It is important that the surgeon who intends to treat this form of neuralgia be able to diagnose the condition when present and to differentiate it from other painful affections, which might more or less closely counterfeit the genuine tic douloureux; otherwise he will miss appropriate cases or will throw obloquy on a valuable procedure by using it under inappropriate circumstances.

A very slight acquaintance with the symptoms of the disease will exclude the possibility of not recognizing it when present. The recognition of its counterfeits is in most cases quite as simple, but may be so difficult as ultimately to baffle the most skilful and painstaking neurologists.

There were certain common features present in all of the true trifacial ties that have come under my observation. Within certain limits the clinical picture in the individual cases varied considerably, but by excluding from operation cases that varied beyond these limits, I was able to eliminate all except one, possibly two, out of a number of cases of other conditions which have been referred to me. These cases will be mentioned later. The clinical features common to all of the cases were:

1. The neuralgia was confined to the distribution of one or more branches of the fifth nerve on the affected side, but it is my belief that the exact limits of the area to which this nerve is distributed varies slightly in individuals. This belief is based on the observation of

* Read before the St. Louis Medical Society, February, 1910.

the anesthetics that have resulted from the injections. In one case the pain crossed the bridge of the nose and in two cases it extended behind the ear, but in no case did the pain extend into areas unmistakably known to be entirely innervated from other sources.

2. The pain in all cases came on in a definite spot, from which it radiated in various directions over the area belonging to the fifth nerve.

3. Whether its first intimation was a severe pain or a paresthesia so slight as to be compared to the touch of a feather, and whether in the later stages the patients had but occasional twinges, or the pains followed each other so closely as to destroy all rest and drive the sufferer almost to desperation, the pain was always, in all stages of the disease, paroxysmal. If the first twinge was severe, the patient might have thought that he had been struck or stung, but, whether severe or almost imperceptible, in all but one case it lasted but a second or a few minutes and returned—that day or the next, or in a week, a month or a year—but it returned; and the subsequent history was that the intervals between pains

for weeks or months, alternating with periods of comparative freedom.

4. When the pain returned it was in exactly the same spot, and, though it might radiate, the pain was always most sharp in the one certain place that could often be covered by the end of a lead-pencil. Later other such painful areas might develop, but they were in turn usually equally definite. The pain might come in the several spots at once, or in one or the other by turns, or play from one to the other. The pain might remain confined to the distribution of the branch over which it first appeared, or it might involve other branches or divisions successively.

5. The neuralgia was usually confined to one side, but in two of the cases the pain involved both fifth nerves, and in a third, there was a typical tic in the first division of the left fifth years after the Gasserian ganglion had been removed on the right side.

6. For the greater part the trunks and branches of the affected nerves were not tender, but in almost all cases there were spots over the distribution of the nerve, stimulation of which caused a twinge in the pain spots. The touch of a finger, a breath of cold air, the taking of food or liquids, in the mouth or swallowing, or a sudden movement, any or all of these might bring on the pain. One old lady could not let a bright light fall on the eye on the affected side without a sharp pain in a spot to the outer side of the ala of the nose. Another could not take sweet or sour things and a third suffered a supra-orbital pain whenever food touched the velum. It was pitiful to observe the extremes to which these patients would resort to avoid the stimuli that they knew would produce pain. Some of them would talk from or take food or drink in only one side of the mouth. One patient would go for days without swallowing even water, and others would not enter a room until sure all windows were closed. Some for months at a time would not wash one side of the face or brush the teeth.

7. In the older cases, though there was evidence of extreme pain during the attack, the patient seemed to have become used to it and seldom made outcry or demonstrative complaint.

8. Contrary to my previous idea that trifacial neuralgia was essentially a disease of middle or later life, it appeared in all decades from the second on. In one out of the twenty cases here considered it came on at 19, in one at 29, and one at 35 years, but in most instances it appeared between the ages of 45 and 60 years.

9. All previous forms of treatment with the exception of removal of that part of the Gasserian ganglion from which the affected branches sprung, had been but temporarily effectual.

In some cases, various forms of medicinal treatment had for a while controlled or modified the pain. Among these quinin was prominent in one case; in another, the continued use of castor oil, while in others the coal-tar sedatives were helpful.

In a large number of cases, one or a number of teeth had been extracted with but little benefit, and in most cases, with none. In five cases, excision of a portion of the affected nerve trunk had been resorted to with relief lasting from two weeks to eight months, but in all these pain returned with equal, or increase of, severity.

In four cases, injection of alcohol into the peripheral distribution of the nerves or at their superficial foramina of exit had given relief varying from a few weeks to nearly a year, and in one the removal of a piece of dead bone from the jaw had given relief for six months; but in all the pain eventually returned.

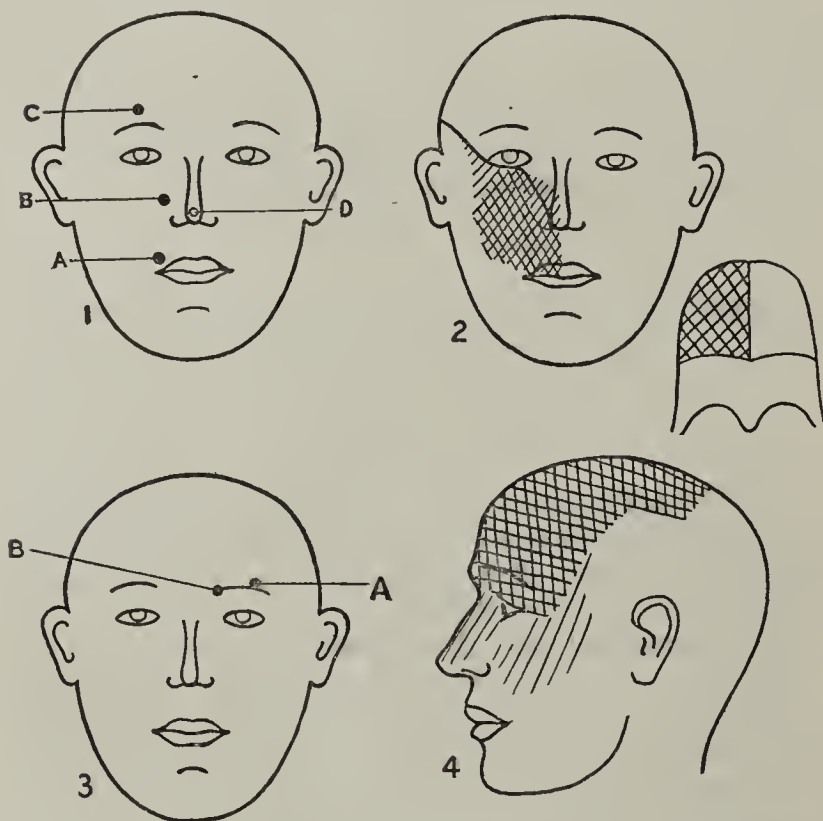


Fig. 1.—Case of woman aged 65. Pain came on at A in 1905 and at B some time in 1905 after the appearance of pain at A. Pain at A was relieved by an operation on the infra-orbital nerve in 1908. Pain came on at C in March, 1908. Touching the spot D will start pain in A and B.

Fig. 2.—Diagram of the anesthesia that resulted in subject of Figure 1 from a deep injection of the second division of the fifth nerve on May 13, 1907. In the lower right-hand corner the right half of the palate is shown. All pain, including that at C, was relieved.

Fig. 3.—Man, aged 53. Pain came on at A in 1884, and was somewhat relieved by cutting the supra-orbital nerve in May, 1908. Pain came on at B after the supra-orbital nerve was cut, in May, 1908. A painful spot appeared over the temporal branch of the orbital nerve.

Fig. 4.—Diagram of the anesthesia that resulted in subject of Figure 3 from the injection of the first and second division of the left fifth on April 26, 1909. The chart was made on April 27, 1909. It will be seen that a much more complete anesthesia was obtained over the first than over the second division. Note that partial anesthesia extended into the area of the nasal branch of the first division. There was some diplopia and dimness of vision after the operation, but it cleared up in a week.

shortened and the length and intensity of each twinge usually increased as time went on. In the exceptional case referred to the first paroxysm lasted four hours.

To the paroxysmal character was later added an irregular periodicity, which might be evidenced by the twinges being present or more frequent on alternate days or during indefinite stretches of time that might last

In sixteen cases a record was made of the time which had elapsed since the pain first came. In one it was two months, in one six months, in two it was two years, in one two and a half years, in one three years, in one four years, in one nine years, in one twelve years, in one fourteen years, in one fifteen years, in one seventeen years, in one twenty-five years. In one patient it had started twelve years previously on one side, and he had had it for one year on the other, while another had had it for fifteen years on one side and thirty on the other.

10. The pain might have come on, in the first place, with or without apparent cause, but removal of the apparent cause but temporarily controlled the pain. In one case it was associated with a necrosis of the mandible; in two, with pulp-stones, and in three cases with a dental caries. One patient gave a history of a doubtful local cause in a severe blow on the nose received three years previously. Some of the cases seemed to be associated with some more general disturbance. In one there was a marked auto-intoxication, in one malaria may have been the cause, and a third was in a rheumatic individual. Two of the cases were associated with a high blood-pressure. In the others no assignable cause could be found.

From the local findings and the clinical histories of these cases, the following conclusions would seem tenable in regard to the diagnosis:

If pain comes on suddenly in one spot on one branch of the fifth nerve; if it is paroxysmal and returns always in that spot, whether or not other spots on the same or other branches of the nerve are later involved; if subsequently it not only comes on spontaneously, but can be elicited by certain definite stimuli peculiar to the individual case; and if with the pain there are no primary anesthetics over the involved nerve area and no general tenderness of the trunks of the involved nerve, it is a genuine major trifacial neuralgia. This does not necessarily exclude all cases that do not present this exact picture.

In fifteen of the twenty cases of true tic on which this review is based, the patients were subjected to deep injections, the object being to reach one or more of the divisions of the fifth nerve just at the point where it emerged from the cranial cavity. The other five were not subjected to injection, partly for the reason that when I first took up this study I was rather timid about putting this procedure into operation and did so only when urged by the patient and the physician; and later, even since becoming convinced of the efficacy and comparative safety of the operation, I have encountered one case that was so mild that I did not encourage the patient to have the injection made, and in two cases that were rather recent, I suggested further trial of other measures. In six out of the fifteen that were subjected to injection, only the third division of one fifth nerve was injected. The second and third nerves were injected in three patients; the first and second were injected in four patients; the first alone was injected in one patient, and in one patient the second and third division on one side and the second on the other side were injected. The fluids injected varied, but in all alcohol was the basis. At first I used 70 per cent. alcohol, later 70 per cent. alcohol with cocain. Then I used the formula recommended by Dr. Patrick, of Chicago, but in the later cases I have used for the second and third division a mixture of 2 per cent. novocain, 6 per cent. chloroform, 22 per cent. water, 70 per cent. alcohol, and for the first division the same formula with but 2 per cent. chloroform. This reduction of chloroform is in deference to

the optic nerve. The quantity of the fluid injected was about 2 c.c. for each nerve; in some cases a less amount sufficed. The locating of the nerve trunks depends on the ability to recognize with the point of the needle certain bony points on the base of the skull and the information furnished by the patient that the nerve is reached. To do this, I use a needle that is straight, strong and inflexible, and graduated in centimeters.

Before undertaking to perform the operation upon the patient, I made use of the opportunity I had of making experiments on the cadaver when working in the anatomic laboratories at the Washington University. These experiments consisted in seeking the nerve trunks by various routes before the students dissected the head, and injecting a little blue gelatin at the supposed site of the nerve and then in observing the accuracy of the injection later when the heads were dissected. These experiments were carried on for three dissecting terms. In the first two patients on whom I operated, in deference to precedent, I attempted to follow the French method of injecting from within the mouth. In this

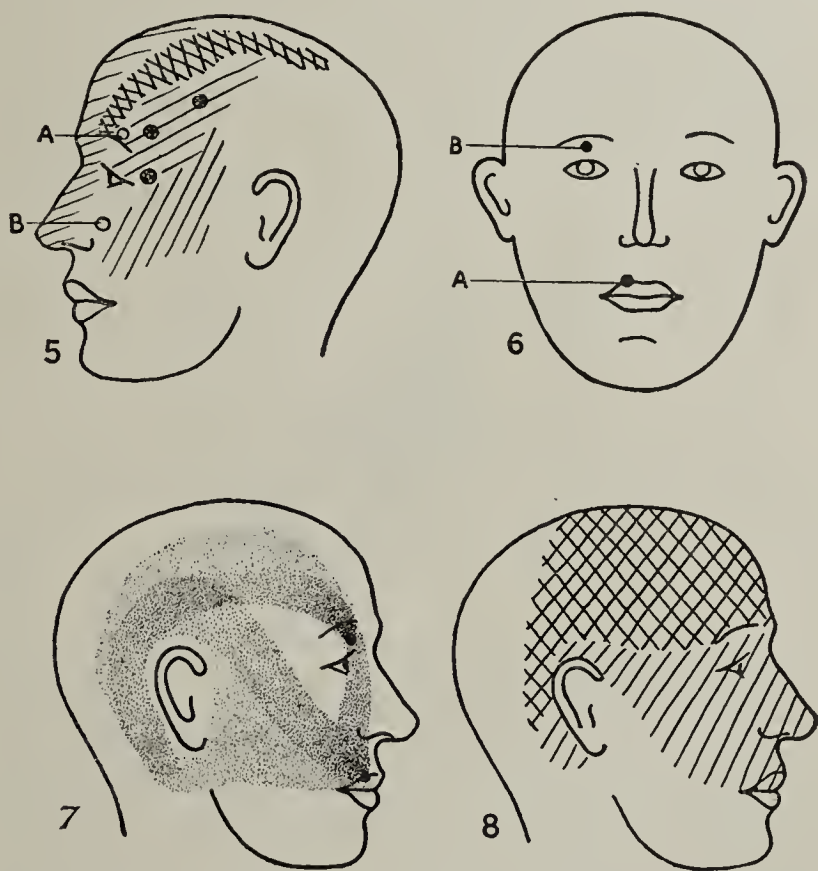


Fig. 5.—Diagram of the anesthesia in subject of Figures 3 and 4 on May 1, 1909, four days after the injection. In October, 1908, the whole of the frontal nerve had been removed back to the sphenoidal fissure, which probably accounts for the streak of absolute anesthesia that has persisted. The other anesthetic spots are probably due to some damage to the nerve fibers during injection. Spots A and B were tender, owing probably to the beginning of the return of protopathic sensibility. The pain in this case returned in one month, but not as severely as before operation. The anesthesia had not entirely disappeared six months after the injection.

Fig. 6.—Man, aged 68. Pain came on at A December, 1906. Since May, 1909, touching B causes exquisite pain.

Fig. 7.—Diagram of the direction and distance that the pain radiated from the pain spots in subject of Figure 6. The fact that the pain radiated behind the ear tended to cast some doubt on the diagnosis before the injection was made.

Fig. 8.—Diagram of the anesthesia in subject of Figures 6 and 7 resulting from a deep injection into the first and second division of the fifth nerve on July 2, 1909. From the anesthesia it will be seen that the area behind the ear is supplied in this case by the first division of the fifth nerve, which accounts for the fact that the pain radiated behind the ear in this case. This is not the average distribution.

procedure the needle enters to the outer side of the last molar, the external plate of the pterygoid process is followed until its junction with the under surface of the great wing of the sphenoid is encountered. By working the point of the needle backward, the foramen ovale, which gives exit to the third division, is reached. By

working forward, the sphenomaxillary fossa, the foramen rotunda and the sphenoidal fissure, which give exit to the second and first division, are found. On the first patient, who had an involvement of the third division, I succeeded, after three attempts made at intervals of a week, in getting a complete anesthesia over the distribution of the nerve and of giving complete relief from the pain. It is possible that in this case I reached the Gasserian ganglion.

In the second patient, who had an involvement of the second and third division, I succeeded in reaching the third division, but after two unsuccessful attempts at reaching the second, the patient left me in disgust and I then abandoned the intra-oral route for the much easier external route, which has the further advantage that the asepsis is surer.

In the external route the needle enters the cheek a little below the zygoma, and passing through the sigmoid notch of the mandible, the pterygoid process is encountered and its junction with the great wing of the sphenoid recognized. By working backward the third division is reached, and by working forward the second is found either in the sphenomaxillary fossa or as it courses around the back part of the maxilla.

The first division is injected by making the needle enter just below the external angular process of the frontal bone and by following along the malar maxillary

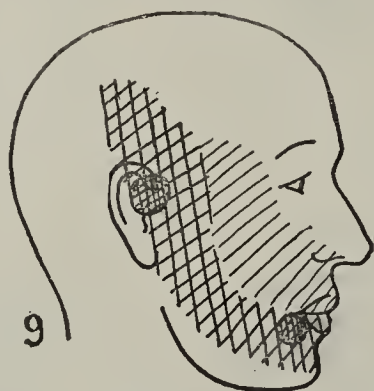


Fig. 9.—Diagram of anesthesia after injection in another case of many years' duration. The second division was injected on March 2, 1909, with almost total anesthesia resulting. The third division was injected March 24, 1909. It was charted on March 25, 1909. It will be seen that the anesthesia to pain and touch over the second division has considerably lessened between the time of injection and the time of charting. At the time of charting it was found that on the right side, the lingual and labial surfaces of the lower gum, the superior, inferior and lateral surfaces of the anterior two-thirds of the tongue, and the inner surface of the cheek below the occlusal line, were completely anesthetic to touch, pain and temperature, and sense of taste was lost in the anterior two-thirds of the right half of the tongue. The whole of this area was completely anesthetic to heat and cold. This anesthesia persists longer than does the anesthesia to touch and pain. The anesthesia had not entirely disappeared nine months after the injection. Pain had persisted for fifteen years before injection and had not returned two years after injection.

frontal suture for a distance of 3 or 3.5 cm., where the outer end of the sphenoid fissure is reached. It will be remembered that the optic foramen is above the inner end of this fissure. When the nerve is first touched by the needle, and when the first few drops of the fluid is injected, the pain is great, but no worse than an ordinary twinge of a severe neuralgia. When novocain is used in the injection fluid, severe pain usually very quickly ceases and the rest of the injection is very much less painful.

The effect of the successful injection was in all cases an immediate complete cessation of the pain, with or without a more or less complete anesthesia over the area of distribution of the nerve, and in most cases more or less paresthesia in the form of jerking or crawling sensation in the skin or mucous membrane. This paresthesia

is rather persistent, wearing off in from six to nine months in most cases. It is not objected to at all by normal individuals, but I could well imagine that a neurotic person might magnify it into as great an evil as the original pain. This is one reason why I dislike to give injections in mild cases.

In summing up the late results, I shall divide the cases into two classes: First, those in which the injection was followed by a demonstrable anesthesia, and second, those in which it was followed only by a subjective feeling of numbness. There were twelve of the former and in eight of these the patients had no return of the pain whatsoever, when last heard from at periods of three weeks, three months, six months, seven months, eight months, ten months and three years. The latter patient, whom I know to have gone three years, had suffered intensely for nine years and had become a wanderer but has since settled down comfortably.

Of the four patients who had an anesthesia following the injection, but in whom the pain afterward returned, one had complete relief for a month when the pain returned with full intensity, but the paroxysms have not been nearly so frequent.

In one the pain returned in three weeks but, to quote the patient's own words, "it is not half so severe as it was" and not nearly so frequent. One has had very slight occasional returns, and the fourth, in whom I was permitted to inject only one of two painful trunks, had already learned the use of morphin; she has been injected by another surgeon, and now has a syringe of her own, but not for alcohol.

The anesthetics and the paresthesias gradually disappeared. There were three patients in whom a subjective numbness, but no demonstrable anesthesia, followed the injection. From two of these I have not received reports, but one of them, at least, I am sure would have returned for further treatment had she again suffered. The third patient reported to me ten months afterward with very slight occasional twinges, which caused her little inconvenience.

Of course this procedure cannot be absolutely free from danger, but it is probably less dangerous than a Gasserian ganglion operation, and, from some cases that have come to my notice, quite as successful as some of the latter operations have been.

The injection causes a real sufferer little extra pain or inconvenience and many will submit to it who have refused the Gasserian ganglion operation. At least it seems worthy of a trial before resorting to the latter. The only ill effects I have observed are the paresthesias and a soreness lasting for several days. In two cases there was diplopia and dimness of vision, lasting less than a week, and in one case there was an orbital hemorrhage, which had been diffused by the next day and never gave any subjective symptoms.

A study of the histories of these cases and of the results of the injections seems to warrant the conclusion that the more definitely a paroxysmal pain has been confined to certain spots, especially on the second and third divisions, the greater is the promise of relief from deep injections.

Before closing, I wish to cite two cases which are not included in the above series, but which give point to some of the conclusions:

CASE 1.—A man over 60 years of age suffered intensely with a pain in one spot on the tragus of the ear for four months. Since the pain came on it had been a steady ache with no paroxysms. The latter feature gave rise to doubt

whether or not it was a true tie, but I injected the third division in hopes of giving the patient relief and obtained a definite anesthesia, including the pain area, without giving any relief. The mouth was examined at this time, but no local cause for the pain was found. Six months later the patient returned with pain in the same spot, radiating to the top of the head. Examination of the mouth revealed an almost hidden ulcerating carcinoma, under the side of the tongue over the lingual nerve. Evidently the injection had not reached the part of the trunk from which the lingual springs.

CASE 2.—This patient was seen with Dr. Fry since these notes were written. A woman of 50 years had a paroxysmal neuralgia of six months' duration, which came on in the second division, but which very soon involved the first and third divisions very generally. There was subjective numbness, disturbances of taste, odd paresthesias, an inability to locate exactly the pain and tenderness over the nerve trunks. On account of the general distribution of the pain, the usual sensory disturbances and the inability of the patient to locate the pain definitely, a very guarded prognosis was given before an injection was made into the second and third divisions of the nerve. This injection was made eight days ago, and, in spite of a very definite anesthesia in the second division, the pain continues in the anesthetic area. Since then the paroxysms in the second and third divisions have been less severe, but now the patient is complaining of the paresthesias as much as she did of the original pains, and has some general pains in the abdomen.

The cases in this series were selected because of the opportunity there had been of studying each. Some of them were selected for study because of the very accurate and complete notes that were made on them before and after injection, and others because they illustrate special points. In the larger series that goes to make up my experience in this line nothing was observed that is at absolute variance with the observations or conclusions here set forth.

Metropolitan Building.

A REPORT OF THE TUBERCULOSIS SITUATION IN PENNSYLVANIA IN 1909

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PHILADELPHIA

INTRODUCTION

The subject of this paper is discussed under two heads: first, the extent of tuberculosis in Pennsylvania in 1909, and second, the measures in operation in our state last year to control the disease. In reviewing the control measures in force in Pennsylvania last year, it should be borne in mind that the antituberculosis movement in general has been wholly experimental in nature. It has not proceeded from well-determined principles which have been applied from the first to the guidance of effort, but rather it has had historical development. It is impossible to make any categorical statement as to the relative value of preventive measures; the body of experience is not yet sufficiently large to warrant that. We have, however, as the result of ceaseless and varied experimentation, the knowledge of what has practically worked for the prophylaxis and cure of tuberculosis, and the general tendency of the movement is the only standard that can be applied to the measurement of local effort.

I. THE EXTENT OF TUBERCULOSIS IN PENNSYLVANIA IN 1909

There were 111,062 deaths from all causes in Pennsylvania last year. Of this number, 10,122, or 9 per cent., were from tuberculosis.

1. *Where the 1909 Deaths from Tuberculosis Occurred.*—A study of the tuberculosis death-rate in the various counties of our state in relation to the proportion of the inhabitants of each county living in cities of 8,000 or over, discovers the fact that those counties having the greatest proportion of urban population have the highest mortality from tuberculosis; while conversely, the rural counties as a rule have a much lower death-rate.

Potter, for example, is a sparsely settled, rural county. The death-rate from tuberculosis was less than 6 in 10,000. Westmoreland is another entirely rural county, but more thickly settled than Potter. The death-rate in Westmoreland was 9.5. In Berks and Erie counties, about evenly divided in character between urban and rural, the tuberculosis death-rates were respectively, 10.8 and 9.9. In all of these counties the rate is below the rate for the state; while Allegheny and Philadelphia counties, with population, in the one case 79 per cent. and in the other all urban, sustained a mortality

TABLE 1.—TUBERCULOSIS DEATH-RATE IN PENNSYLVANIA

	Population	—All deaths—		T. B. deaths		T. B. deaths	
		No.	%	No.	%	per 10,000	
Total	7,137,315	111,062	100	10,122	100	14.1	
Urban	3,387,401	54,265	47.6	5,676	56	16.6	
Rural	3,749,914	56,797	52.4	4,446	44	11.6	

TABLE 2.—DECLINE OF TUBERCULOSIS DEATH-RATE IN PENNSYLVANIA

	Pennsylvania		New York		Massachusetts		Maryland	
	All	T.B.	All	T.B.	All	T.B.	All	T.B.
1906	165	15.5	170	20.0	165	18.3	157	20.4
1907	164	15.3	175	19.7	174	18.3	161	20.0
1908	157	14.3	162	19.4	165	17.2	154	19.7
1909	157	14.1	160	18.6	161	16.8	151	19.8
Rate of decline	8	1.4	10	1.4	4	1.5	6	.6

from tuberculosis of 14.8 and 22.1, both of which are above the state average.

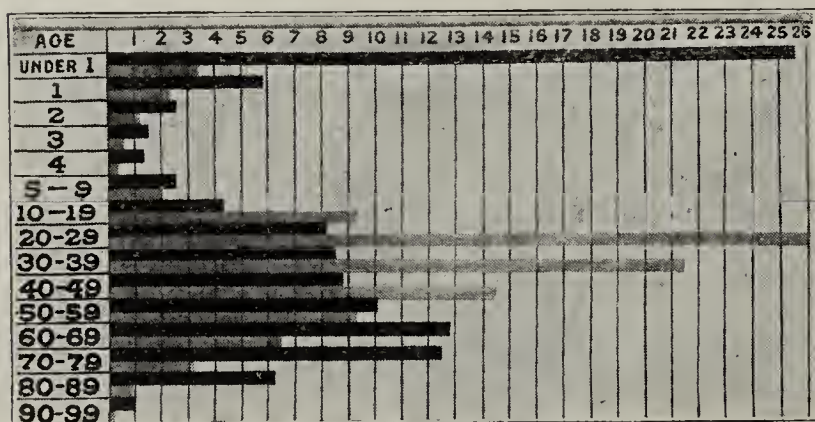
From the first table it will be seen that the state death-rate from tuberculosis in 1909 was 14.1; the urban 16.6 and the rural rate 11.6. Rural districts with over 52 per cent. of Pennsylvania's population had but 44 per cent. of the deaths from tuberculosis; and 56 per cent. of the deaths occurred in cities representing less than 48 per cent. of the state's population. The preponderance of deaths from tuberculosis in the urban parts of Pennsylvania is further emphasized by the state's two largest cities. Philadelphia and Pittsburg with 29 per cent. of the population show 40 per cent. of all tuberculosis deaths in 1909.

What we have found with respect to the greater death-rate from tuberculosis in Pennsylvania cities than in the rural districts is true of the United States generally and also of England, Scotland and other countries.

2. *At What Age Tuberculosis Killed.*—The diagram exhibits by age periods the number of deaths from tuberculosis in Pennsylvania in comparison with the number of deaths from all causes. The numerals at the top of the chart represent thousands in the case of total deaths, and hundreds for tuberculosis. Thus there were over 25,000 deaths from all causes under one year of age, and over 2,500 deaths from tuberculosis between the ages of 20 and 29. By far the greatest single period of general mortality was under one year of age;

from tuberculosis it was between the ages of 20 and 29; 64 per cent. of the deaths from tuberculosis took place between the ages of 20 and 50, while but 22 per cent. of the general mortality for the year occurred between these ages. Therefore, since tuberculosis in practically seven cases out of ten took human life at precisely that period when it represents economic surplus, it must be regarded as of all preventable diseases the one which entailed most serious economic waste. Applying Prof. Irving Fisher's estimate of \$1,700 as the average value of the lives sacrificed by preventable diseases to the number of tuberculosis deaths in Pennsylvania last year, we find that our loss in potential earnings was \$17,207,400.

3. *Is the Tuberculosis Death-Rate Declining in Pennsylvania?*—Unfortunately, statistics for our state are not available further back than 1906, but let us see what took place during the four years for which we have the necessary data. From Table 2 it will be seen that the general death-rate for Pennsylvania declined between 1906 and 1909 from 16.5 to 15.7. In other words, eight less persons per 10,000 died at the end than at the beginning of the four-year period. The decline from tuberculosis has been proportionately greater—as fourteen is to eight. But, it appears that substantially the same thing happened in New York,



Number of deaths from tuberculosis in comparison with number of deaths from all causes, at various ages. The solid black horizontal bars indicate deaths from all causes; the gray bars, deaths from tuberculosis. The numerals at the top represent thousands in the case of total deaths, and hundreds for tuberculosis.

Massachusetts and Maryland, in all of which states the general death-rate declined, while the decline from tuberculosis was somewhat greater, save in the case of Maryland, where the decrease from tuberculosis did not exceed the general decrease. Therefore, it would seem that whatever causes operated to produce the decline in Pennsylvania were also operative in the other states mentioned.

4. *Is It to be Supposed that the Decline in the Tuberculosis Death-Rate Has Been Caused by Human Effort, Directed Specifically Against the Disease?*—It would be rather absurd to attempt to draw conclusions from a study covering so brief a period as four years; but for the United States for a twenty-seven-year period, (1880-1907) the rate declined from 326.2 to 183.6 per 100,000 living, and for Massachusetts during a term of thirty-five years (prior to 1905) the decline was from 347 to 156; while for England and Wales the rate dropped in forty-six years from 348.7 to 172.2. Dr. Arthur Newsholme associates the declining death-rate from tuberculosis in England and also in Germany exclusively with the increase in facilities for segregating advanced cases. Dr. Robert Koch, too, held this view. In our country, however, provision for segre-

gating the advanced cases, has been, until recently, so meager as to be almost *nil*. The declining death-rate from tuberculosis antedates by many years the spread of agencies for segregation; and since the establishment of such agencies the decline can not be said to have been greatly accelerated. It is therefore probably fair to conclude that only to a very limited extent has human effort to control tuberculosis actually operated to reduce the death-rate. This should be qualified, however, by the statement that the very marked reduction in the death-rate from tuberculosis in certain cities in the United States—notably in New York city—is probably due in no small degree to the facilities for segregating intensely infectious cases. In Philadelphia last year, 1,074 deaths—nearly one-third of all deaths from tuberculosis—occurred in institutions, and it is natural to suppose that the segregation, even though brief, had an important effect in eliminating infection.

5. *Morbidity from Tuberculosis.*—The amount of sickness as well as the number of deaths is an index to the extent of disease. What, then, was the morbidity from tuberculosis in Pennsylvania last year? Since tuberculous disease is one of which notification of the public health officials is required, it might be supposed that to learn the number of persons so afflicted, one had but to consult state or local morbidity statistics. Actually, however, this will not yield the desired information. It may be said at once that no report on morbidity statistics for Pennsylvania later than 1907 has as yet been issued. In 1906, however, 5,234 cases of tuberculous sickness were reported, and in 1907 6,109 cases, or an increase of 16 per cent. were reported; and yet in 1907 there were over 4,700 less cases reported than there were deaths from the disease. For that year, tuberculosis was the only communicable disease of which the cases reported numbered less than the deaths. The reasons advanced by the state registrar for this lamentable discrepancy, are: the protracted character of the disease, the tendency of the afflicted to dispense with medical service, the frequent shifting of habitation, the fear of restriction as regards habits and employment, and the failure of a large part of the medical profession to grasp the vital importance of registration. It needs but the simple statement—not proof—that without adequate registration all efforts to control tuberculosis are seriously lamed. In Philadelphia last year 5,288 cases of tuberculosis were reported. In Pittsburg the house-to-house canvass by the tuberculosis commission of about two-thirds of the city spotted nearly twice as many cases as were reported to the health authorities during the year. Williamsport had no registration earlier than 1908. Since then only 83 cases have been reported; but there were, a few months ago, 221 cases under treatment at State Dispensary, 33 in that city, and the health officer estimates that there are 500 living cases in the city.

On the commonly accepted supposition that for each death from tuberculosis there are at least three other persons sick from the disease, there were probably no less than 40,000 cases in Pennsylvania last year.

II. PENNSYLVANIA'S EQUIPMENT AGAINST TUBERCULOSIS

6. *Number of Beds in Pennsylvania in 1909 for the Treatment of Tuberculosis.*—Turning now to a review of the state's equipment against tuberculosis, it will be seen from Table 3, representing Pennsylvania tuberculosis hospitals and sanatoriums, that there were in 1909, nineteen such institutions, with a total bed capacity at

the beginning of the year of 1,736, which was increased by 258 beds before the year's close. Of the 1,994 beds, 756 were provided by the state at Mont Alto, and 490 by the cities of Philadelphia and Pittsburg. In ten philanthropic sanatoriums (by which is meant institutions either partially or wholly charitable in foundation, although patients may be pay or free) there were 592 beds. Five of these agencies are in or near Philadelphia, and one each in Pittsburg, Scranton, Oil City, Bradford and White Haven. Six sanatoriums conducted for profit had 156 beds. The number of patients treated by each class of institution and the average length of patients' stay is also shown. Three state hospitals for the insane provided an additional 131 beds.

The 100 increase in municipal beds was in Philadelphia, while the largest increase for the year was in the number of state beds, due to the expansion of the South Mountain Sanatorium at Mont Alto. The present size

TABLE 3.—PENNSYLVANIA TUBERCULOSIS HOSPITALS AND SANATORIUMS IN 1909

	No.	Capacity	Increase	Treated	Average stay (mos.)	%
State	1	598	158	1,089	4 1/2	38
Municipal	2	390	100	2,286	1 1/2	25
Philanthropic	10	592	...	1,725	4 1/4	29
Private	6	156	...	507	3 1/3	8
Total.....	19	1,736	258	5,607	3 2/5	100

TABLE 4.—BEDS FOR TUBERCULOSIS IN PENNSYLVANIA, NEW YORK, MASSACHUSETTS, OHIO AND INDIANA

	State		County		Municipal		Philanthropic and private		Total
	No.	%	No.	%	No.	%	No.	%	
Pennsylvania..	756	38	.....	..	490	25	748	37	1,994
New York	350	5	1,016	15	2,781	40	2,776	40	6,923
Massachusetts..	1,100	44	.....	..	587	23	778	33	2,465
Ohio	220	17	276	22	583	47	173	14	1,252
Indiana	100	32	40	13	52	16	120	39	312

TABLE 5.—ESTIMATED COST OF BUILDING AND MAINTAINING COUNTY HOSPITALS IN CERTAIN COUNTIES IN PENNSYLVANIA

County	Population	T. B. deaths	Beds needed	Estimated cost	Maintenance
Adams	35,305	47	25	\$12,500	\$11,406.25
Bucks	71,650	111	60	30,000	27,375.00
Cambria	135,606	157	80	40,000	36,500.00
Cameron, Elk and Potter	85,225	50	25	12,500	11,406.25
Delaware	110,826	195	100	50,000	45,650.00
Lackawanna *	111,265	104*	55	27,500	25,093.75
Westmoreland	198,059	190	100	50,000	45,650.00

* Exclusive of Scranton.

of Mont Alto, 756 beds, makes it the largest state tuberculosis sanatorium in the country. Massachusetts has 1,100 state beds but they are divided among five institutions, the largest of which has not more than 350 beds. In Connecticut the tuberculosis commission pointed out the inadvisability of establishing institutions of more than 150 beds each; and Prof. Karl Petren of Sweden regards a sanatorium of 100 beds as a large institution.

There were but 778 free beds for advanced cases in the state last year. Pennsylvania's total equipment in hospital and sanatorium beds for the tuberculous, represents a provision for institutional treatment of less than 20 per cent. of the number that died of the disease in 1909. New York had bed provision for over 42 per cent. of all 1909 deaths.

7. *Pennsylvania in Comparison with Other States in the Number of Beds for Tuberculous Patients.*—Table 4 is a comparison of the number of beds for tuberculosis in Pennsylvania with the number in New York, Mas-

sachusetts, Ohio and Indiana, together with a classification on a percentage basis of the proportion of the beds in each state, under state, county, municipal or philanthropic control. As has already been stated, Pennsylvania had 1,994 beds, and it will be seen that New York state had considerably more than three times that number. Massachusetts had 2,465, Ohio 1,252 and Indiana 312 beds. The figures exhibiting the proportion of each class of beds for the various states are of especial interest. It will be seen that 38 per cent. of Pennsylvania's beds were under state control, 25 per cent. were municipal beds, and the balance philanthropic or private. In New York only 5 per cent. were state beds. Three times that many beds were in county institutions, and the remainder were equally divided between municipal and philanthropic. The suburb equipment of New York City, of course, greatly swelled the state total of municipal and philanthropic beds. Massachusetts had both numerically and proportionately the largest number of state beds. The figures for Ohio and Indiana speak for themselves. It should be noticed in passing, however, that in both of these states, county beds furnish no inconsiderable proportion of the total equipment.

8. *Tuberculosis Dispensaries.*—The number of dispensaries for treating tuberculosis in operation in Pennsylvania in 1909, was 123—113 state dispensaries, and ten others. Eight of the state dispensaries were added, and two dispensaries of private foundation were closed during the year. Twelve of the dispensaries were in Philadelphia, and seven in Allegheny County. The remainder, all health department dispensaries, are scattered throughout the state, at least one in each county. In this respect, the dispensary situation in Pennsylvania is unique.

Last year 22,084 patients were treated—16,321 in the state dispensaries, and 5,763 in other dispensaries. Milk (1,402,000 quarts) and eggs (190,600 dozen) were given out through the state dispensaries, and 106,600 quarts of milk by all other dispensaries. There was a tendency on the part of the private dispensaries to diminish or entirely to eliminate the supply of milk and eggs to patients. The distribution on the part of the state dispensaries, on the other hand, was greatly in excess of 1908. There were 187 physicians and 110 nurses in the state dispensary service on Jan. 1, 1910.

On account of the dispensaries provided by the health department, Pennsylvania has a far greater number of dispensaries than any other state. New York state, including New York city, has but fifty, Massachusetts seventeen, and the number is even less in other states. Delaware is the only other state besides Pennsylvania having tuberculosis dispensaries under state control. Some consideration was given in Massachusetts to the advisability of establishing dispensaries under the control of the state, but the abandonment of the idea was strongly urged on the ground that the dispensary, essentially a local agency, should be under local control. The local health boards were held to be the proper agencies to conduct dispensaries. The special tuberculosis commission in Connecticut also held the dispensary to be without the sphere of state responsibility.

9. *Tuberculosis Classes.*—If my source of information is reliable, there were but two tuberculosis classes in Pennsylvania in 1909, both in Philadelphia. There were formerly four such classes, but two had been discontinued prior to last year. The Presbyterian Hospital class numbered 130 and the University of Pennsylvania class twenty members. Physicians were in charge

of both classes, a nurse aiding in the work of the former class, and a social worker from the University of Pennsylvania assisted in the university class work.

10. *Antituberculosis Associations.*—Of antituberculosis associations, there were besides the state society, fifteen local societies. Three more have been added since 1909 as a result of effort which had its beginning in that year. A variety of work was undertaken by these societies. The Berks County Tuberculosis Society founded the Neversink Mountain Sanatorium as a result of a remarkable campaign which culminated in the autumn of 1909. The Pittsburg League maintains a hospital, a dispensary, a farm for cured patients and patients with arrested tuberculosis, an open-air school and a research laboratory, besides doing educational work which will receive later mention. The Scranton Society maintains West Mountain Sanatorium, which cared for fifty-four cases last year. The Wyoming Valley society during the summer of 1909 cooperated in a better-milk campaign, to which is attributed the 41 per cent. reduction in infant mortality which vital statistics of Wilkes-Barre show took place last year.

Several of the societies supplemented the work of local dispensaries by furnishing food, clothing, rent, etc., to dispensary patients, or by paying the railroad fare of patients to sanatoriums. Efforts to abate the spitting nuisance also formed part of their activities.

Without critical intent, it may be said that if some of the local societies concentrated on preventive work, it would probably be productive of more lasting results than has some of the work in which they have engaged in the past.

During the closing months of 1909, the Christmas stamp sale directed by the state society yielded a fund of over \$12,000. The major part of this was used locally as a stimulus to antituberculosis work.

11. *Educational Work.*—The antituberculosis propaganda should spread in three directions: to the public; to the patient; to the profession. Last year the educational work of Pennsylvania was directed particularly at the public, and more particularly at the child in the school. The thousands of patients of sanatoriums and dispensaries were, of course, instructed, both by printed literature and by oral advice from nurse and physician, and this educational process was undoubtedly of great preventive value.

The health department by lectures and its exhibit, which was constantly itinerant throughout the state, estimates that it reached 210,000 persons last year. Many of these were school children. The state antituberculosis society in addition to its work of organizing and directing local effort, distributed over 150,000 pieces of literature, treating of personal hygiene and preventive measures. Its exhibit and lectures reached 102,000 persons, 80,000 of whom were Philadelphia school children, and 7,000 factory employees. In cooperation with the national association, fortnightly news articles were supplied to over 250 Pennsylvania newspapers. In Pittsburg the Tuberculosis League not only provided lecturers for the schools, but issued booklets on tuberculosis, especially adapted to the respective needs of pupils and teachers.

Pennsylvania was surpassed only by New York in the amount of literature distributed, and the number of patients treated.

12. *Legislation.*—The following tuberculosis legislation was enacted last year: An act of May 11, 1909 to provide "For the further protection of the public health

by prohibiting spitting in public places" was passed by the Pennsylvania legislature, after a propaganda which had been initiated by the Pennsylvania Society for the Prevention of Tuberculosis. A test of the law was subsequently made by the arrest of an offender. The conviction of the violator indicates that the law will be upheld by the courts.

In 1909 legislative appropriations subsidized five charitable tuberculosis agencies. The sum of \$94,500 was devoted to this purpose, as against \$366,500 to seven agencies in 1907. Two million dollars was appropriated to be used by the State Department of Health for two years' tuberculosis work, as against \$1,000,000 in 1907. The appropriation in 1909 leaves the expenditure of the two million to the discretion of the commissioner of health, subject to the approval of the governor.

Many states passed important tuberculosis legislation in 1909. A hasty survey of a few representative acts will serve to indicate the attitude of other states in the administrative control of tuberculosis. New York, Ohio, Minnesota and Connecticut all passed laws in 1909 providing for the establishment of county hospitals for consumptives. The New York law authorizes boards of county superintendents to erect, equip and maintain county institutions, giving power to levy taxes for this purpose. Residents of the county suffering from tuberculosis, or of other counties (on compliance with certain conditions), are eligible for admittance. The cost of maintaining indigent patients is chargeable to the county. Wherever possible, patients or legally responsible relatives are required to pay, but not to exceed the average *per capita* cost of the patient's support. With minor differences the laws of Ohio and Minnesota are the same in effect. The segregation (in county infirmaries) of persons suffering from pulmonary tuberculosis, is mandatory in Ohio; and both states provide for counties uniting to establish such institutions. The principal difference in Connecticut is, that the state bears the cost of building and equipping, and shares in the cost of maintaining patients.

13. *Significant Features of the Year's Work.*—As has been said, \$2,000,000 was appropriated in 1909 for tuberculosis work. In no other state has such an immense sum been set aside for tuberculosis purposes. The appropriation of \$1,000,000 a year for tuberculosis was a momentous event in the history of the movement, and the expenditure of this fund to control the disease constitutes an experiment which is being watched with keen interest.

Of municipal activities the Pittsburg Tuberculosis League's effort to secure a city tuberculosis plan is perhaps the most significant. A municipal tuberculosis commission was appointed, and the result of the investigation of that body made clear the need of coordination of the work of Pittsburg's tuberculosis agencies; of the centralization of the work in the board of health; and of hospital provision for indigent cases. A house-to-house canvass of a large portion of the city discovered over 4,000 suspected cases, in 73 per cent. of which the patients were in need of aid or instruction. The subsequent effort to secure a \$250,000 bond issue for a tuberculosis hospital unfortunately failed.

In Berks County the founding of the tuberculosis society, the raising of a fund of \$18,000 and opening of the Neversink Mountain Sanatorium, caring for twenty-one patients, was all accomplished in a year. The institution is designed especially to care for Berks

County patients; all the beds are free, and support is derived solely from voluntary contributions, mostly small. This furnishes a striking example of what can be accomplished by a people aroused to a sense of responsibility for meeting local tuberculosis needs.

A recognition of this responsibility and an attempt to provide for local needs, was made on somewhat different lines in Luzerne County. The Wyoming Valley society initiated an agitation to provide a hospital for indigent tuberculous cases, through the directors of the central poor district, which includes the city of Wilkes-Barre. The movement was eagerly supported by the church, the press, the profession, trade organizations and tax-payers. A committee of the poor board reported in favor of the project. The directors, however, refused to act, declaring that they could find no law giving them the right to erect such an institution, and insisted on waiting to see if the next legislature would pass enabling legislation.

Whether or not counties in Pennsylvania have the right under existing legislation to erect and maintain hospitals for indigent consumptives, in view of the zealous effort on the part of residents of Luzerne County to secure such an institution, and of the general need throughout our state for segregation of advanced, indigent consumptives, is a matter of the utmost importance. It has therefore seemed worth while to obtain legal opinion regarding this, but in view of the limited space at my disposal, only the following bare conclusions can be quoted:

With regard to the counties in general, therefore, as provided by the general law of the state, buildings can be erected for the maintenance and employment of the poor under the act of June 4, 1879, and hospitals to prevent the spread of infectious diseases (including tuberculous disease) may be erected by the commissioners of the county, by following the provisions and procedure of the Act of April 17, 1866, to the effect that where such hospitals are to be erected the construction thereof shall be recommended by the directors of the poor, a grand jury and the court of quarter sessions of the proper county.

Throughout the state prior to the passage of the general acts above referred to, a number of poor districts, including that of Luzerne County were created by special act. In the case of any such district created prior to the passage of the general act of 1866, providing for the construction of hospitals, the special act is not repealed by the provisions of the general acts subsequently passed. It is the practice of the court to harmonize the provisions of the two, making the provisions of the general act apply to the conditions under the special act. It is, therefore, our opinion that in a case such as the central poor district of Luzerne County, created by the act of 1860, that the law provides for the erection of hospitals for the care of indigent consumptives. It is highly improbable that additional legislation would be made because general laws already exist.

At present any discussion of county hospitals would be incomplete without reference to the situation in New York state. In the autumn of 1909, following the enactment of the law permitting county supervisors to build hospitals for the care of consumptives, the state department of health and the state charities aid association instituted a campaign of education to show the need of such institutions. As a result of a half year's agitation, eight counties made appropriations, aggregating \$233,000. Two county institutions are already receiving patients, and construction is under way in others; while fourteen county boards have appointed committees to study the subject. The campaign will speedily be carried into every county in the state.

The appropriations in New York state have been on the basis of a cost of \$500 per bed for construction, and \$1.25 per day, or \$456.25 per patient per year for maintenance. Let us apply these figures to a few counties in our own state, using the number of deaths from tuberculosis last year as a basis. In Bucks County there were 111 deaths; but it is not to be supposed that all of this number required, or could have been persuaded to accept hospital care. Assuming that 111 deaths represent the annual average of deaths from tuberculosis for Bucks County, and that about one-half that number of patients could be induced to accept hospital care, then the number of beds needed would be approximately sixty, the first cost of the hospital would be \$30,000 and a year's maintenance would cost \$27,375. In some instances counties might unite to support a hospital. This possibility is illustrated on the table by Cameron, Elk and Potter counties. In others there are cities large enough to assume responsibility for municipal care, as for example, Scranton, in Lackawanna County.

III. CONCLUSION:—PENNSYLVANIA'S TUBERCULOSIS NEEDS

As a result of a survey of the tuberculosis situation in our state last year, certain apparent needs emerge. Among these, both for the state as a whole and for particular communities, is the need of coordination of effort on the part of all agencies engaged in antituberculosis work. At present, state, city and philanthropic agencies are working to a large extent as though on each devolved the whole responsibility for putting into effect every measure known to be efficacious in the control of the disease.

There should be tuberculosis planning, both state and city. To secure efficiency there must be a rational division and direction of labor. The lines of attack on tuberculosis should meet, but not cross.

Unquestionably the most pressing need in our state is for hospital provision for advanced cases, particularly those of indigent patients, since these constitute the greatest menace. This is essentially a local problem. It is not for the state to make such provision, since that would involve the transportation of the consumptive to a great distance from home, and not only is the transportation most detrimental to the patient, but many patients cannot be persuaded to leave home at all. Furthermore, the policy in Pennsylvania seems to be for the state to care for early cases. On the other hand, city hospitals would make no provision for rural cases. It would therefore seem that it is the function of the county to provide for such cases, and we have seen that not only has this been done in other states, but that there seems to be a growing sentiment in favor of such provision in certain parts of our own state. When Pennsylvania possesses such means for the isolation of its advanced consumptives, the most pressing need will have been met, and the best step taken to secure control of tuberculosis.

Hemolytic Test for Tuberculosis.—P. Bernbach calls attention to the fact that horse erythrocytes are dissolved by lecithin and tuberculous serum, but not by normal human serum. If serum from a tuberculous individual is added to a 1 per 10,000 solution of lecithin, the combined action of the two will dissolve horse erythrocytes in a concentration in which neither alone is able to induce hemolysis; normal serum has no such action. His communication on the subject was published in the *Zeitschrift für Tuberkulose*.

LOCALIZED EDEMA IN THE LUMBAR REGION FOLLOWING THE USE OF SALVARSAN (606)

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At present, while our knowledge of the effect of the Ehrlich-Hata preparation on man is still in the making, a careful tabulation of the various phenomena that occasionally develop after its administration is often of value and always of interest. Since the latter part of October, 1910, I have employed salvarsan in forty-two cases of syphilis and one case of chronic pemphigus. Up to this time, I have noted no untoward action in any instance. The method of administration employed has been that of Alt,¹ phenolphthalein being used as an indicator; and all of the injections have been made in the interscapular region.

In three instances an urticarial eruption, confined to the trunk, resulted, and in one case a scarlatiniform rash developed. These manifestations were quite evanescent, and completely disappeared in the course of eighteen or twenty-four hours. In two of my cases, however, a peculiar subcutaneous elevation, which I have not seen described by other writers, appeared in the lumbar region forty-eight hours after the administration of the drug. In each instance the tumor was oval in outline, and measured 4 by 10 cm., its long axis being parallel with that of the spine, and its lower border on a level with the top of the sacrum. The two were of the same height, about 2 cm. The lesions appeared suddenly, and attained their full size in five or six hours. They were painful, and very tender to the touch. At no time could fluctuation be obtained. They gradually disappeared, in the course of five or six days, leaving no trace. In each instance, the drug had been injected at a point 30 cm. or more from the tumor site, and there was no traceable connection between the needle-wounds and the elevated area.

The first case occurred in a married woman, housewife, aged 43. The disease was of six years' duration, and there were present numerous tubercular syphilids on the face and chest. The initial Wassermann reaction (the serum tests were made by Dr. W. K. Trimble) was decidedly positive, while the second, made ten days after the administration of 0.6 gm. of salvarsan, was negative. No albumin or casts could be found in the urine at any time. The temperature rose to 101.5 F. on the second day, and the patient suffered considerable pain.

I at first thought the lesion was one of "giant urticaria," but the symptoms and course were not those of Bannister's disease. The subjective symptoms were practically nil.

The second patient was a man, sales agent, aged 38. The affection had been acquired fifteen years previously, and there were no visible lesions. The first Wassermann test was positive, and the second, made nine days after the injection of the drug, was negative. In this instance also the patient suffered rather severely, and there was considerable fever (101 F.) forty-eight hours after the treatment was administered. Urinalyses made before, during and after the attack showed nothing abnormal.

In neither instance was there any tenderness over or on either side of the spine in the space intervening between the injection wounds and the tumor. The skin overlying the mass appeared normal. Permission to do a biopsy could not be obtained in either case.

I am at loss to account for the cause of these edematous tumors, unless we consider them as lesions of urticaria gigans. The explanation accepted for Herxheimer's phenomenon is hardly admissible here, unless

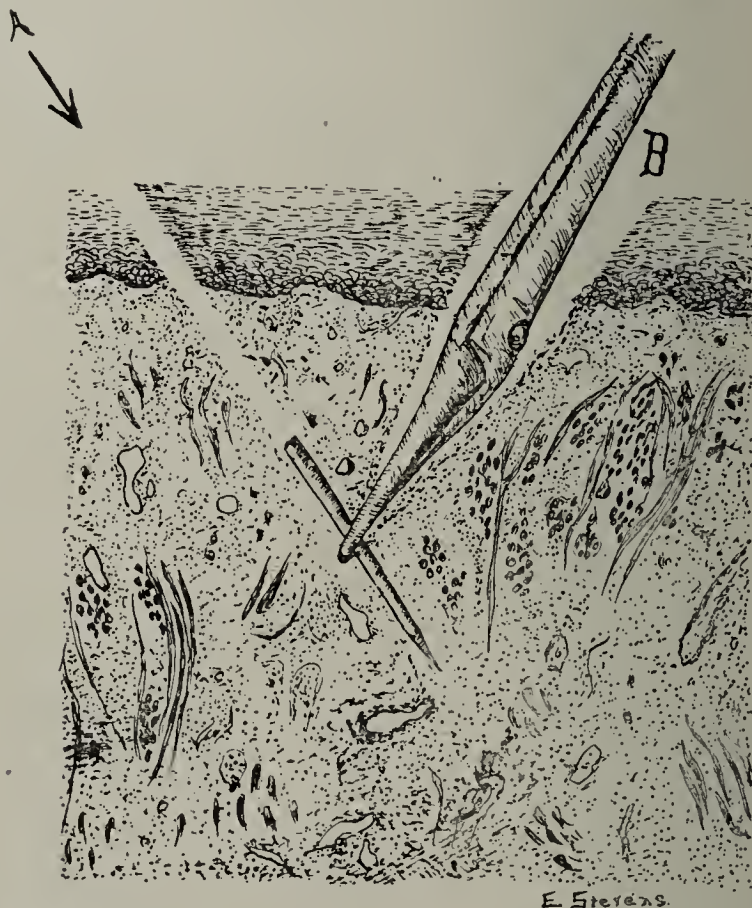
there was present a subcutaneous lnetic focus in the affected region prior to the use of the drug. The severity of the reaction that followed the administration of the agent in both cases, however, together with the brevity of the space intervening between the injection of the salvarsan and the occurrence of a negative serum test, are very suggestive of the results that sometimes follow the sudden liberation of large amounts of treponemal endotoxins.

610 Commerce Building.

THE REMOVAL OF SEWING-NEEDLES FROM SUBCUTANEOUS TISSUES

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BISMARCK, N. D.

The removal of a sewing-needle, or other similar sharp-pointed foreign body, from the soft subcutaneous tissues becomes, at times, a more complicated procedure than the simple injury would seem to indicate. A local anesthetic is usually injected, and an incision made through the punctured wound with the hope of seeing



Method of removal of sewing-needle or other sharp-pointed foreign body from the tissues. A, long axis of needle; B, incision through which forceps is introduced to grasp the foreign body.

or feeling the broken end of the needle in the bottom of the incision. Often one is surprised at the difficulty encountered in the search for the needle. Even after the end of the needle is located with the finger, it is not always readily grasped with a forceps and pulled out.

The broken end of the needle is blunt and rough. In making the incision considerable pressure is brought to bear against this end of the needle, and the sharp point at the other end is pushed still farther ahead, if the tissues in front be easily penetrable. After the incision is made, a forceps is usually pushed down as far as possible in an effort to grasp the end of the needle. It may succeed. More often, however, it is found necessary to push the forceps repeatedly into the tissues in various directions, each time pulling up nothing but small

1. Alt: München. med. Wehnschr., 1910, lvii, 1774.

lumps of fat and a few connective tissue fibers, and each time pushing the needle in a little farther. The soft parts, which are raised with the forceps, and then let go when it is found that the bite did not contain the needle, also help to protect the broken end and to push it still deeper. The finger introduced to feel for the needle is apt to have the same effect.

The following procedure has served me well, and is now the one of choice in emergencies of this kind:

The position of the broken needle should first be determined. It may not be perpendicular to the skin, but may have taken a slanting course and lie nearer the surface on one side of the punctured wound than on the other. The history of the injury, together with careful palpation, will aid in this examination, but in the x-ray we have the most valuable adjunct in determining the position of the needle. After this is settled, a local anesthetic should be injected and an incision made some little distance from the point where the needle entered, and on that side toward which it traveled when entering. The distance may be one-half inch or more, depending on the depth and slant of the needle. The incision should be made so as to strike the long axis of the needle in a plane approaching as nearly as possible a right angle. The knife will thus cut down on the side of the needle, which is readily made out and grasped by means of a small forceps.

It is often impossible to extract the needle through this right-angled incision without danger of breaking it, or of causing anatomic injury. The needle should then be held firmly by the forceps while another small incision is made through the skin at the point where the needle entered. It will be found an easy matter to push the needle out through this opening by means of the forceps.

THE USE OF COLOPHONIUM IN DIFFERENTIATING THE EOSIN-METHYLENE-BLUE AND OTHER STAINS *

S. B. WOLBACH, M.D.
BOSTON

One of the most important of the regressive staining methods used for general histological work is the eosin-methylene-blue method, hitherto only applicable to tissues fixed in Zenker's fixative. A successful stain by this method yields better results for cell-differentiation and the study of fine structures than any other single staining method. Its use has been limited because of the difficulty of securing constant results. Inquiries made in various laboratories, and the results of personal experience in a number of laboratories, have shown that the one uncertain step in the staining method is that of differentiation. It has been generally known that alcohols from different sources do not act alike when used for differentiation. The result of an attempt to determine the variable ingredient in the commercial 95 per cent. alcohol has yielded a method for differentiation which has given uniform results over a period of one year with a large number of alcohols.

The eosin-methylene-blue stain is fully described elsewhere.¹ In brief, the method is that of overstaining with eosin and then with alkaline methylene blue, followed by differentiation with 95 per cent. alcohol. The commonest failure is an imperfect eosin stain. Experi-

ments made with absolute alcohol diluted with distilled water show that a pure alcohol abstracts the eosin too rapidly. The same results were obtained with freshly prepared methyl and ethyl alcohols furnished to the laboratory by a Canadian distillery. In the attempt to obtain an alcohol that would yield constant results, the addition of small quantities of organic and inorganic acids was tried. Similarly, minute traces of alkali were tried, and while it was found that the reaction of the alcohol had an appreciable effect, the results were not satisfactory. As most of the alcohol used in the United States has been kept in bond for a considerable time, it was thought that substances extracted from the wood might affect the behavior. Accordingly, the addition of colophonium in varying amounts was tried, and it was found that the presence of this substance furnished a certain method for obtaining any desired effect achievable by the eosin-methylene-blue stain. Furthermore, the addition of colophonium in large amounts has made the eosin-methylene-blue method applicable to tissues fixed either with formaldehyd solution or alcohol, and permits the use of commercial grades of methyl alcohol and methylated spirits in place of the more costly 95 per cent. ethyl alcohol used in differentiation. For these reasons it was decided to publish this apparently trivial laboratory "wrinkle."

At first, only carefully selected pale colophonium was used; later the darker variety has been used with ordinary methylated spirits, and the results are fully as satisfactory as those given by the more expensive materials. As far as could be learned from one year's experience, the permanency of the stain is not affected. The amount of colophonium necessary naturally varies with the length of time that the alcohol has been in the wood. For general tissue staining, the best results have been obtained by the addition of 0.75 to 1.5 per cent. of colophonium by weight; for special purposes the addition of larger amounts is necessary. In general, it may be stated that the greater the amount of colophonium in the alcohol, the more intense is the eosin stain, so that, by varying the amount of colophonium, we can attain any desired effect; a useful procedure, when one becomes interested in structures that stain faintly with one or the other stain.

For the differentiation of tissues fixed in formaldehyd solution or alcohol, the amount of colophonium required is much larger; 10 per cent. by weight has given the best results for general purposes. It is believed that the use of methylene blue and eosin method with tissues fixed with formaldehyd solution offers many advantages for the study of cells indifferently preserved by Zenker's fixative. As examples, in formaldehyd-fixed tissues, mast cells are brought out prominently and the contents of mucus-secreting cells are clearly defined, and in the early stage of secretion appear as deeply stained, bright blue granules. The only difference in the application of the stain to tissues fixed in formaldehyd solution and alcohol, is a slight reduction in the time that the methylene blue is allowed to act. As a rule, as soon as the sections have become deep blue in color, they are sufficiently stained.

Very good results have been obtained in staining Gram-negative bacteria in tissues fixed with formaldehyd solution. Ten per cent. of colophonium in acetone has given slightly better results than the corresponding alcoholic solution. It is possible to obtain deeply stained bacteria in tissue, such as the typhoid bacillus, and still preserve a fair nuclear stain in a deep eosin tissue-stain.

* From the Pathological Laboratory of the Montreal General Hospital.

1. Mallory and Wright: Pathological Technic, Edition 4, 1908.

In differentiating with the colophonium, alcoholic or acetone solutions, the sections may be transferred directly from water into the solution. The white precipitate that results rapidly dissolves. After the differentiation is completed the sections are washed rapidly in absolute alcohol, cleared in xylol and mounted in balsam. The differentiating solution may be used over and over again, as long as it remains clear, or until too much water has been carried into it by the sections. Some samples of colophonium give a cloudy solution in alcohol, and in this case it is necessary to allow the solution to settle and decant or filter.

Whether the action of the colophonium is a chemical or physical one has not been determined. It has been suggested that its action depends on the presence of organic peroxids,² but the results cannot be duplicated by the addition of hydrogen peroxid or by gum guaiacum, which is richer in peroxid than colophonium.

Another application of the colophonium method is in the differentiation of sections stained by Giemsa's method.³ In place of the mixtures of xylol and acetone, which Giemsa gives for differentiation, a solution of colophonium and acetone may be used that enables us to control accurately the relative intensities of the red and blue elements. For general purposes, the addition of 20 per cent. of colophonium by weight gives the best results. After staining, the sections are transferred to the acetone-colophonium mixture, and when sufficiently differentiated, are washed rapidly with a 5 per cent. solution of xylol in acetone, cleared in xylol and mounted in cedarwood oil. The amount may be increased or decreased according to the effect desired. As in the other staining methods, the greater the amount of colophonium, the deeper the resulting eosin stain.

Still another use of colophonium and alcoholic mixtures is in the application of Gram's method for bacteria in tissues. The solution, in amounts between 5 and 10 per cent. by weight, seems to be a more energetic tissue decolorizer than pure alcohol, and yet leaves the bacteria stained a deep blue-black. It does not act so energetically as anilin oil, but gives more constant results.

240 Longwood Avenue.

AN IMPROVED TONSIL-KNIFE

G. L. KING, M.D., ALLIANCE, O.

In this day of development of the comparatively new operation of tonsillectomy, an instrument which simpli-



An improved tonsil-knife.

fies the operation or hastens its completion, is of advantage to the profession.

I have devised for the purpose of quickly and more easily enucleating tonsils a knife of small size with both angles sharp, as shown in the illustration. Its small size assists very greatly in its manipulation within the mouth. It can be used with dispatch for dissecting in almost any direction and is usually the only knife I

find necessary in preparing for the snare, and it can even be used with advantage to complete the enucleation of the tonsil either under local or general anesthesia.

It will be noticed that the distal end is patterned somewhat after Dr. Douglass' knife, with a probe point, but instead of this joining a straight handle, it joins at nearly a right angle, an equal cutting surface, which greatly facilitates its use in this difficult location.

CEREBROSPINAL MENINGITIS

VENTRICULAR PUNCTURE WITH INJECTION OF SERUM

S. RAVAUD BENEDICT, M.D.

ATHENS, GA.

In reporting this case it is not my object to go into a full description of the condition which existed up to the time of the puncture of the ventricle, but a few words will give a clearer insight into the condition which existed before the operation.

History.—The patient, J. J. C., aged 16, was admitted, on Oct. 4, 1910, to St. Vincent's Hospital, New York, where I was then house surgeon, and a day or two later developed a typical case of cerebrospinal meningitis with classical symptoms. Examination of the spinal fluid corroborated the diagnosis. On admission the temperature was 105 F., pulse 90, respirations 26. Delirium developed in a few hours and continued up to the time of the operation, with short intermissions.

The temperature fluctuated between 101 and 104 F. until October 20, when I opened the skull. From the date of admission, October 4, to October 20, seventeen spinal punctures were done by Dr. Walters, house physician, to whom I am indebted for the above information. The first puncture showed the fluid to be cloudy with a marked amount of pus; on each succeeding aspiration the amount of fluid and pus diminished, until finally Dr. Walters was unable to obtain any fluid after several punctures on different days. In all, he removed one and three fourths pints of fluid and injected one pint of serum.

Operation.—At this point in the case I decided to go into the ventricle. After consulting a number of authorities I found that the previous operations were performed by using a small bore, going through the skin and skull without incision. As this necessitated working to some extent in the dark, I concluded that a regular trephine operation would be better, and therefore, after the usual precautions for opening the skull, I selected a point an inch and a quarter posterior to the external auditory meatus, on Reid's base line, and from this point I drew an imaginary line vertically, and took a point one and a quarter inches above my original point. I next

made a horseshoe flap, opening down and trephined the skull, removing a small button one inch in diameter. With a large three-inch aspirating needle, as used in spinal punctures, I went through the dura, the needle being directed towards a point 3 inches above the opposite external auditory meatus. At a depth of two and a quarter inches I aspirated about half an ounce of very cloudy cerebral fluid, which, on examination, showed a large number of pus cells. In all I removed an ounce and a half of fluid and injected 20 c.c. of anti-meningitic serum, closing the wound without drainage.

Postoperative History.—The patient's condition showed marked improvement and when asked how he felt, he answered

2. Alsberg, Carl (personal communication): Bureau of Plant Industry, Washington, D. C.

3. Giemsa: Deutsch. med. Wchnschr., 1910, No. 12, p. 5507.

very distinctly, "I feel a hundred per cent. better." His speech was more coherent and he was much quieter than before the operation. His pulse, which was 140, dropped to 120; his temperature showing a marked reaction, rising from 101 to 103 F. in a few hours, but on the following day it had dropped to 100.4 F., the lowest for some days. The improvement was only temporary, for on the twenty-fourth, four days later, he became markedly worse and died with a temperature of 104.6.

Autopsy.—An hour after death an autopsy was performed by the hospital pathologist and an interesting condition was found. The right ventricle, into which I had injected the serum, was in a fairly good condition and contained only a slight amount of cerebral fluid, which was practically clear. The ependyma showed only a very faint trace of a previous inflammatory condition, proving conclusively that the serum had worked wonders, but, sad to relate, the left ventricle told a different story. It was filled with a seropurulent fluid of the same appearance as that which I had removed at the time of the operation; the ependyma was inflamed and covered with a thick purulent exudate.

At the time of the operation, little did I realize my mistake, so forcibly brought before me later, for had I trephined the other side of the skull also, the latter part of this report might never have been written. I learned the lesson well, and, if another opportunity offers, I shall not overlook the other ventricle, and I trust that some who have read this paper may profit by this mistake.

SYMPTOMS SUGGESTIVE OF BRAIN TUMOR RELIEVED BY THE CORRECTION OF A REFRACTIVE ERROR

THEODORE DILLER, M.D.

Clinical Professor of Neurology, University of Pittsburg
PITTSBURG

The case is that of a man 50 years of age, a railroader by occupation, who consulted me Aug. 24, 1909. During the last two and a half years he had suffered four severe accidents on the railroad. In one of these accidents the left side of the head was severely injured, but he apparently recovered from all of these accidents.

The symptoms for which the patient consulted me dated back three months and consisted of headache and dizziness of increasing frequency and severity. The headaches were located chiefly in the occipital region, although they were occasionally frontal. There was a good deal of pain in the temples. On a number of occasions the patient vomited before breakfast, and this vomiting did not seem to stand in any relationship to food ingested. He complained of double vision, and stated that within the last three months his sight had steadily failed, and that now he could read only headlines in the newspaper and count fingers.

The above symptoms, related here in the briefest manner, at once suggested a brain tumor. When I sent the patient to see Dr. J. E. Willetts I fully expected that he would report the presence of an optic neuritis; but on the contrary he found the eye-grounds perfectly normal and reported a marked refractive error.

I consequently turned the patient over to Dr. Willetts that he might go over his eyes and correct the refractive error. This he did and reported to me the following:

"Examination of patient's eye-grounds shows a normal fundus. There is no optic neuritis or other pathologic changes. He has a refractive error which I think is responsible for the symptoms presented, and have prescribed the following lenses for constant wear:

"R+2.00D= $\frac{1}{2}$ ° Pr. B. Out=20/20
L+2.50, D=20/20"

Oct. 23, 1909 (two months later) the patient reported to me that he was then free from headache and had been for a

month past. He stated, indeed, that he was greatly relieved from the time the "drops" (belladonna) were put in his eyes. He has had no further attacks of vomiting. He looks brighter and better in every way. In short, it would appear as though his symptoms were due to the refractive error and had been entirely relieved by the glasses.

Westinghouse Building.

SOME "DON'TS" IN THE USE OF SALVARSAN

JAY F. SCHAMBERG, M.D., AND NATE GINSBURG, M.D.
PHILADELPHIA

The most recent advice from authoritative sources as well as our own experience, favors, in general, the employment of salvarsan by intravenous injection.

1. Don't use salvarsan in myocarditis, in advanced cases of tabes dorsalis and general paresis, in nerve syphilis affecting vital centers, in grave kidney disease, in cachectic and debilitated persons (unless the condition is due to syphilis), in aneurysm, in optic neuritis, and in persons with lesions (such as gastric ulcer) in whom increased blood-pressure may produce hemorrhage.

2. Don't use intravenous injections of salvarsan until you have fully qualified yourself and possess a detailed knowledge of the technic. Deaths have occurred and more will occur from unskilful administration.

3. In the preparation of the drug for intravenous use, don't use a solution made with common salt or undistilled water (such as is often supplied in hospitals), but use a specially prepared sterile physiologic salt solution made with chemically pure sodium chlorid; otherwise you may find it impossible to obtain a clear solution.

4. Don't under any circumstance inject into the veins a solution which is not *perfectly clear*; a flocculent or cloudy liquid may produce alarming symptoms of collapse or even death.

5. Don't use a solution any more alkaline than is absolutely necessary to secure a clear solution.

6. Don't inject the salvarsan into the veins without previously running in physiologic salt solution; if the needle is not in the vein you will infiltrate the surrounding tissue with the salvarsan solution and cause subsequent inflammation and unnecessary pain.

7. Don't infuse the solution into the vein too rapidly; it is best to have a needle of such a caliber as will require 8 minutes to introduce 200 c.c. of fluid. With the gravity apparatus, the rapidity of inflow can also be governed by the height of the receptacle.

8. Don't infuse a cold solution; the liquid should be about the temperature of the blood.

9. Don't use "glass pearls" in the mixing jar as is often recommended; we have found that minute particles of glass chip off which might cause embolism.

10. Don't use a routine dosage of the drug; the dose should be gaged according to the weight of the patient and the character of the condition to be treated.

11. Don't employ intravenous injections in your office or in a dispensary. The patient should be treated in a hospital and put to bed and carefully observed for a period of not less than three days.

12. Don't persist in the intravenous injection if the patient should show signs of collapse during the administration, but stop at once.

1922 Spruce Street—340 South Fifteenth Street.

Therapeutics

TRICHINOSIS

It is just half a century since Zenker, at the post-mortem examination of a girl, who had been admitted to the Dresden Hospital, on Jan. 12, 1860, supposed to be suffering with typhoid fever, found the muscles full of living trichinae. This was the beginning of the pathology of the disease in the human race. Tiedeman, in 1822, noted the presence of white, stony concretions in the muscles, and other observers subsequently described similar concretions, and Owen showed that they contained a worm, coiled up inside, to which he gave the name of *Trichina spiralis*, but Zenker was the first to examine a patient who had died from an acute attack of the disease. He found living trichinae in the muscles, and trichinae in the flesh of the pig, of which she had probably eaten two weeks before and which had apparently caused a similar, but not fatal, illness in three other persons.

To-day this disease is occasionally diagnosed, and probably many mild cases are never detected. Every physician should be acquainted with the symptoms in order that, if a patient comes to him suffering from the disease, he may not overlook it, and leave it for some other physician or a consultant to detect.

The symptoms which are usually noted in a case of trichinosis of ordinary severity are loss of appetite, malaise, headache, fever, nausea or vomiting, diarrhea, tenderness of the epigastrium, cramps in the abdomen and limbs, great prostration, swelling and soreness of the muscles and indisposition to move them, increased rapidity of respiration, swelling of the eyelids and feet, and sometimes of the knees, elbows, and ankles.

The two diseases for which it is most frequently mistaken are typhoid fever and articular rheumatism. The headache, fever, and diarrhea naturally suggest typhoid. The height and duration of the fever often make the resemblance to typhoid very striking; but the muscular cramps, the vomiting, the prostration and muscular weakness, out of proportion to the fever, the slight mental impairment, also not so great as is usually seen in typhoid with an equal degree of fever, the muscular soreness, and the edema of the feet and eyelids, when present, will generally enable the distinction between the two diseases to be made with reasonable certainty. If the disease is typhoid, the Widal reaction should soon be in evidence. In the cases with considerable fever, and in which swelling of the joints and soreness of the muscles are conspicuous, the trouble is sometimes mistaken for either articular or muscular (myalgia) rheumatism. When this occurs the limited number of joints affected, the edema of the eyelids, if present, the rapid respiration, and the absence of improvement under the use of the salicylates are generally sufficient to disprove the diagnosis of rheumatism.

When the pains in the limbs are troublesome and there is considerable weakness, without high fever, it might be suspected that multiple neuritis is present, but in trichinosis it can generally be determined that the soreness and pain are localized in the muscles rather than in the nerves, that the impairment of motion is due to the painfulness of voluntary muscular contractions rather than to paralysis. Also the headache, dyspnea, and edema of the eyelids will generally enable one to exclude disease of the nerves.

If vomiting, diarrhea, and muscular cramps in the abdomen and limbs are present, the disease may be mistaken for cholera morbus or other forms of cholera, or for ptomain poisoning, but the continuous fever, the headache, the muscular soreness, the continued prostration, and the edema will soon lead to a change of diagnosis. When the presence of trichinosis is suspected but cannot be definitely determined from the subjective and objective symptoms observable, microscopic examination of the blood will usually afford important aid in deciding the question. The blood examination, as a rule, shows a distinct leukocytosis, which, however, is not so great as is often seen in purulent infections and pneumonia. But the most striking feature observed in the blood is the marked eosinophilia which was pointed out by W. S. Thayer and Thomas R. Brown, in 1897, and which has since proved to be of great diagnostic importance. The percentage of eosinophils was found to be more than 20 in over half of William Gilman Thompson's series of fifty-two cases, and has been found to be above 80 per cent. in some cases. Thompson (*Am. Jour. Med. Sc.*, August, 1910) sums up the conditions that may cause an increase in the eosinophils as follows: A moderate increase above the normal of from 1 to 4 per cent. in adults, has been observed in pneumonia before the crisis, in some skin diseases, particularly dermatitis exfoliativa, dermatitis herpetiformis, pemphigus, psoriasis, prurigo, eczema and leprosy, in other intestinal parasitic affections, such as tapeworms, roundworms, and uncinariasis, in bronchial asthma, and sometimes after large doses of camphor, iodid of potassium, and salicylate of sodium. But in none of these conditions is it usual to see so large a degree of eosinophilia as in trichinosis and, furthermore, none of these conditions is likely to be mistaken for that disease.

Rarely, if ever, can the trichinae be found in the stools or in the blood of patients who have the disease. But the crucial test, when it is practicable to make it, is the finding of the trichinae in a fragment of the patient's muscular tissue removed by a harpoon designed for this purpose.

The symptoms usually appear about two weeks after the ingestion of the infected meat; sometimes a few days earlier, occasionally a week later. This corresponds to the time consumed in the development of the trichinae in the intestine, the production of a new generation, and their migration to the muscles.

The fever may rise as high as 104 F., or even higher, and subsides gradually. It usually lasts for several weeks, but may disappear in less than one week, and has been known to persist for two weeks. After it has entirely disappeared it may return again, simulating the relapse of typhoid fever.

The increased rapidity of the respiration is probably due to involvement of the diaphragm by the trichinae. Besides the edema of the eyelids, which is seen in about one-fourth of the cases, other ocular symptoms are not uncommon. Among them may be mentioned pain and burning in the eyes, distinct from the headache, corneal hemorrhage, diplopia, tenderness of the eyeball on pressure, pain on moving the eye, and photophobia.

Death is not a common result of the disease, and recovery is attended with calcareous degeneration of the capsule, which may be followed by fatty degeneration. Loss of flesh accompanies the disease, and anemia is a striking sequel.

The most important treatment is prophylactic. The disease is contracted by eating pork which contains the trichinae encysted in the muscular fibers. As these are digested the worms are set free in the intestinal canal, where reproduction takes place with wonderful rapidity. The new worms pass from the intestine through and into the various tissues of the body, and finally lodge in the muscles, where they ultimately become encapsulated, although they may retain life for many years.

Uncooked pork, sausage, bacon, and ham are the principal things to be avoided, if one desires to escape trichinosis. The last few years have witnessed such an agitation over tuberculosis that government inspection has been largely directed toward the detection of this disease in the meat used for food, but there is no systematic inspection of pork intended for domestic consumption for the presence of trichinae, although it is estimated that 2 per cent. of hogs are infected with this parasite. This would indicate the desirability of government inspection of all pork intended for domestic use as well as that for export, and gives great importance to the question of how the trichinae can be certainly destroyed. Salting and hot smoking will generally kill them, but the only reliable prophylactic procedure is thorough cooking. It has been stated that a temperature of 140 F. will destroy the trichinae, but, on the other hand, it has been found that they may survive a temperature of 180 F. The practice of the large packing houses is said to be to cook hams at a temperature of from 170 F. to 212 F., a general rule being to continue the cooking for thirty-eight minutes for each pound of weight of the ham. Perfect safety undoubtedly demands that they should be boiled at a temperature of 212 F. for several hours.

When infection has occurred and has been detected early, the first step in treatment is thorough evacuation of the bowels so as to remove any of the worms which may still remain in the intestines, for the trichina reaches its full development after it has been in the intestine for three days, and may continue to bring forth young during a life of some weeks. For this purpose probably nothing is better than a 5-grain dose of calomel, followed in six hours by half an ounce of sulphate of magnesium. It is good practice to cause two free movements of the bowels daily, for a week, to insure, if possible, the elimination of all the embryos of the worm. Also, thymol, in capsules each containing 0.10 gram (about 2 grains) should be administered four or five times in twenty-four hours as an anthelmintic and bowel antiseptic.

R	Gm.	
Thymolis	2|	or 3ss
Fac capsulas siccas 20.		

Sig.: A capsule four times a day, taken with plenty of water.

At the end of a week, if there is any gastric or intestinal irritation, the following prescription is of value:

R	Gm.	
Bismuthi subcarbonatis.....	20|	3v
Phenylis salicylatis	5|	or gr. lxxv
M. et fac chartulas 20.		

Sig.: A powder, three times a day, before meals.

The stools should be examined at the end of a week for the worms, and then once every week for several weeks.

The above intestinal treatment is generally efficient. There is probably no good reason for giving several or

repeated doses of male fern or santonin, which have been recommended to eradicate this worm.

Glycerin has been recommended, given internally, on account of its supposed ability to kill the worms by its hygroscopic properties. As it must be taken very well diluted not to cause nausea, it is a question of what value this treatment is. If well diluted it can do no harm, and may be used as an additional medicament. It acts also as a laxative. The dose would be a tablespoonful two or three times a day.

The diet should depend on the amount of fever, and under any circumstances for several days should be liquid; milk, broths, and cereal gruels.

There is no known way of destroying the larvæ or trichinae in the muscles. Picric acid has been recommended as possibly having the ability to destroy the larval forms that are circulating in the blood. This is perhaps doubtful. The internal dose is 0.03 to 0.10 gram ($\frac{1}{2}$ to 2 grains) dissolved in alcoholic solution and taken well diluted. It is intensely bitter. It would seem unwise to use picric acid, which is likely to cause severe gastro-intestinal irritation, nervous irritation, and perhaps irritation of the kidneys, when there is such a large element of doubt as to its therapeutic value in this disease. There may be some justification for administration of large doses of quinin.

As after several weeks, perhaps six, the localizations of the worms in the muscles become encapsulated and permanently external to the body, so to speak, and forever after harmless to the host, it might be well to saturate the system with calcium salts, such as lime water, or perhaps better, the glycerophosphate of lime, in order to hasten the deposit of calcareous matter in the capsules surrounding the worms. Therefore, as soon as the active intestinal medication is over and the patient recovering, the glycerophosphates of lime should be administered. The patient also generally requires iron.

During the height of the fever, the patient may be restless and sleepless and require hypnotics or sedatives. On account of the muscle irritation the bromids or chloral are very valuable.

Although there may be considerable muscular weakness for some time after the acute symptoms are over, it would seem inadvisable to resort to massage or electricity, as these would tend to interfere with the normal isolation of the germs by Nature's methods.

The Culture of Human Lepa Bacilli.—F. W. Twort reported results of experiments in cultivating the lepra bacillus of man (*Nature*, Nov. 24, 1910). On account of the close relation between the tubercle and lepra bacilli it occurred to him as probable that they would require the same chemical substances for building up their protoplasm; which, however, could be elaborated from the ordinary media by the tubercle bacillus only. If these then could be furnished already made to the lepra bacillus it might be cultivated, and the easiest way to do this would be by adding to some good culture medium a proportion of ground-up bodies of tubercle bacilli containing them. He therefore made up a culture medium consisting of egg, 3 parts; 0.8 per cent sodium chlorid, 1 part; ground tubercle bacilli, 1 per cent.; and glycerin, 5 per cent. or less, mixed, placed in tubes, sterilized and set in slopes. Leprosy bacilli, previously treated to kill contaminating organisms, are inoculated on the tubercle medium. They grew as a delicate colorless streak and showed the typical morphologic and staining characters of the lepra bacillus. He proposes to follow up the work with experiments to make a lepra vaccine and to grow the lepra bacillus of rat.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, FEBRUARY 4, 1911

ALCOHOLISM AND HEREDITY

Recently several studies of a statistical nature and dealing with the effects of alcoholism have been published by Professor Karl Pearson and his associates in the Francis Galton¹ Laboratory of Eugenics in the University of London.² The essential conclusions drawn by these investigators from their studies have been subjected to vehement criticism, especially by the outspoken friends of temperance, and a rapid-fire discussion has been carried on, the echoes of which we still hear. Like nearly all discussions of the alcohol question, this is marked by considerable extravagance of statement and by sharp personal conflict; nevertheless it will serve a highly useful purpose in bringing into wider prominence, and securing larger recognition for, the need and importance of unbiased and scientific study of the problems of alcoholism. Everyone will agree, it is believed, with Sir Clifford Allbutt when he says that "much of the literature of alcoholism is of a rhetorical rather than a scientific order, and the sooner scientific order and method are introduced the better."

Now the particular conclusion with regard to heredity which is drawn by the Eugenics Laboratory workers from the materials they studied and which has met such violent attack, is in substance that alcoholism in the parents does not *per se* result in deterioration of the physique and mental powers of the offspring. The critics, notably Sir Victor Horsley in association with Dr. Mary D. Sturge, assert that the evidence is altogether too slender to support so heavy a burden as this startling and revolutionary view. They charge the authors of the report with errors that invalidate completely not only this particular conclusion but also other conclusions from the same series of studies. It is probably altogether unnecessary to point out that Professor Pearson and his co-workers do not assert that alcohol may be taken with impunity or that it promotes evolution in an upward direction. They simply give the results reached through the study by their methods of certain data. Whatever the value of their statistical

researches in the establishment of actual facts may be—and we must bear in mind that at present the data available for this kind of study necessarily suffer from incompleteness and other shortcomings—they bring us face to face with problems of the nature of the association of alcoholism and degeneracy.

It is customary to attribute to parental alcoholism many mental and physical defects; for example, epilepsy, mental and moral enfeeblement, certain forms of insanity, stunted growth, deaf-mutism, etc. But what about the possibility of an underlying hereditary defectiveness in these alcoholic parents which gives rise to defective offspring? And what about the view that alcoholism itself is the symptom or result of degeneracy rather than the cause thereof? Because degeneracy is associated to such an evident extent with alcoholism, it becomes necessary to exclude the subtle influences of hereditary degenerative tendencies before it can be shown conclusively that parental alcoholism uninfluenced by other factors exercises a determining effect on heredity and results in physical and moral degeneration of the offspring.

In his helpful address on "The Ancient Foundations of Heredity,"³ A. B. Macallum points out that many of those vitally interested in these questions assume that heredity can be modified by accidental influences much more easily than is believed to be possible by most biologists. The problem of the hereditary influences of alcoholism as well as the closely related problem of such great import in study and prevention of inebriety, namely, whether alcoholism is an antecedent or a consequent of degeneration, are exceedingly difficult ones, on the correct solution of which much depends and which we can hope to solve only by means of the methods of general science.

MILK LEGISLATION

A bill, concerning the production and distribution of milk, which is of more than local interest has been introduced into the Illinois legislature. It seeks to place the inspection of dairies under state authority, and would prohibit cities from enforcing the tuberculin test or otherwise specifying the conditions under which milk should be produced. Incidentally, it may be remarked, the bill illustrates a certain well-defined tendency in American politics to keep cities and other local governing bodies as impotent as possible to perform services needed by the citizens—an impotence which never hampers the activities of the practical politician, as many good people innocently hope it may. The bill is the outcome of an investigation by a committee consisting of ten members of the state legislature, four senators and six representatives, none of whom claims to have expert knowledge of the conditions under which clean milk should be produced. The opposition of milk-pro-

1. A notice of the death of Sir Francis Galton, with a brief summary of his scientific work, appears in the London Letter, this issue.

2. Eugenics Laboratory Publications, 1910, xiii, x. For further references see Sturge and Horsley, Brit. Med. Jour., 1911, i, 72.

3. Canad. Med. Jour., 1911, i, 1.

ducers to the tuberculin test is largely responsible for this investigation and for the existence of the state commission.

Almost at the same time, a committee was appointed by the Mayor of Chicago to investigate the milk-supply coming to Chicago. This committee, which has not yet made its report, is composed of a physiologic chemist, a veterinarian, a pediatricist, a bacteriologist, representatives of the Chicago Health Department, one member from the Public Health and Marine-Hospital Service, one from the City Law Department, a member of the State Milk Commission, a member of the Milk Dealers' Association and one from the milk-producers, with one of the aldermen of Chicago as chairman.

On account of the difference in the character of the two committees and the methods of procedure in the investigation, a comparison of their reports should be of interest. The city committee is investigating the milk question from a scientific as well as from a practical point of view. Literature regarding milk-production has been studied, and tours of inspection have been made to see the practical production, handling and pasteurization of milk. The investigations have not yet been completed, but from the character of the committee and the methods followed the results should be of value.

An entirely different procedure has been adopted by the state committee. Experts and so-called experts have been examined and their opinions collected. The value of this sort of investigation would depend on the competency of the witnesses as experts, and, as will be seen, this is perhaps open to some question. Under this committee, the chief points considered were the bacteriology of milk, pasteurization and the tuberculin test. The competency of some of this expert testimony may be judged from the following instances:

One witness stated that he had pasteurized a sample of market milk in his laboratory and found tubercle bacilli surviving. On cross-examination, it was brought out that in his method of examination he had not taken the precaution to avoid the formation of a film, which, as Theobald Smith has shown, is a protection to tubercle bacilli. Evidence that they were really tubercle bacilli was based on microscopic examination alone and not on the results of animal inoculation, which is the only safe means of differentiating tubercle bacilli from other acid-proof bacilli frequently found in milk.

Another witness stated that his unfavorable opinion of pasteurization was based on bacterial counts made by several thousand "chemical" examinations. The third witness was also able to distinguish different species of bacteria by microscopic examination. He was opposed to pasteurization because he found that the serum of pasteurized milk kept at room temperature for seven days killed a guinea-pig, while serum of raw milk kept seven days did not. This single experiment on two guinea-pigs convinced him of the toxicity of pasteurized milk. He did not consider the fact that neither raw

nor pasteurized milk is usually consumed after seven days. The tuberculin test was condemned by many "experts" whose competency was not established on cross-examination. The results of such an investigation would hardly be convincing to scientific men or to men having a real knowledge of clean milk production and the menace of a tuberculous infection of cows.

As intimated by the chairman of the committee previous to the completion of the investigation, however, the committee in its report favored the abolishment of the tuberculin test and the taking of the control of the milk-supply out of the hands of cities and providing for its regulation by state inspection. The matter of pasteurization was ignored altogether by the committee in its report. These recommendations have been embodied in the bill introduced in the legislature. If this bill becomes a law, cities must accept the milk as delivered by the producers without authority of examination.

A law of this nature might be effective if a large and competent force of expert inspectors, veterinarians, chemists and bacteriologists were employed. This force would have to be sufficient to control the milk at the point of production, at the receiving and delivery stations, at the railroads, at the distributing stations, on the delivery wagons, etc. This would be an enormous task, one of much greater magnitude than would be necessary if cities were permitted to control their own milk-supplies.

Such a system of state supervision is in force in Pennsylvania. At a recent meeting of a county farmers' association in that state, a resolution was passed criticizing the system of dairy inspection instituted by the state board of health, because, as the members believed, it was not accomplishing the purpose intended, but had resulted unsatisfactorily, as might be expected. The selection of inspectors under the pay and allowances made by the state legislature had resulted in many of the positions being filled by men wholly without training or special ability for such serious and important work. The results would probably be no different in Illinois. But the significance of this criticism lies in the fact that it was made by the farmers, the milk-producers, the class in whose interest the legislation in Illinois was primarily instigated.

Other states have enacted or are contemplating the enactment of similar laws, and this makes the action of the Illinois commission and of the state legislature of more than state interest. Unfortunate conditions have arisen in Iowa on account of legislation which would prevent the city of Des Moines, the largest city in the state, from controlling its milk-supply. The law is being tested in the courts.

The value of the tuberculin test is accepted by men who are competent to express an opinion. Pasteurization of milk is also of undoubted value in the absence of the compulsory tuberculin test. The cattle-owner does

not realize that not only is the presence of tuberculosis in his herd a menace to public health, but his herd cannot be as profitable as a healthy herd, and that, moreover, one tuberculous cow will spread disease rapidly to healthy cows. The production of clean milk is wholly a scientific and not a political or commercial question, and the mere idea that the lives of innocent babies should depend on political or commercial considerations is a monstrous one.

PREVENTION OF FOURTH-OF-JULY TETANUS

The duty of the medical profession in the matter of Fourth-of-July tetanus is distinctly threefold. First, it has an important function in securing legislation which shall prevent injuries from explosives; secondly, it must prevent tetanus and other serious complications resulting from such injuries; last, it has the almost hopeless task of trying to prevent a fatal outcome in those cases of tetanus which have been produced by Fourth-of-July injuries. Certainly the most logical point of attack is the celebration itself. That this foolish habit of an annual orgy of gunpowder and bloodshed is not one which cannot be broken has been shown in a number of communities. Last year, the city of Trenton, N. J., which previously had suffered severely in proportion to its population, adopted a prohibitive ordinance, suppressed the gunpowder celebration, and totally eliminated Fourth-of-July injuries; the previous year there had been fifty-nine injuries reported, with one death. In 1908, Cleveland had 105 injuries with twelve deaths; a prohibitive ordinance reduced the casualties to four in 1909 and one in 1910, with no fatalities. Baltimore by the same means has kept down the list of injuries, while Washington has had no injuries for two years. These examples, and many others that might be cited from the experience of smaller cities and towns, show that it is perfectly possible to eliminate all the physical injuries which we have so long associated with the Fourth of July, to say nothing of the loss by fire, nervous strain, squandering of money, and the inculcation into impressionable youths of bad ideas as to the free use of firearms and explosives.

Restrictive measures give results in direct proportion to the vigor with which they are enforced, but, like most compromises, are satisfactory to no one. New York by this means reduced the number of injuries from 552 in 1909 to 185 in 1910, six of the latter being fatal; in Chicago the usual number of accidents was cut to less than half, but still there were sixty-six injuries with four deaths. Evidently, then, it is the plain duty of every community which has permitted the use of explosives in Independence Day celebration to put an absolute stop to the practice. While an ordinance prohibiting the use of blank cartridges, firearms and giant crackers would, if enforced, abolish most of the dangers of the Fourth, yet experience shows that such an ordi-

nance cannot be enforced. Only when the sound of any explosive means a violation of the law can the more dangerous explosions be prevented; furthermore, hundreds of accidents, many fatal, are annually caused by the so-called harmless fireworks. If boys are given a mild taste of the joys of noise and devastation which gunpowder can produce, they will seek and discover ways of getting more; but if for a very few years this sort of celebration can be prevented, the demand for it will vanish with the coming in of a new generation of small boys who know not what they have missed. During the transition period, substitution in the way of parades, picnics, sports and other wholesome means of entertainment may be advantageously employed, and in time these things will undoubtedly develop in a way to make our great national holiday fully as memorable and a much more appropriate day in the calendar.

In bringing about this change there is every opportunity for medical men, and especially for medical societies, to do much for public welfare, and this is the time of year in which to begin work which will secure results. If local medical organizations will use their opportunities to influence public opinion through the press and personally, in nearly all communities they can make it possible to secure legislation which will abolish the Fourth-of-July carnage. Through properly directed efforts medical societies can secure the introduction and passage of suitable ordinances, and can greatly assist in their enforcement. Probably there are few directions in which concerted action can accomplish so much immediate good as this, and it is a service which every medical society should seek to perform for its own community. THE JOURNAL stands ready and prepared to furnish data on the results of past celebrations, and advice as to the prevention of future harm.

THE INFLUENCE OF THE PRINCIPLE OF SPECIFICITY ON MODERN MEDICINE

The term "specificity" has come into such every-day use that we are in danger of losing sight of its broader significance among the countless special points of application which are closer to our eyes. It is the opinion of Wassermann, expressed in a recent address on this subject,¹ that it is recognition and investigation of this fundamental biologic principle which characterize the present era of medical science and to which its progress is most largely due. We owe to Robert Koch its first definite statement, in the declaration that every infectious disease is caused by a definite agent, and that this agent is found always in that special disease, and that no other disease is produced by that agent; in other words, the causal organism is specific for the disease. The next step came with von Behring's discovery that in response to invasion by the bacteria or their poisons the body reacts with the production of

1. Wassermann: *Deutsch. med. Wchnschr.*, 1910, xxxvi, 1860.

substances which are specific for the products of these bacteria. For some time the idea of specificity was associated only with bacteria, but after a time it was found to apply equally to the proteins of the higher forms of life, whether of animal or vegetable nature, and now we recognize that a certain degree of specificity may exist even between different tissues and fluids of the same individual. Under certain conditions we can distinguish by biologic reactions between the milk and the blood-serum, or between the egg proteins and the tissue proteins, and possibly also between the proteins of different organs of the same animal. An interesting special case is furnished by the crystalline lens protein, which is so sharply differentiated from the other proteins of the animal that it acts to the animal which formed it as an entirely foreign protein; it is said to be possible to sensitize a guinea-pig with the lens from one of its own eyes so that it will be intoxicated when injected with an extract of the lens from the other eye.

Recent developments would seem to indicate that the phenomenon of specificity is not limited to the proteins, but may also be exhibited by the fatty substances, as in the relation of the lipoids to the serum reactions of syphilis. In echinococcus infection, we find the blood of the host developing substances which react specifically with the lipoids of the echinococcus, and not with similar lipoids from the tissues of the host.

The classical demonstration that tetanus toxin is fixed by nervous tissue, taught us that there exist specific relationships between body cells and poisons as well as between the blood-serum and poisons, and led us to an understanding of how toxins do their work. From this has in turn developed the appreciation that there are two possible ways of approaching our task of preventing harm from injurious agents: we may reduce or remove the specific affinity of the cell for the toxic substance, or we may turn toward the "noxa," as the Germans say, and render it incapable of combining with the cell. Of these two methods only the latter has received much attention or given much encouragement. Here we must place, not only our few efficient antiserums, but also the parasitocidal drugs. It was through his early appreciation of the generality of the laws of specificity that Ehrlich came, over twenty years ago, to develop the principle of specific chemical agents which should act on specific cells, this being before the discovery of specific serum therapy. From this has grown the new science of chemotherapy, based on the principle that the affinity of the drug shall be greater for the parasite or its poisons than it is for the cells of the infected individual; in other words, chemotherapy seeks for substances that combine specifically with the parasite or with its poisonous products, a requirement which had already been fulfilled through empiricism in at least one case, that of quinin and the sporulation forms of malaria parasites.

The growth period of medical science, which immediately preceded the present period, developed about the

central thought of the dominance of the cell in structure, function and disease. Concerning itself largely with post-mortem material, and observing chiefly the steps leading away from physiologic integrity, medical thought inevitably took a pessimistic turn, and therapeutic nihilism was the logical outcome. But the central idea which in recent years has guided investigation is, Wassermann contends, that of specificity. Under its influence therapeutics comes again into its own, and optimism takes the place of nihilism as we cease to limit our faculties to the contemplation of the ravages of disease and turn our attention toward the living being, and the search for substances which have specific affinity for the cause of the disease, or for the organ we wish to affect.

The doctrine of specificity now dominates medical science, and we look for happier results from the new régime, trusting that as pathologic anatomy under the influence of the cell doctrine gave us a better understanding and more accurate diagnosis of disease, the study of specificity will add as much to our ability to control and cure it.

Current Comment

JOURNAL OF THE CANADIAN MEDICAL ASSOCIATION

With pleasure we note the advent in the field of official medical journalism of the new *Canadian Medical Association Journal*, representing the organized profession of Canada, the first number of which appears with the new year. The increase in the number of medical journals connected with and representing medical organizations is but an expression of the demands and the ideals of a modern conception of medicine, of which the passing of the proprietary medical school is still another phase. A journal which is unhampered and uninfluenced by commercial considerations, which receives the support and encouragement and the contributions of the best of the profession, and which may use its prestige, its wide circulation and the able services at its command to foster and carry out the ideals and objects of the profession, is the one that is in position to accomplish the most and best for both the public and the profession. For the modern conception of medicine is not only to elevate the profession, to make better educated, more skilful physicians, but also to discover methods and measures of prevention and to promote the public health. To do this requires education, legislation and the united support of the profession. As an aid in the creation of a perfect organization and in carrying out the measures proposed by such organization, the publicity made possible by an official journal is a most important and, indeed, an essential factor. Many of the state societies have established official organs which are a power for good in their respective fields. We are glad to see the national organization of Canada adopt this plan by taking over the *Montreal Medical Journal*. The editorial direction of the new journal remains the same, and the journal will continue to be issued from Mon-

treal. The first number sets a very high standard, both in the character of the papers and editorially. A noteworthy improvement over the journal which it succeeds is the exclusion of numerous advertisements of objectionable proprietary preparations which have been shown to be fraudulent, misbranded or downright nostrums. In this respect the new journal sets a wholesome example, which might be followed with credit by its contemporary in the mother country, the *British Medical Journal*. We offer our felicitations to the *Canadian Medical Association Journal*.

MEDICAL EDUCATION AND PRACTICE IN JAPAN

According to a report from the American Consul at Nagasaki, commented on in the 1910 Report of the U. S. Commissioner of Education, Japan has two grades of medical colleges. To enter the ordinary medical colleges, eleven or twelve years of work in the elementary and middle schools are required, but for admission to the medical colleges of Tokyo, Kyoto and Fukuoka universities, three additional years of higher preliminary training are required. The medical course extends over four years. Graduates from the imperial universities and other approved medical schools must secure a license from the minister of home affairs before they begin to practice. A graduate of a foreign medical school or a holder of a physician's license, coming from a country that licenses Japanese physicians without examination, may be licensed by the minister of home affairs. No person may practice medicine who has been sentenced to imprisonment or fined in connection with medical practice. Books must be kept by physicians for ten years, and the names, ages, residence, professions, and the names of diseases of patients and the method of treatment applied to them must be entered therein. Physicians may not make a false advertisement by boasting of their talents, nor may they advertise as having secret methods of treatment.

PREVENTING TUBERCULOSIS AT ITS FOUNTAINHEAD

Childhood, says A. W. Jones,¹ is the period of life in which the greatest susceptibility to tuberculosis infection exists, and adult tuberculosis is generally an after-result of childhood infection. The true field of prevention in antituberculosis work, then, is obvious. Jones restates the opinion that the tuberculous infection of the individual does not occur by direct entrance into the blood through the air cells of the lungs, but always through the glandular system, either in the respiratory or alimentary tracts, and that in the vast majority of cases it occurs in infancy. If the infection occurs before the second year the patient promptly dies; if after the age of 2 the disease is more likely to become latent, and from this age up to puberty this tendency to latency increases with each year of age. What is called early tuberculosis in adults is generally the second stage or the beginning of the third, and at best it can be spoken of only as the early stage of pulmonary

tuberculosis. Jones says that it should be the business of preventive medicine to forestall this stage. Logically, the upbuilding of the individual at the time of the true incipency of the disease will give to Nature the greatest amount of assistance at the most applicable moment in the life of the disease. And as childhood is also the constructive period of the individual, the time when the tendency to normal cell-growth is at its highest, we may naturally expect the greatest returns for efforts expended, and the greatest percentage of absolute recoveries possible. Jones designates the public school as the "unworked field of preventive medicine" wherein most effective work in this line can be done. While this cannot be said to be a wholly "unworked" field—witness the active movement for the betterment of school hygiene, medical inspection, the establishment of open-air schools, etc.—yet it is no doubt a vulnerable point of attack in the eradication of this disease.

THE KISS OF DEATH

A better understanding of the sources and methods of transmission of infectious diseases has resulted in many changes in matters of personal and public hygiene. Mediate and immediate personal contact is found to account for many of such infections, and this has resulted in such measures as the abolishment of the public drinking-cup and of the use of slates by school children, greater care in the disposal of the sputum of the tuberculous, and the sterilization of bacillus-carriers. The transmission of such infections as diphtheria, syphilis and tuberculosis, have in some cases undoubtedly been due to methods used in certain industrial occupations, such as the use of blowpipes by jewelers and glass-blowers, and perhaps the sticking of the wrappers of cigars by the saliva in the cigar industry. Among these "relics of a more careless age" is a custom in the cotton factories necessitated by the old-fashioned weave-room shuttles, grimly called the "kiss of death." This shuttle, which requires the sucking of the thread through a hole by the operative, has doubtless been responsible for the carrying of tuberculosis and other infections throughout all the generations in which it has been used, and is, indeed, a veritable "kiss of death." A shuttle has been devised which does away with this lip contact, and a bill has been introduced into the Massachusetts legislature to compel mill-owners to abandon the use of the old shuttle. Popular knowledge of infectious and contagious diseases and the way they are carried should be all that is necessary to abolish at once all such contrivances. Unfortunately, it is sometimes easier for a camel to go through the eye of a needle than for a "practical" man to recognize facts, the corollary to which, if acted on, might possibly shave profits more or less; and this bias is illustrated by the fact that there is no market in the United States for certain life-saving devices which are manufactured here. These devices are sold only abroad—where the law compels their use. It is a sad commentary on our civilization and appreciation of what is humane that any legislation should be needed to compel the employers of labor to eradicate from the industries all forms of the "kiss of death."

1. Jones, A. W.: An Unworked Field of Preventive Medicine, Jour. Minn. State Med. Assn., Oct. 1, 1910.

THE SEPTIC TANK

A particularly clear and authoritative statement of the modern view of the septic tank will be found in an editorial by Rudolph Hering in the November, 1910, number of the *American Journal of Public Hygiene*. The reasons for the decline in the favor with which the septic tank was once regarded are stated under six heads. A few sentences will bear quoting: "The great reduction in the amount of sludge to be handled as promised by the advocates of the septic tank has not been realized." "A reduction of bulk by drainage is very much greater than a reduction by septic action, the latter referring only to solid matter." "The odor about a septic tank is frequently offensive." "It was found that the septic effluent was less fit for subsequent oxidation of the sewage by biologic filters or bacteria beds than fresh settled sewage." "The sludge which has to be removed from septic tanks is often foul when taken out and its removal is connected with more or less of a nuisance." The article cited is not confined to a discussion of the septic tank, but deals with other methods of sewage disposal in the light of the most recent investigations along both practical and theoretical lines.

THE DECREASING GERMAN BIRTH-RATE

The race-suicide question is beginning to come to the front in Germany. Last year's birth-rate was only thirty-three per thousand, as against thirty-six for the decade ending with 1890, and forty-two in 1875. It is highly probable that this decrease will continue. The phenomenon is the natural consequence of increasing thrift and prosperity and changed social conditions. It is asserted that the higher standard of living tends to produce physiologic conditions which in themselves decrease fertility. Economic and social reasons, however, including the tendency to delay marriage under modern conditions of life, are ample to account for the gradual decrease in highly civilized countries at the present time. The birth-rate does not decrease rapidly among the members of an improvident proletariat.

Medical News

COLORADO

Trades Union Hospital.—The Denver Union Hospital Association has opened headquarters and is raising funds for the erection of a hospital especially for members of allied trades unions.

Hospital Saturday and Sunday.—The Hospital Saturday and Sunday Association, Denver, collected on Tag Day \$6,080. During last year the association gave hospital care to 266 persons.

Personal.—Dr. Elizabeth Cassidy, Denver, has been elected a member of the Board of Commissioners of Denver County. —Dr. Leonard Freeman was operated on for appendicitis and is reported as doing well.

State Society Meeting.—The Colorado Society for the Prevention and Control of Tuberculosis, at its annual meeting in January, reelected Dr. G. Walker Holden as president and S. Poulterer Morris as executive secretary.

Home for Mental Defectives.—The State Home and Training School for Mental Defectives now under construction at Arvada will be ready for occupancy in the spring. Its com-

pletion will remove from county institutions all public charges of this class.

House-Warming.—On January 2 a house-warming was given by Drs. Melville Black, Leonard Freeman, Josiah N. Hall, Samuel D. Hopkins, Robert Levy and Charles B. Lyman at their office on the fourth floor of the Metropolitan building. The good fellowship manifested on this occasion was such that it was felt to be a great success.

Gift to Consumptive Hospital.—Mr. Jacob August, Cleveland, has given \$25,000 to the National Jewish Hospital for Consumptives, Denver, the interest to be used for the maintenance of the trades school. —Mrs. Lewis Schoenberg, Cleveland, has provided \$25,000 for the purchase of a farm near Denver to provide supplies for the inmates of the hospital.

Denver Deaths in 1910.—Dr. W. H. Sharpley, Commissioner of Health of Denver, reports that during the year, 3,518 deaths occurred, of which 1,224 were from general diseases; 300 from nervous diseases; 380 from circulatory diseases; 412 from respiratory diseases; 325 from digestive diseases; 262 from genito-urinary diseases and 238 from external causes. Tuberculosis in all forms caused 690 deaths and pneumonia 328 deaths.

Sanitarium for Colored.—The National Lincoln-Douglas Sanatorium and Consumptive Hospital Association has begun a series of meetings to promote interest in an institution for the care of colored individuals suffering from tuberculosis. —James Polk Taylor, formerly a slave, and his wife have donated 480 acres of land at Calhan, forty miles east of Colorado Springs to the Charles Sumner Tuberculosis Association, as a site for a national tuberculosis sanatorium for negroes of the United States.

ILLINOIS

Money for Medical School.—The budget of the University of Illinois, which amounts to \$3,551,000 asked to be appropriated by the present legislature, includes an item of \$200,000 for the maintenance of the college of medicine.

Tuberculosis Dispensary Open.—The new free dispensary organized by the Springfield Tuberculosis Association, was formally opened, January 23. The dispensary will be open from 10 to 11 on Monday, Wednesday and Friday mornings, and at the same hour on the first and third Saturdays of each month, children will be examined and treated.

Personal.—Dr. Joseph M. Wallace, Aledo, is reported to be seriously ill with pneumonia. —Dr. Franklin N. Odbert, Indianola, is ill at his home with influenza. —Dr. Walter F. Wessels, Mendon, sailed for Germany, February 1. —Dr. Green E. Hill, Girard, is ill at his home with influenza. —Dr. Lemuel L. Silverthorn, Charleston, who has been seriously ill is reported to be improving.

Elections.—At the annual meeting of the Winnebago County Medical Society, held in Rockford, January 10, Dr. William H. Fitch was elected president; Dr. Allen C. Eakin, vice-president; Dr. Frank W. Hanford, secretary-treasurer; Dr. William E. Park, censor; and Dr. Charles E. Crawford, delegate to the state society, all of Rockford. —At the annual meeting of Sangamon County Medical Association, held in Springfield, January 9, Dr. George F. Stericker was elected president and delegate to the state society; Dr. William A. Young, vice-president and alternate delegate to the state society; and Dr. Otto H. Deichmann, secretary-treasurer, all of Springfield.

Chicago

Personal.—Dr. Thomas O'Malley has been appointed a member of the Chicago school board. —Dr. Earl J. Brown was attacked near his home, January 23, beaten into insensibility, and robbed of money and jewelry.

New Hospitals.—The Missionary Sisters of the Sacred Heart of Jesus are erecting a new hospital to be known as the Columbia Extension Hospital for the free use of the deserving poor, regardless of race, creed or color. The institution is located at Lytle and Polk Streets and will be dedicated, it is expected, in April or May. —An ordinance was passed, January 30, providing for the purchase of land at North Fortieth and Bryn Mawr Avenues on which to construct a tuberculosis hospital.

INDIANA

Public Drinking Cups.—Dr. Charles S. Woods, secretary of the Indianapolis Board of Health is preparing an ordinance prohibiting the use of public drinking cups.

Expelled from Medical Society.—The LaPorte County Medical Society is said to have expelled Dr. Johann H. William Meyer, charged with the performance of criminal abortion.

Anniversaries.—On January 17, Dr. William H. Wishard, Indianapolis, celebrated his ninety-fifth birthday.—Dr. General W. H. Kemper, Muncie, celebrated on Dec. 31, 1910, the fiftieth anniversary of his entrance into the practice of medicine.

State Board Election.—The Indiana State Board of Medical Registration and Examination, at its meeting held in Indianapolis, elected the following officers: president, Dr. William A. Spurgeon, Muncie (reelected); vice-president, Dr. James M. Dinnen, Fort Wayne; secretary, Dr. William T. Gott, Indianapolis (reelected, and treasurer, Dr. Moses S. Canfield, Frankfort.

License Revoked.—The State Board of Medical Registration and Examination at its meeting, January 18, is said to have revoked the license to practice medicine of Dr. Charles D. Pettigrew, Logansport, for alleged fraudulent advertising, the complaint being made by Dr. Rodney E. Troutman, Logansport, president of the Cass County Medical Society. Dr. Pettigrew has taken an appeal from the action of the board.

Personal.—Dr. Thomas L. Taylor, Indianapolis, has been appointed physician to the Indiana School for Feeble-Minded Youths, Fort Wayne.—Dr. William F. Houk, Crown Point, Deputy Coroner of Lake County, was seriously injured, January 14, in an automobile explosion, and it is feared may lose his sight.—Dr. Harry B. Leavitt, Worthington, has been elected superintendent and Dr. W. A. Gekler, Indianapolis, assistant superintendent of the State Tuberculosis Hospital, Rockville.—Dr. George E. Clements, Crawfordsville, is spending the winter in Berlin and Vienna.—Dr. Walter J. Mitchell, North Vernon, has been elected clerk of the circuit court of Jennings County.—Dr. George Murphy, Leo, is reported to be critically ill in St. Joseph's Hospital, Fort Wayne.—Dr. Frank M. Morrison has been reelected president of the Board of School Directors of Indianapolis.—Dr. Richard B. Wetherill, Lafayette, sustained serious injuries in an automobile accident, January 9.—Dr. Victor V. Cameron, West Marion, has succeeded Dr. George R. Daniels as coroner of Grant County.—Dr. Walter H. Peters, Lafayette, recently underwent operation at Rochester, Minn., and is reported to be convalescent.—Dr. Kent K. Wheelock, Fort Wayne, has returned from abroad.

IOWA

Upholds State Board.—The attorney-general ruled, January 3, in refusing Dr. J. W. Crofford, Decatur, a renewal of his license to practice medicine in the state, that the State Board of Health had acted rightly in refusing to cancel the revocation of Dr. Crofford's license.

Acquitted.—Dr. Arnold Jolly, Hamburg, accused of causing the death of Mrs. Fanny Noblett, May 13, 1910, by a criminal operation, was declared not guilty by the jury, January 14. The defendant was returned to the county jail, however, to answer to a rather similar indictment.

Staff for Children's Home.—At the annual meeting of the medical staff of the Iowa Children's Home, Des Moines, January 5, the following officers were elected: president, Dr. James W. Cokenower; secretary, Dr. Bernard J. Callahan; oculists, Drs. William W. Pearson and Charles M. Werts; surgeon, Dr. James W. Osborn; dermatologist, Dr. Edward R. Posner; neurologist, Dr. Francis A. Ely and members of the attending staff, Drs. Nellie S. Noble, Joseph A. Goodrich, Bernard J. Callahan, Robert L. Parker, L. M. Nourse and R. G. Davis.

Personal.—Dr. Francis E. McGlone, Mason City, was seriously injured by falling on an icy walk near that town, January 10.—Dr. and Mrs. George H. Stanger and daughter, Boone, sailed for Europe, January 25.—Dr. Frank H. Hanson, Magnolia, was seriously injured in a runaway accident, January 4.—A recent fire in Marengo destroyed the office fixtures, instruments and books of Dr. Edgar B. Henderson.—By a fire in Albia, Dr. Taylor R. Jackson sustained a loss of \$1,000.—Dr. Irenarch S. Buzzard, Russell, has returned from abroad.

KENTUCKY

Election.—The Nicholas County Medical Society, at its meeting in Carlisle, elected Dr. Benjamin F. Reynolds, president; Dr. Malcolm Dills, vice-president and Dr. John M. Wells, secretary-treasurer, all of Carlisle.

Tenement House Law.—The first case to be tried in the ordinance court under the new tenement-house law will come up February 2. The health officer has sworn out a warrant against the owner of a tenement house, stating that there is no light on the stairway; that the house is without water on the different floors and that garbage cans are not provided.

Personal.—Dr. Stephen Sharp has been appointed bacteriologist of the Covington Health Department, vice Dr. John Batte, resigned.—Dr. Thomas J. Slaton, Greenville, has been appointed health officer of Muhlenberg County.—Dr. William A. Wright, Corn Creek, has been appointed health officer of Trimble County, vice Dr. Charles P. Harwood, Milton, resigned.—Dr. Clarence P. Burnett, Paducah, has been appointed city health officer and registrar of Paducah and registrar of McCracken County, vice Dr. Shandy Z. Holland, resigned on account of ill health.

MARYLAND

Election.—At the meeting of the Cumberland Academy of Medicine, January 18, Dr. James T. Johnson was elected president; Dr. Edwin B. Claybrook, vice-president, and Dr. John R. Littlefield, secretary-treasurer.

State Hospital Report.—During the fiscal year ended Nov. 1, 1910, 672 patients were treated in the Maryland Hospital for the Insane near Catonsville. Of these, twenty-seven were discharged, eighteen of which were recovered, five improved and four unimproved. During the year there were forty-seven deaths.

Personal.—Dr. McPherson Crichton, Washington, D. C., was acquitted in the circuit court, Rockville, Md., January 23, on the charge of manslaughter, as a result of an automobile accident in August last. So weak a case was made out that the judge did not allow the case to go to the jury.—Dr. Thomas Z. Offutt, Granite, is reported to be seriously ill.—Dr. George Wells, for several years chief of the staff of the Annapolis Emergency Hospital, has resigned and Dr. James J. Murphy has been appointed in his stead. Dr. W. S. Welch has been appointed secretary of the staff and Drs. J. Oliver Purvis, Louis B. Henkel and James J. Murphy, have been made the executive committee.

Baltimore

Small-Pox on Steamer.—The steamship *Main*, from Bremen via New York, was detained at Quarantine, January 23, on account of the existence of a case of small-pox in one of the passengers.

Enlargement of Hospital.—Plans are being made for the addition of another story to the Maryland General Hospital, which will give accommodation for seventy-five additional patients and will add to the institution, two operating rooms and a sun-parlor.

Personal.—Dr. Hugh H. Young gave a reception, January 28, to Seymour Thomas, a portrait painter of Paris, when a portrait of Dr. William Osler, by the latter, was exhibited.—Dr. Thomas Harris Cannon is reported to be critically ill with uremia at the University Hospital.

Gift to Crippled Children's School.—Mrs. William Painter has added \$10,000 to her donation to the Crippled Children's School near Catonsville, making her entire gift \$30,000. This will enable the institution to remain open the year round, instead of being closed in the winter as at present.

Dental Dispensary for Children.—On October 1, Mrs. Henry Barton Jacobs will open a dental dispensary exclusively for children at the Robert Garrett Hospital for Children. This is said to be the first dental dispensary to be established in the country and it will be under the charge of Dr. D. Edward Duff.

MASSACHUSETTS

New Site for Hospital.—The trustees of the Foxboro State Hospital for Inebriates have chosen a site for the new institution in the town of Norfolk, containing 640 acres, and the governor and executive committee have approved this choice.

Society Centennial.—The Boylston Medical Society celebrated its centenary by a dinner at the Harvard Union, January 6. Dr. John L. Morse, the president, was toastmaster and the speakers included many prominent professional men of New England.

Fined for Failure to Report.—Dr. George Reinherz, East Boston, and Dr. Elmer L. Brine, Boston, are said each to have been fined \$50 for failure to report cases of ophthalmia neonatorum within six hours of birth of children so afflicted. In the latter case, the sentence was suspended and the defendant placed on probation.

Mental Disease Clearing House.—Massachusetts has begun at a cost of \$500,000 the erection of a State Psychopathic Hospital in Boston which is expected to be in full operation in about a year. The institution is to be the receiving, classifying and distributing center for patients ill with mental diseases. The hospital expects to keep about one hundred patients, regularly in the wards, the other 1,400, which it

expects to receive, being sent elsewhere for treatment suited to the separate needs of the individual.

Personal.—Dr. Osmyn Baker has been reelected city physician of Northampton.—Dr. George G. Sears, Boston, is recuperating in Los Angeles after a severe illness.—Dr. Thomas F. Leen has been elected a member of the school committee of Boston.—Dr. Thomas F. Harrington has been appointed physician in chief of St. Elizabeth's Hospital, Boston; Dr. Michael J. Cronin, assistant; Dr. William A. Brooks, head of the surgical staff, and Dr. Edward A. Snapple, assistant. A new site has been purchased for the institution in Brighton.

Money to Hospitals.—A bequest of \$25,000 to the Holyoke City Hospital is contained in the will of the late William Whiting.—Mrs. Sarah H. Swan has in her will bequeathed \$5,000 to the Cambridge Hospital.

MICHIGAN

Free Beds for Students.—Dr. Frank W. Smithies has placed two beds in his private hospital, Ann Arbor, at the disposal of needy students of the University of Michigan. The only restriction is that patients with contagious diseases will not be admitted.

Health Officer Fined.—Dr. Myron A. Patterson, health officer of Flint, is said to have been convicted, January 21, of "wilfully and maliciously exposing Under Sheriff Frank Green to small-pox," during the epidemic in November, and to have been sentenced to a fine of \$25 with the alternative of imprisonment in jail. Dr. Patterson resigned as city health officer, January 23, and the resignation was accepted to take effect, January 30.

Personal.—Dr. G. Carl Huber, professor of Histology and embryology in the University of Michigan, Ann Arbor, resigned as secretary of the Department of Medicine, January 19, to accept the headship of the new department of embryology for the Wistar Institute of Anatomy, Philadelphia. Dr. Charles W. Edmunds, professor of therapeutics and materia medica, has succeeded Dr. Huber as secretary of the department.—Dr. John F. Byington, Battle Creek, who has been seriously ill with erysipelas, is reported to be improving.—Dr. Bion Arnold, Denton, while crossing the car tracks in the village, January 22, was struck by a car and seriously injured.—Dr. Elmer L. Eggleston, Battle Creek, has returned from Europe.—Dr. Burt R. Shurly has been elected vice-president of the Detroit Tuberculosis Sanatorium and Drs. Charles G. Jennings, Burt R. Shurly and Herbert M. Rich have been elected members of the board of directors.

MISSOURI

Suit Dismissed.—By agreement, the suit of the state, at the instance of Dr. William F. Kuhn, against the board of managers of State Hospital No. 2, St. Joseph, for \$250 and his living expenses as superintendent of the hospital was dismissed, January 17, at the defendant's cost.

Personal.—Dr. William G. Cowan, formerly of Sedalia, is reported to be critically ill with pneumonia at his home in Carlsbad, New Mexico.—Dr. John Ashley, Bloomfield, has resigned as a member of the State Board of Health.—Dr. Milton P. Overholser, Harrisonville, has been elected superintendent of State Hospital No. 3, Nevada.

Conviction for Abortion.—In the case of Dr. G. Emil Dargatz, Kansas City, charged with the performance of a criminal operation, which caused the death of Mrs. Marion Hawkins, last September, the jury in the criminal court is said to have found the defendant guilty and a sentence of imprisonment in the county jail and a fine of \$50 was imposed, January 13.

NEW YORK

To Have Women Interns.—Women have been substituted for men in the Hempstead Hospital, of which Mrs. O. H. P. Belmont is president.

Election.—The Fulton Physicians and Surgeons' Association, at its annual meeting, January 18, elected the following officers: president, Dr. Edward M. Anderson; vice-president, Dr. Harriet M. Doane; secretary-treasurer, Dr. Sylvester D. Keller, and censors, Drs. Frank E. Fox, Willis M. Wells and Harvey J. Trepening.

Personal.—Charles F. Wheelock, who was formerly chief of the examinations division of the state Department of Education, Albany, has been promoted to the position of second assistant commissioner of education. The new chief of the examinations division is Mr. Harlan H. Horner, to whom all requests for information regarding state license examinations should be addressed.—Dr. Thomas W. Salmon,

passed assistant surgeon, U. S. P. H. and M.-H. Service, has been appointed a member of the board of alienists by the New York State Commission in Lunacy.

New York City

Harvey Society Lecture.—The fifth lecture in the Harvey Society course, by Dr. Thomas B. Osborne of the Connecticut State Agricultural Experiment Station, February 4, is on "Chemistry of the Proteins."

Personal.—Dr. Joseph L. Hicks, Flushing, L. I., has been appointed physician emeritus to the Flushing hospital. Dr. Hicks is about to retire from active practice.—Dr. Elizabeth A. Bruyn, Brooklyn, has been appointed ambulance surgeon to the Williamsburg hospital.

Sanatorium for Hebrew Children.—At the annual meeting of the officers and directors of this institution it was reported that 3,680 mothers and children were cared for during the last summer and 11,476 mothers and children were taken on boat and railroad trips to summer resorts. Although so many were treated during the summer there were only six deaths in the institution.

Verdict Against Physicians.—A verdict was returned, January 10, against Dr. George T. Steward, formerly superintendent of the Metropolitan Sanitarium, Blackwell's Island, and Dr. Ralph W. Thompson, for performing an autopsy without authority. The plaintiff admitted signing a permit for the autopsy, but said that the physicians had told her that this was necessary before she could remove her sister's body.

Bequests.—The appraisal of the estate of John Stewart Kennedy, who died Oct. 31, 1909, shows the amount to be distributed as \$65,659,000 of which \$2,858,000 is given to the Presbyterian Hospital.—William F. Wardwell, formerly president of the New York State Red Cross Society, in his will bequeaths \$100,000 to the New York Red Cross Hospital, contingent on the death of his widow, and on condition that the hospital use no alcohol in any form in the treatment of its patients.

NORTH CAROLINA

Laboratory for Sanatorium.—The Charlotte Sanatorium has obtained a permit for the erection of a clinical and pathologic laboratory.

Personal.—Dr. Joseph Graham, Durham, announces his retirement from general practice and his intention to devote himself entirely to surgery.—Dr. Edwin G. Moore, Elm City, has resigned as director of the State Hospital for Colored Insane, Goldsboro, and has been appointed a director of the State Hospital for Insane, Raleigh.—Dr. Thomas A. Mann, Durham, was seriously injured by coming in contact with a barbed wire fence, January 16.

Hookworm.—Dr. John A. Farrell, assistant secretary of the State Board of Health in charge of the hookworm work in the state, has issued a summary of his work up to January, which shows that 14,000 cases of the disease have been treated; approximately 50,000 people have been informed in public lectures of the symptoms and the effect of hookworm infection; 34,000 school children have been visited and inspected and reports have been received from 838 practitioners relative to the existence of hookworm in their practice. Of 5,552 microscopic examinations of human feces, 42 per cent. were found to be infected with hookworm.

NORTH DAKOTA

District Society Meeting.—At the annual meeting of the Northwestern District Medical Society, held in Minot, January 21, the following officers were elected: president, Dr. Archibald D. McCannel, Minot; secretary-treasurer, Dr. G. Roy Ringo, Minot; censor, Dr. Joseph T. Newlove, Minot; delegates to the state society, the president, and Dr. E. W. Blatherwick, Drake, and alternates, Drs. Andrew Carr, Minot, and F. A. Brungman, Drake.

OHIO

Personal.—Dr. Lewis Kahn has been reappointed a member of the health board of Columbus.—Dr. Thomas E. Craig, Sabina, has retired from practice and gone to Florida to recuperate.

Tablet Unveiled.—On the occasion of the semi-annual clinic at St. Vincent's Hospital, Toledo, January 19, the memorial tablet to Dr. James Donnelly given by the medical staff of the hospital was unveiled.

Failure to Report Diseases.—Nine physicians of Cleveland have been summoned to appear before the health board to explain their failure to report cases of communicable diseases. In most instances, the disease not reported was pneumonia.

Cincinnati

Clinical Society Meeting.—The Clinical Society of the Cincinnati Hospital at its first meeting, January 19, elected Dr. Frederick Forchheimer, president, and Dr. Simon P. Kramer, secretary-treasurer.

Personal.—Dr. Christian R. Holmes has been appointed a member of the commission to build the new city hospital.—Dr. August C. Busch, Hyde Park, has been elected state medical director of the Catholic Knights of Ohio.—Dr. Asa B. Isham has been elected president; Dr. Byron L. Stanton, vice-president; and Charles L. Bonifield, secretary of the board of medical directors of the Cincinnati Hospital.

PENNSYLVANIA

Philadelphia

Tuberculosis Talks in Public Schools.—The Board of Education has arranged for a series of lectures, through the generosity of the Pennsylvania Society for the Prevention of Tuberculosis, to be given in several elementary schools. The lectures will deal with personal and civil hygienic measures necessary in order to eradicate the disease.

Open-Air Schools Postponed.—Plans for the establishment of the open-air schools in Philadelphia for children, affected with tuberculosis, have been given up for the time, because of lack of funds. However, physicians are making an inspection of the public school children to ascertain the number affected with tuberculosis in any stage, as well as anemic and undernourished children, who would be fit candidates for such schools.

Personal.—Samuel Bell, Jr., was elected a trustee of the Medico-Chirurgical College, January 16.—Dr. Allen J. Smith, dean of the Medical School of the University of Pennsylvania, was the guest of honor at the annual smoker of the alumni of Seranton December 27.—Dr. J. Chalmers DaCosta has been appointed visiting surgeon to St. Joseph's Hospital.—Dr. Alfred Stengel has resigned as visiting physician of the Philadelphia General Hospital, and Dr. William Pepper has been appointed his successor.—Dr. Samuel G. Dixon has been elected a trustee of the University of Pennsylvania.

Blockley Short of Funds.—When Councils' Finance Committee appropriated \$75,000 to the Department of Health and Charities for the labor roll at the Philadelphia General Hospital and Almshouse, it provided nothing for material, and this will necessitate laying off about 75 employees. The same condition existed last year but later Councils appropriated \$10,000 for materials. The sum of \$150,000 was asked for the construction of a new boiler house and boilers, but only \$15,000 was given. Councils did give the department money for the installation of new automatic fire alarm system for the general hospital.

UTAH

Official Organ for State Association.—The Utah State Medical Association has completed arrangements with *Northwest Medicine* by which the latter—instead of the *Denver Medical Times*—will serve as its official journal for the ensuing year. The association, therefore, will not have a separate official organ as THE JOURNAL was at first informed.

WASHINGTON

Elections.—King County Medical Society, at its annual meeting, January 2, elected the following officers: president, Dr. George B. McCullough; vice-president, Dr. Harrison A. Wright; secretary-treasurer, Dr. Herbert E. Coe, and delegates to the state association, Drs. Frank M. Carroll, George B. McCullough; George N. McLoughlin, Frank T. Maxson, Richard J. O'Shea, Richard W. Perry and C. Benson Wood, all of Seattle.—Whatcom County Medical Society, at its annual meeting in Bellingham, elected the following officers: Dr. Fred V. Shute, Bellingham, president; Drs. Frank A. Wheaton, Bellingham; Eugene S. Clark, Sumas, and Charles S. Hood, Ferndale, vice-presidents; Dr. Ernest D. Hatch, Bellingham, secretary; Dr. Edward C. Ruge, Bellingham, treasurer, and Drs. Lemon R. Markley and Hays A. Compton, Bellingham, delegates to the state association.

WISCONSIN

Personal.—Dr. Edward C. Schmittker, Milwaukee, sentenced to imprisonment for six years and revocation of license in February, 1908, on account of the performance of a criminal abortion, has been on parole for a year past and was unconditionally pardoned by the governor, January 12.

The Hospital Question in Milwaukee.—The Milwaukee County Medical Society disapproves of the proposed purchase of the Schandelin house as a maternity hospital on account of the impossibility of remodeling the building into a modern hospital. An isolation hospital for children suffering from contagious diseases is considered the great need of the city, and Pabst Park has been suggested as a site for this institution.

Medicine Sample Kills.—The jury in the case of Martin O'Donnell, Oconto, versus the M. W. Marshall Medicine Company, Fond-du-Lac, is said to have returned a verdict for \$666 for the plaintiff, and also to have found that a relative of the defendant had been guilty of contributory negligence. An agent of the defendant company had distributed samples of a rheumatism medicine in Oconto, and a small daughter of the plaintiff fed an infant the contents of the bottle left at the house by the distributor, resulting in the death of the baby.

Society Meetings.—The Seventh District Medical Association, at its annual meeting in LaCrosse, December 22 and 23, elected Dr. Eugene H. Townsend, New Lisbon, president; Dr. Edward F. Christian, LaCrosse, vice-president; Dr. Charles H. Marquardt, LaCrosse, secretary.—At the annual meeting of the Eau Claire District Medical Society, Dr. Ralph R. Chase, Eau Claire, was elected president, and Dr. Everett L. Mason, Eau Claire, was reelected secretary-treasurer.—Rock County Medical Society, at its meeting in Beloit, December 27, elected Dr. George W. Fifield, Janesville, president; Dr. William J. Allen, Beloit, vice-president; Dr. Edwards B. Brown, Beloit, secretary-treasurer, and Dr. Frank W. Van Kirk, Janesville, censor.—Twin City Medical Society, at its annual meeting in Menasha, January 3, elected the following officers: president, Dr. Samuel G. Todd, Neenah; vice-president, Dr. Frank M. Corry, Menasha, and secretary-treasurer, Dr. Samuel D. Greenwood, Neenah.—At the annual meeting of the Douglas County Medical Society, held in Superior, Dr. Fred G. Johnson, Iron River, was elected president; Dr. Thomas J. O'Leary, Superior, vice-president; Dr. Royal K. Lohmiller, Superior, secretary-treasurer, and Dr. Charles H. Mason, Superior, censor.

FOREIGN NEWS

The Indian Ambulance Gazette.—With the beginning of the new year the Indian branch of the St. John Ambulance Association began the publication of an official organ named the *Indian Ambulance Gazette*. This association, under the emblem of the white cross, has organizations throughout the world for rendering public first aid in time of pestilence, great disasters or war, similar to the organization of the Red Cross. The Indian branch was organized in 1887 and has grown encouragingly so that an official organ became necessary in carrying out its purposes. The gazette will be published quarterly. The first number contains a considerable fund of information, historical and otherwise, as well as the late news of the organization in India and other parts of the world.

Plague in the Far East.—Cabled news in the daily papers indicates that the plague situation in China has become no worse during the past week. The state department is said to have cabled the American minister at Peking to ask medical missionaries to volunteer in response to the invitation of China to the leading powers of the world to send commissions of medical experts to study the plague and help combat it. The department is also to take up the question with the navy and treasury departments with a view of obtaining the services of naval surgeons and members of the Public Health and Marine-Hospital Service. The Pacific coast of the United States is being vigilantly guarded and the Japanese are also on the alert. The work of fighting the plague is said to have fallen almost entirely on the foreign medical missionaries in China and they are bravely grappling with the task. In the two northeastern provinces of China, where Peking is situated, there are said to be thirty-seven hospitals and thirty-five dispensaries in charge of foreign medical missionaries; fifty are Americans, including twenty-four women. The two districts have a long and diversified coast frontage and are bounded on the northeast by Manchuria where the plague is raging. The two districts extend about 700 miles north and south and about 500 miles east and west, an area nearly four times that of New York state, with a population six times that of the state. The hope of a racial immunity to the plague is proving unfounded; two European physicians had died at Harbin from pneumonic plague, the type prevailing there now, and one Japanese physician by January 28.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 21, 1911.

A Clean Milk Campaign

The National League for Physical Education and Improvement has started a "clean milk campaign." Recognizing that few matters are of greater importance in promoting the health of the nation than a pure milk-supply, the association has determined to make an effort to impress on farmers, milk retailers and consumers alike the necessity for certain precautions with regard to the distribution and consumption of milk. A series of leaflets addressed to each of these classes has been adopted for circulation by a considerable number of public bodies.

Sir Francis Galton

Sir Francis Galton, F.R.S., died at Haslemere, Surrey, January 17, in his 89th year, from bronchitis complicated by congestion of the lungs. He was born in Warwickshire and was a cousin of the author of the "Origin of Species." While second only to Charles Darwin in eminence as a biologist he surpassed him in versatility. Traveler, meteorologist and anthropologist, he made his mark as a writer on all these subjects. On his father's side he was of ancient Quaker stock. By the wishes of his parents he studied medicine but at the age of 22 he found himself, on the death of his father, with a fortune sufficient to render him independent and began traveling. He went through Egypt and explored a large part of Africa for which he was rewarded with the gold medal of the Geographical Society. In 1855 he wrote "The Art of Travel, or Shifts and Contrivances Available in Wild Countries," which has been a *vade-mecum* to travellers ever since. In 1861 he turned his attention to meteorology and described a method of recording the state of the weather over a wide area by means of charts, and this method has been used by meteorologists ever since. In 1862, he introduced the term anticyclone which figures so frequently in modern meteorologic reports.

His name, however, is best known in connection with anthropology. The distinguishing feature of his work was the use of statistical methods. In 1869, he published "Heredity and Genius" in which he aimed to show that genius was mainly a matter of ancestry. In 1874, appeared "English Men of Science: Their Nature and Nurture" which was suggested by de Candolle's book analyzing the salient events in the history of 200 men who had lived in the preceding two centuries. In the next year he drew up two sets of forms which he hoped would lay the foundation of the practice of maintaining trustworthy life histories that would be of medical service in after-life to the person keeping them, and would promote the registration of much information at present wasted, and assist future inquiries into the problems of heredity. One of these, the "Record of Family Faculties," contained tabular forms to facilitate the collection of facts which are important to a family from a hereditary point of view and which may be used to forecast the mental and bodily development of future generations. The other, a "Life History Album," afforded a continuous register of the principal biologic facts of its owner. In 1904, appeared a study of the distribution of successes and of natural ability among the kinsfolk of fellows of the Royal Society. In 1901, he initiated the science which he termed "eugenics." He applied his studies in heredity to a discussion of the possibility of improving the human race under existing conditions of law and sentiment. He aimed at putting the problem of race improvement on a scientific basis, and showed statistically that economy of cost and labor in improving the race must depend on attention to parentage. He also applied himself to many other statistical and anthropologic studies. For example, he carried out a statistical inquiry into the efficacy of prayer and came to a decidedly negative conclusion. The question of visions also engaged his attention. He concluded that, however obscure and ill-explained they may be, they belong for the most part if not altogether to "an order of phenomena which no one dreams in other cases of calling supernatural." He further suggested that in view of the vast multiplicity of mental operations in simultaneous action, much of what passes for supernatural is merely the result of one part of the mind being contemplated by another part, as if it were that of another person. His system of composite portraits, which is a process of pictorial statistics which yields an average analogous to that of arithmetic, is now well known. Thus, if the portraits of a number, say of consumptives or criminals of a particular kind are optically superimposed, individual peculiarities are eliminated and the result may be looked on as the type of the class.

To the study of finger prints with which his name is so closely associated his attention was drawn while preparing a lecture on Bertillon's anthropometric method in 1888. He realized the importance of the papillary ridges as anthropologic data. He analyzed the forms and patterns of the ridges, discussing their evidential value by the laws of probability, and investigated their significance (which was far less than he expected) as indications of race and temperament. In 1895, appeared "Finger-Print Directories" in which he showed how finger prints might be used to identify a person. This method, combined with Bertillon's primary measurements, has been adopted for criminals by many governments.

A Doctor's Heroism in a Railway Accident

Details have reached England of a disastrous railway accident at Gaika's Loop, Cape Province, South Africa, in which twenty-three persons were killed. A crowded holiday train, the passengers being chiefly women and children, was returning from East London. The train was traversing a curved embankment about 15 feet high across a gully, when six coaches toppled over to the bottom of the embankment, the couplings snapping. The accident occurred in inky darkness in a wilderness miles from help. Rescuers worked with hand lamps from the train and a bonfire made of the debris of the wrecked coaches. One of the passengers was Dr. Robertson of Cathcart, who had three ribs broken. Despite this he was carried from place to place directing the treatment of the injured until he fainted from pain and exhaustion. The survivors declare that he deserves the Victoria Cross. There was another physician in the train but he was pinned down and helpless for three hours.

The Abuse of Hospitals by Out-Patients

The perennial grievance of the profession that the out-patient departments of the hospitals are largely attended by patients able to pay for medical advice at last is to receive systematic investigation by hospital authorities. The King's Hospital Fund (an institution founded by the late King Edward to raise money for the hospitals, which annually dispenses hundreds of thousands of pounds and has considerable influence over hospital administration) has appointed a committee to consider and report generally regarding circumstances and conditions under which patients are admitted to the casualty and out-patient departments of hospitals, and especially the precautions taken to prevent admission of unsuitable patients. In connection with this investigation the London and County Medical Protection Society (a society of physicians for defending actions brought by unscrupulous patients for the recovery of damages for alleged malpractice, and otherwise protecting professional interests) has issued a circular requesting its members to supply evidence on the following points: (1) abuse of out-patient departments by persons able to pay for medical services; (2) attendance of patients whose ailments are unsuitable for treatment in that department; (3) difficulties experienced by suitable patients in obtaining within a reasonable time admission to the medical officer on duty in that department; (4) loss caused to physicians by the competition of out-patient departments. Full, accurate and detailed statements as to specific cases are requested and not vague generalities.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 13, 1911.

First-Aid Societies and Physicians

For some time there has been a certain ill feeling in the medical profession toward the societies for rendering first aid in emergencies. The practitioners reproached these societies with having departed from their original aims to enter into an improper competition with the medical profession. The Société française de secours aux blessés militaires has founded, in Paris, a hospital-school and a series of fifty-one dispensary schools in Paris and in the provinces. These establishments, while intended to prepare their pupils to be of service in time of war, are meanwhile doing a philanthropic work. According to the reports of the society more than 300,000 free dressings were distributed among the poor by the dispensary schools; but physicians are informed that, in reality, it is not the poor alone who receive dressings and care of all kinds and for all diseases, but any one whatever. Moreover, ladies with diplomas from such societies give electric treatments or vaccinations, make injections of physiologic serum or of sea-water, treat whitlows or give advice which

may at least embarrass the physician, by directly or indirectly diminishing his patients' confidence.

Salvarsan in Ocular Syphilis

Dr. de Lapersonne, professor of clinical ophthalmology at the Faculté de médecine de Paris, on January 10, made, with Dr. A. Léri, a report on the use of salvarsan in ocular syphilis. Their results tend to show that there is no reason to magnify the harmful effects of salvarsan on the eyes. One of the principal reasons is that the mode of application in one or in several injections, at intervals, when the elimination through the kidneys is finished, is altogether different from that of the other arsenical preparations, such as atoxyl, which are used in repeated doses and which produce more or less rapid toxic retrobulbar neuritis. As for the efficacy of the drug, Drs. de Lapersonne and Léri agree that salvarsan acts very favorably and very quickly in certain simple cases of iritis or of interstitial keratitis, but that it is powerless, as might be supposed, in those forms of iridochorioiditis of which the causes are frequently multiple and of which the consequences are so serious to all parts of the eye. In recent cases of optic neuritis and of ocular paralysis, these observers are encouraged to inject large quantities in view of the remarkable but transitory amelioration that they have obtained. Since this improvement did not persist, there would have been reason to renew the injection, if the examination of the urine, made after the first injection, had shown the permeability of the kidneys. Like many other observers, Drs. Lapersonne and Léri have observed after a single injection, sometimes relapses, sometimes new outbreaks of ocular neuritis, in particular, two months or even a month after the treatment.

Death of Dr. Hocquart

Dr. Hocquart, director of the Ecole du service de santé militaire de Lyon, has just died, aged 58. Dr. Hocquart served in the campaigns of Tongking and Madagascar. He was director of the service of military hospitals at Clermont-Ferrand.

The Refilling of Medical Prescriptions

In one of my previous letters (THE JOURNAL, Aug. 7, 1909, p. 468) I mentioned the case of a certain Vallanet, a self-styled doctor who illegally practiced medicine without a diploma in Paris for more than ten years. Vallanet has recently been sentenced to pay damages of \$400 (2,000 francs) each to the Syndicat des médecins de la Seine and to the Syndicat médical de Paris, both of which were civil parties to the prosecution. The pharmacist who filled his prescriptions was also prosecuted, and the question of refilling prescriptions, especially those calling for poisonous substances, came up. The pharmacist in his defense cited the common practice of refilling prescriptions. The court did not admit this line of defense. Even though there exists among pharmacists a regrettable custom of refilling old prescriptions which contain only harmless substances, according to the French law, poisonous substances can be sold for use in medicine only by pharmacists and on the prescription of a physician, which must be dated. The pharmacist was fined \$100 (500 francs) for delivering poisonous substances without a new prescription. The decision is an important one, as it tends to restrain the practice of refilling prescriptions.

Reorganization of the Medical Course

A delegation from the Association corporative des étudiants en médecine called on the minister of public instruction and the director of higher education to learn the conditions of the application of the decree of Jan. 11, 1909, with regard to the reorganization of the medical course (THE JOURNAL, March 13, 1909, p. 902), to which a fifth year has now been added. The first question is whether the students of the P. C. N. (certificate of physical, chemical or natural studies required as a preliminary of medical candidates) are students in medicine. If they are, it would be difficult to demand that P. C. N. students who enter the medical schools at the time when the new régime is put in force should take five years, as this would make the new decree retroactive. If those who are now students for the P. C. N. are not yet medical students, they should take five years.

In regard to the hospital stage, nothing will be changed in Paris. At present there are in Paris twenty professors of various clinics, but thirty physicians or surgeons of the hospitals are authorized to receive *stagiaires* and to accept fees. The students would like to have the privilege of enrolling themselves in any of the hospital services. The director of

higher education believes that this desire can scarcely be reconciled with the necessities of instruction. He says that the reform will be put in force as soon as the sum of \$300,000 (1,500,000 francs) becomes available for the needed increase of the equipment of the laboratories and of the auxiliary teaching force.

Epilepsy and Constipation

On December 27, Dr. E. Doumer, professor at the Faculté de médecine de Lille, made an interesting report to the Académie des Sciences, on the rôle of constipation in the pathogenesis of epilepsy. Professor Bouchard had expressed a belief in a very close relation between epileptiform phenomena and imperfect intestinal functioning, and Doumer reported some cases in which therapeutic results seemed to confirm this belief. A child of 7, who for a year had had crises of epilepsy almost every day, suffered also from a very pronounced condition of mucomembranous enterocolitis, for which a severe régime had been carried out for six months without result. Doumer gave the little patient abdominal treatment by intense percutaneous galvanization, and after the third treatment, not only did the stools become normal, but the crises of epilepsy became less frequent and disappeared at the end of three weeks. The cure has been maintained for seven years.

The result was equally good in two other epileptics, aged 19 and 21 respectively, who also suffered from constipation. It goes without saying that the administration of bromids was stopped entirely from the time the electric treatment was begun on the three patients, Dr. Doumer confining himself to prescribing as adjuvant treatment a diet rich in vegetables and poor in meat and entirely cutting off alcohol.

The Medical Direction of Insane Asylums

At a recent session of the general council of the department of the Seine, the council was reminded that long ago it passed a resolution that each asylum should have a physician as its head, as is the case in most foreign countries. In France, by a curious anomaly, the superintendency of these asylums is considered by the ministry of the interior, which has the power of nomination, as a resource to provide for political derelicts. Hence it happens that the men appointed to these posts frequently have none of the special knowledge requisite for the work. Because of the disadvantages which arise from the division of responsibility, the necessity was conceded of uniting the medical and administrative directorship in superintendents chosen from among specially qualified physicians selected by special examination. To make this resolution effective, the general council has adopted the course of voting the salary of the administrative superintendent for only six months of 1911. Thus if a position of administrative superintendent becomes vacant, the government may, if it wishes, appoint a non-medical man, but he will not be paid, for the general council will vote the second part of the salary to the acting superintendent, but will refuse to pay the new superintendent.

Budget of the Public Charities

The budget of the Public Charities this year amounts to \$16,200,000 (81,000,000 francs), a sum much greater than those of preceding years. The floods in 1910 occasioned an outlay of \$348,500 (1,742,500 francs). In 1910 the increased cost of provisions was felt, the results being naturally more considerable because they affect an enormous consumption. The same condition will have to be reckoned with in 1911. The strictest economy is recommended; and it is believed that there are abuses which a more rigorous oversight would check; for instance, the consumption of gauze for dressings in 1909 was six times what it was in 1890.

Liability of a Pharmacist for Damages for Having Given Medical Advice

A cook, having fallen on her shoulder, went to a pharmacist for a lotion and the address of a physician; the pharmacist's clerk gave her the first, but persuaded her that she did not need the second. He also assured the cook's employer that there was no reason for anxiety and that the cook would be able to return to work in eight days. After eight days, however, the swelling had not diminished and a physician was sent for who diagnosed a luxation of the shoulder, necessitating a surgical operation because of the length of time that had elapsed since the accident. The cook therefore brought suit against the pharmacist, first for the reimbursement of the expenses which she had incurred, amounting to over \$400, and a similar sum as damages. The court sustained her claim.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 12, 1911.

Personal

Professor Mosler, formerly director of the clinic for internal medicine in Greifswald, died January 7, aged 79. He joined the faculty of Giessen as privat-docent in 1858 and was chosen in 1864 as regular professor at Greifswald. In 1899 he retired, not voluntarily but at the request of the minister of education because it was established that Mosler's activity in investigation and in teaching did not any longer meet the necessary requirements. The scientific studies of Mosler were carried on in various fields but none of them produced any notable results. He treated the subject of diseases of the spleen in Ziemssen's "Handbok of Special Pathology," and of animal parasites in Nothnagel's "Practice."

A Woman Not Admitted as Privat-Dozent

Membership in the faculty as privat-docent is not permitted to women in the states of the German federation. Heretofore there has been scarcely a request of this sort, but recently a lady, first assistant in the hygienic institute at Bonn, who had lately received the honorary title of professor from the minister of education, was sustained in her request for permission to become a lecturer by the medical faculty of that university. In spite of this, however, the department refused the request.

Protection of Medical Professional Secrets in Hospitals

A short time ago attention was called in the press to the fact that the medical secret was infringed by the writing of the diagnosis on the history sheets to be found at the head of the beds in the hospital wards, inasmuch as it is easy for the relatives of the patient or strangers to find out the meaning of the Latin name of the disease and use this knowledge to the injury of the patient. Recognizing the justice of this complaint, the city authorities have ordered that in the internal department of the municipal hospitals the diagnosis shall not be written on the card. In the surgical department the disease shall be indicated with the initials of the Latin names.

Kaiser Wilhelm Society for the Advancement of Science

The society for the erection of institutions for the investigation of natural sciences announced by the Kaiser on the occasion of the centennial of the Berlin university, was founded January 11, under the name of Kaiser Wilhelm Gesellschaft zur Förderung der Wissenschaften. The endowment fund so far available amounts to \$2,640,000 (11,000,000 marks). First there will be erected a chemical and a chemico-physical institute at Dahlem near Berlin for which the State of Prussia gives the land. The first institute will be under the supervision of Prof. E. Beckmann of Leipsic and the second under that of Prof. Dr. F. Haber of Carlsruhe. Both institutes will be devoted to pure research and will not serve any immediately practical purpose; their directors are under no obligation to teach. The entrance fee for every member of the new society is \$5,000 (20,000 marks) and the yearly dues \$250 (1,000 marks).

Workingmen's Insurance in Europe

The report just published with reference to workingmen's insurance in Europe and the present situation of legislation includes the data of the various kinds of insurance and permits a comparison of the expense entailed on trade and commerce by the social insurance in various states. From this review, it appears that only the small state of Luxemburg can be placed on the same plane as Germany in its workingmen's insurance against illness and accident. Invalid and old age insurance is also soon to be inaugurated in Luxemburg. Obligatory insurance for illness exists outside of Germany only in Austria-Hungary, Norway and Luxemburg. France has compulsory insurance for miners only. The rest of the states, particularly Italy, Great Britain, Belgium, Sweden, Denmark, Finland, Spain and the Netherlands have voluntary sick insurance for wage-earners and employees. In Germany, Austria-Hungary and Luxemburg the employers bear one-third and the employees two-thirds of the burden, while with voluntary insurance, the expense is principally borne by the laborers with state aid, as in Italy, France, etc.

Norway has an obligatory sick insurance for laborers and employees of all trades with a yearly wage up to \$390; the expense is borne six-tenths by the laborers, two-tenths by the state, one-tenth by the municipality and one-tenth by the employers.

The data regarding accident insurance are not so complete. Compulsory insurance against accident in Germany extends to all laborers and employees with a yearly wage to \$750, in industry and agriculture. In a population of 63,000,000 in 1908, there thus were 23,700,000 persons insured against accident. Besides Germany, Austria-Hungary, Italy, France, Norway, Denmark, Finland and the Netherlands have industrial and agricultural accident insurance, the income limit ranging from \$150 in Finland to \$750 in Luxemburg; it is \$500 in Germany. As is well known, invalid and old age insurance was until lately provided only in Germany. By a law passed April 5, 1910, it was also introduced into France. It will extend to all wage-earners and employees with a yearly wage up to \$600 (2,400 marks). The expenses will be borne as in Germany half by the employers and half by the employees. In addition the state will provide a contribution of \$12 (48 marks) for every annuity. The number of those compulsorily insured will amount to about 11,000,000. In Germany 15,200,000 or 24.1 per cent. of the entire population are insured against old age and invalidism. The expenses are \$46,100,000 (184,400,000 marks), or \$3 (12 marks) for each insured. Of the remaining European states only Austria-Hungary and Belgium have a compulsory insurance for miners. In Italy, Great Britain, Finland and Spain, there is also voluntary insurance; the expense is met by the premiums of the insured with additional sums paid by the state.

Infant Mortality in Germany

The infant mortality in 1909 in Germany was unusually favorable; 335,436 children of less than one year of age died, while the number in 1908 was 359,022, in 1907, 351,046 and in 1906, 374,636. There was a reduction compared with the previous year of 23,586. Among the deaths there were 288,202 (in 1908, 308,630) legitimate and 47,228 (50,342) illegitimate children. It might be assumed that the reduction of infant mortality could be referred to the general decrease of births, but a comparison of the number of births with that of deaths in the first year shows that the deaths have proportionately been very much reduced. Of a hundred born living in 1909, 17 died the first year as compared with 17.8 in 1908, 17.6 in 1907 and 18.5 in 1906. Among legitimate children, the proportion was 16 as compared with 16.8, 16.6 and 17.5; among illegitimate 26.8 as compared with 28.5, 28.0 and 29.4. The fact that even among illegimates the infant mortality has been so much reduced is a gratifying sign of the success of infant hygiene. The fact that boys are more liable to die than girls is confirmed by the figures for 1909. The percentage of deaths among boys for a hundred births was 18.4 (1908, 19.4), of girls 15.4 (16.2). Considering the individual states, Bavaria presents the most unfavorable statistics, 21.7 in 1908, and Lippe the most favorable, 10.5 (11.1). In Berlin the rate was 15.6 as compared with 16.8 in 1908, 16.3 in 1907, and 17.7 in 1906.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 19, 1911.

The New Tax on the Dispensing of Drugs

A short time ago the so-called *Arzneitaxe* (tariff for pharmaceutical substances) was promulgated by the government. This official tariff is compulsory for all apothecaries in this empire, and in accordance with the increased cost of living, its items have been raised a little. The *Taxe*, as it is called, divides the consumers of the articles sold by the apothecaries into two groups. The larger group—the general public—must not be charged less than the tariff stipulates, so as to insure a uniform dealing with all customers. The other group consists of charitable institutions and sick-benefit clubs which may obtain 10 to 30 per cent. discount. For each dispensing (selling) the chemist must charge 20 hellers (4 cents); for each mixing of liquids or ointments double that amount; for dividing a substance into ten powders at least 50 hellers (10 cents); and as much for each infusion, while all manipulations, including the boiling of substances, must be charged for at the rate of 80 hellers (16 cents) as well as the rolling of pills up to 100. For the weighing of quantities of centigrams a slight additional tax is charged, and for smaller quantities than that, the additional tax is doubled. A certain charge is fixed for the containing vessels, jars, boxes, bottles of different sizes and colors and for paper bags. As the sale of remedies after a doctor's prescription is confined to the apothecaries and certain—or rather most—of the potent drugs may not be sold at a usual chemist's shop, the apothecaries are controlled by the state and are subject to the tariff. Therefore, the making up of a prescription is fairly expensive here and public opinion is much opposed to the present system.

The Austrian Census

On Dec. 31, 1910, a census of the population of Austria was taken, as is here the custom every ten years. The results are not yet known for the whole empire, but those pertaining to Vienna are already published. The most noticeable fact is that the increase in the population has not been as great as was calculated. The actual figures for the day mentioned above was 2,004,921, which gives an increase of 302,212 over that found in 1900. The yearly increase of population in the ten years 1880-1890 was 2.51 per cent.; in the years 1890-1900 it was 2.28 per cent., while from 1900 to 1910 it was less than 2 per cent. per annum. This is due to two reasons: the diminution of immigration into the capital and the diminution of the natural increase of population by the surplus of births over deaths. The more important factor is the latter. In 1900 the number of living children born was 52,000. This figure shows a constant fall till last year it was only 45,000. The number of deaths, however, has been fairly constant, in spite of immigration. In 1900 it was 34,672. This in spite of improved sanitation—the Vienna water and drains rank first class among corresponding arrangements of European cities—which saved many a life otherwise endangered. The increase of the population has been chiefly dependent on the birth figures. The bad social and commercial conditions prevailing since 1902 have undoubtedly combined with other factors to bring about the unsatisfactory effect.

A Physician's Fate

Some time ago, a Dr. Franz in an Austrian village reported a case of typhoid fever and had the patient removed to a hospital for infectious diseases. Unluckily, just at that time maneuvers of the army were to take place in this district, and the village of Reidan, where the above-mentioned case occurred, was to have been the headquarters. On account of the typhoid patient this plan was altered and the villagers lost the prospect of pleasure and profit due to the temporary occupation. The grocers and inn-keepers of the village therefore instituted a veritable boycott against the physician. Their influence caused him to lose his appointment as district physician and his practice with the population. Finally his life, his family and his house were exposed to the greatest danger. The people wanted to starve him and his family out for having done his duty. When the infuriated peasants failed to drive the doctor away, actions for damages were brought against him. The excitement was too much for the poor doctor; he suddenly died at the age of 36 from paralysis of the heart. But now the organization of medical practitioners has cooperated and the village is under boycott. It can get no doctor until full provision has been made by the local authorities for the family of the outraged doctor. Furthermore, the government has turned its attention to the matter, so that the guilty will receive punishment. In order to prevent a recurrence of similar events, strict regulations will be made in all cases of appointments of country physicians, in which the duties of the doctor towards public health will be clearly defined. The incident shows what a doctor can expect if the population is of a low standard of enlightenment.

Marriages

DANIEL W. SCOTT, M.D., McDonough, Ga., to Mrs. A. Jennie Utz of Fincastle, Va., January 10.

HERBERT THEODORE WAGNER, M.D., Indianapolis, to Miss Helen F. Bond of Chicago, January 26.

HOWARD ANDREW KNOX, M.R.C., U. S. Army, to Mrs. Gladys Barnett Reed, at Brooklyn, January 10.

BUELL F. MENEFEE, M.D., Jonesburg, Mo., to Miss Flora Baker of Montgomery, Mo., January 17.

CLARENCE R. FARMER, M.D., Elm City, N. C., to Miss Laura Wohlson of Lancaster, Pa., January 17.

ASHER CADDEN BIDDLE, M.D., Lewistown, Mont., to Miss Mary Besse Allen of Athens, O., January 25.

WILLIAM FLEGENHEIMER, M.D., Guineys, Va., to Miss Meta Huger de Saussure, at Fredericksburg, Va., January 19.

AMOS WILLIS BALL, M.D., Rushville, Ill., to Miss Dorothy M. Chatham of Watertown, Ill., at Princeton, Ky., January 14.

GRAY CHANDLER BRIGGS, M.D., St. Louis, to Miss Louise Edwards of Chicago, more than a year ago, but just announced.

A. H. VAN VOORHIS, M.D., Morgantown, W. Va., to Miss Dannie Protzman of Sabraton, W. Va., at Uniontown, Pa., January 17.

Deaths

Joseph Hill Hunt, M.D. College of Physicians and Surgeons, New York City, 1873; first president of the Department of Mineralogy of the Brooklyn Institute; noted as an archeologist; formerly a member of the Board of Education at Brooklyn; and president of the Kings County Medical Society in 1899; instructor in histology and pathology and assistant in surgery in Long Island College Hospital; associate editor of the *Brooklyn Medical Journal*; professor of materia medica, botany and pharmacognosis in the Brooklyn College of Pharmacy; for six years a member of the Brooklyn Board of Pharmacy; surgeon to the Central Throat Hospital, and pathologist to St. Mary's Hospital; died at his home in Newton, N. J., January 15, from heart disease, aged 62.

George Roswell Dean, M.D. Jefferson Medical College, 1868; a member of the American Medical Association, and Southern Surgical and Gynecological Association; a Confederate veteran; at one time president of the South Carolina Medical Association and Southern Railway Surgeons Association; local surgeon for the Southern Railway Company; medical director of the South-Eastern Life Insurance Company; representative in the South Carolina Legislature in 1886; a member of the State Board of Health and a director of the Spartanburg (S. C.) Hospital; died at his home in that city, January 17, from heart disease, aged 66.

Frank Harcourt Koyle, M.D. Medical Faculty of Queen's University, Kingston, Ont., 1888; M.C.P. and S., Ont.; a member of the American Medical Association, and American Laryngological, Rhinological and Otological societies, and American Academy of Ophthalmology and Oto-Laryngology; oculist and anirist to the Stenben Sanitarium, Hornellsville, N. Y., and to the Erie Railway Co.; special examining surgeon for the United States Department of the Interior; died at his home in Hornell, New York, January 17, from pneumonia, aged 46.

Benoni O. Reynolds, M.D. Rush Medical College, 1851; a member and once president of the Wisconsin Medical Society; surgeon of the Third Wisconsin Volunteer Cavalry, during the Civil War; president of the local board of pension examiners of Lake Geneva for eight years; member of the State Board of Health for nine years; for several terms a member of the Wisconsin General Assembly and Senate; died at his home in Lake Geneva, January 19, from cerebral hemorrhage, aged 86.

Michael Harvey Hennel, M.D. Eclectic Medical Institute, Cincinnati, 1891; a member of the Medical Society of the State of North Carolina; of late years a specialist in tuberculosis; died at his home in Asheville, January 8, from spinal meningitis, aged 42. At a special meeting of the Buncombe County Medical Society, January 9, a committee was appointed to prepare resolutions on the death of Dr. Hennel.

William Joseph Furness, M.D. University of Michigan, Ann Arbor, 1891; a member of the American Medical Association; physician to the Manhattan State Hospital, Ward's Island, N. Y.; and visiting surgeon to St. Joseph's Hospital; died in New York City, January 17, as the result of an accident whereby he backed his automobile into the elevator well of a garage, and was crushed under it, aged 40.

John Upton Riggs, M.D. University of Michigan, Ann Arbor, 1868; Bellevue Hospital Medical College, 1873; a member of the American Medical Association, and formerly president of the Williams County (O.) Medical Society; surgeon to the Cincinnati, Jackson and Mackinaw Railway at Bryan, O.; died in the Mounds Park Sanitarium, St. Paul, Minn., January 17, from nephritis, aged 65.

John Heaton Rerick, M.D. University of Michigan, Ann Arbor, 1853; surgeon of the Forty-fourth Indiana Volunteer Infantry during the Civil War; for eight years clerk of LaGrange County, Ind.; and during President Harrison's administration, postmaster of LaGrange; publisher of the *LaGrange Standard* since 1867; died at his home, January 22, from pneumonia, aged 81.

Charles Olney Ballou, M.D. Harvard Medical School, 1877; a member of the Rhode Island Medical Society; a veteran of the Civil War; for two years a representative to the General Court, Concord, N. H., and also justice of the peace; medical director of the Department of Rhode Island, G. A. R., for two years; died at his home in Providence, January 18, from pneumonia, aged 80.

Susanna Way Dodds, M.D. New York Hygieno-Therapeutic College, New York City, 1864; Dean of the St. Louis Hygienic College; founder and for half a century superintendent of the Dodds Hygeian Home, St. Louis, but for the last seven

years a resident of Yellow Springs, Ohio; died at Long Beach, California, January 20, from senile debility, aged 80.

Francis Augustine Harris, M.D. Harvard Medical School, 1872; since 1877 medical examiner of Suffolk County; demonstrator of medico-legal examinations in his alma mater for 10 or 12 years and for several years professor of surgery in the Boston Dental College; died at his home in Winthrop, January 18, from cerebral hemorrhage, aged 65.

Joshua J. Sweet, M.D. New York University, New York City, 1859; formerly a member of the American Medical Association; who served during the Civil War as an acting assistant surgeon, U. S. Army; pension examiner at Unadilla, N. Y., for thirty-five years; died at his home, January 13, from carcinoma of the stomach, aged 76.

Edwin Faxon Vose, M.D. Boston University School of Medicine, 1876; president of the Maine State Homeopathic Society in 1895; a member of the Maine Academy of Medicine and Maine Board of Registration in Medicine; for six years a member of school board of Portland; died at his home, January 13, from diabetes, aged 60.

Tullio Antonio Rottanzi, M.D. Cooper Medical College, San Francisco, 1877; a member of the medical society of the state of California; formerly a member of the board of supervisors of San Francisco and acting mayor; city physician from 1904 to 1907; died at his home, January 20, from pneumonia, aged 43.

Joseph H. Wills, M.D. University of Pennsylvania, Philadelphia, 1880; a member of the Medical Society of New Jersey; formerly a member of the State Board of Health; district physician of Camden, and a member of the staff of Cooper Hospital; died at his home, January 16, from pneumonia, aged 66.

William Francis McCormick, M.D. Cleveland University of Medicine and Surgery, 1889; for twelve years chief surgeon of the Pacific Coast Coal Company at Franklin and Black Diamond, Wash.; died at his home in Black Diamond, Dec. 22, 1910, from acute dilatation of the heart, aged 52.

Emmett Lee Irwin, M.D. Tulane University, New Orleans, 1888; a member of the American Medical Association; a representative in the Louisiana legislature from 1900 to 1904, and state senator in 1908; died at his home in Clinton, January 15, from acute gastritis, aged 47.

Charles Edward Clark, M.D. Harvard Medical School, 1877; for many years a practitioner of Lynn, Mass.; ferry commissioner of Boston in 1885 and 1886; died at the home of his wife's parents in Passaic, New Jersey, January 20, from acute dilatation of the heart, aged 60.

James S. Berry, M.D. Starling Medical College, Columbus, 1870; a member of the Ohio State Medical Association; one of the organizers and president of the Adams County Chautauqua; died at his home in Peebles, January 15, from heart disease, aged 66.

Jay C. Lovejoy, M.D. Eclectic Medical College of the State of New York, 1879; for several years justice of the peace of the town of Edinburg, N. Y.; died at his home in Batchelersville, N. Y., January 17, from hemorrhage of the lungs, aged about 60.

Edward F. Raymond, M.D. Berkshire Medical College, Pittsfield, Mass., 1859; surgeon of the Thirteenth Battalion, Virginia Artillery, C. S. A., during the Civil War; died at his home in Frankford, W. Va., January 18, from angina pectoris, aged 75.

George A. Beltz, M.D. Medico-Chirurgical College of Philadelphia, 1907; a member of the Medical Society of the State of Pennsylvania; of Greensburg; died in the Allegheny General Hospital, Pittsburg, January 14, from abscess of the brain, aged 28.

John Woodward Gould, M.D. Albany (N. Y.) Medical College, 1880; who has been connected with the Delaware, Lackawanna and Western Railroad for twenty years; died at his home in Newark, N. J., January 18, from angina pectoris, aged 72.

Charles Elmer McCormick, M.D. Pulte Medical College, Cincinnati, 1899; a clerk in the Columbus Post Office; formerly a practitioner of Wellston, Ohio; died at his home in Columbus, January 20, from purpura hemorrhagica, aged 46.

Joshua R. Morton, M.D. University of Pennsylvania, Philadelphia, 1871; president and for several years a member of the Allentown, Pa., school board; died at his home in that city, Oct. 9, 1910, from tuberculosis of the lungs, aged 60.

Charles Lewis Anderson, M.D. Indiana Central Medical College, Greencastle, 1852; an authority on marine botany; for

many years a school trustee of Santa Cruz, Cal.; died at his home Dec. 22, 1910, from senile debility, aged 82.

Charles William Schwartz, M.D. Hahnemann Medical College, Philadelphia, 1880; from 1877 to 1889 district physician of Albany County, N. Y.; died at his home in Whitehall, January 17, from cerebral hemorrhage, aged 51.

William Rollo Kinmouth, M.D. College of Physicians and Surgeons, New York City, 1872; a member of the Medical Society of New Jersey; died at his home in Farmingdale, January 11, from pneumonia, aged about 70.

Charles Francis Boyden, M.D. University of Michigan, Ann Arbor, 1896; for several years assistant physician of the Gilbert Sanitarium, Evansville; died in that institution, January 20, from pneumonia, aged 38.

William Racoosin, M.D. Long Island College Hospital, Brooklyn, 1904; a member of the American Medical Association; died at his home in Centerville Station, N. Y., January 1, from pneumonia, aged 40.

John Henry Finch, M.D. College of Physicians and Surgeons, Baltimore, 1886; a member of the Medical Association of the State of Alabama; died at his home in Birmingham, January 11, from paresis, aged 52.

Norman Powell Lake, M.D. University of Virginia, Charlottesville, 1908; a member of the American Medical Association; died at his home in Rectortown, Va., January 7, from typhoid fever, aged 34.

James Thomas Black, M.D. University of Tennessee, Nashville, 1901; of Elroy, Tex.; a member of the American Medical Association; died in Driftwood, Tex., Nov. 9, 1910, from abscess of the liver, aged 35.

George A. Binder, M.D. University of Minnesota, Minneapolis, 1892; a member of the American Medical Association; died at his home, Dayton's Bluff, St. Paul, January 15, from typhoid fever, aged 45.

Francis Marion Monroe, M.D. Medical College of the State of South Carolina, Charleston, 1861; a Confederate veteran; died at his home in Latta, S. C., Oct. 21, 1910, from senile debility, aged 72.

Robert McCready, M.D. Bellevue Hospital Medical College, 1869; for more than fifty years a practitioner of Sewickley, Pa.; died at his home in that place, January 17, aged 80.

Richard Mentor McGuffin, M.D. University of Pennsylvania, Philadelphia, 1872; died at his home in Bramwell, W. Va., Sept. 7, 1910, from cerebral hemorrhage, aged 63.

Frederick Lowell Crandell, M.D. Rush Medical College, 1882; formerly a police surgeon of Chicago; died at his home in Denver, January 5, from pneumonia, aged 56.

John P. Brown, M.D. University of Southern California, Los Angeles, 1902; died at his home in Rogers, Ark., January 12, from tuberculosis of the liver, aged 43.

William Haggerty, M.D. New York University, New York City, 1868; died at his home in Scranton, Pa., Dec. 29, 1910, from general nervous breakdown, aged 69.

Elihu H. Ayers, M.D. Rush Medical College, 1859; for many years a practitioner of Dallas, Tex.; died at the home of his daughter in that city, January 5, aged 77.

Columbus D. Smith, M.D. University of Pennsylvania, Philadelphia, 1851; formerly of Newnan, Ga.; died at the home of his son in Atlanta, January 12, aged 83.

Albert B. Barker, M.D. Eclectic Medical College of the City of New York, 1863; died at his home in Cincinnati, January 20, from cerebral hemorrhage, aged 73.

Charles E. Quail, M.D. University of Maryland, Baltimore, 1867; of Auburn, Pa.; died in Harrisburg, Pa., Dec. 21, 1910, from angina pectoris, aged 69.

William H. Richards, M.D. Miami Medical College, Cincinnati, 1872; of Hicksville, O.; died at the Angola (Ind.) Hospital, January 2, aged 72.

Frank Bostwick Lundy, M.D. Toronto School of Medicine, 1880; died suddenly at his home in Portage la Prairie, Man., Dec. 26, 1910, aged 53.

Franklin Bedford, M.D. Rush Medical College, 1873; a practitioner since 1865; died at his home in Maple Park, Ill., January 15, aged 81.

Matthew B. Drake, M.D. Cumberland University, Memphis Medical College, 1856; died at his home in Ladonia, Tex., January 9, aged 78.

Albin Vincent Wright (license, Navarro County, Tex., 1874); died at his home in Corsicana, July 1, 1910, aged 72.

A. J. Swindell (license, Texas, 1902); died at his home in Hermleigh, January 11, from pneumonia, aged 43.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

NATURE'S CREATION—A SEQUEL

Some Testimonials That Have Been Published and Some That Have Not

Nature's Creation, a "consumption cure" fraud of the vicious type, was pretty thoroughly exposed in THE JOURNAL, March 5, 1910. As will be remembered, this nostrum was exploited originally as a "cure" for syphilis and was switched over into the "consumption cure" class after an awakened public interest in tuberculosis had made the sale of such "cures" increasingly profitable. It was then advertised "for tuberculosis only." As a syphilis "cure" it was recommended with stupendous effrontery as a substitute for the "potash" treatment against which the patient was warned. Examination of the stuff in the Association laboratory indicated that it was "essentially a solution of potassium iodid in a weakly alcoholic medium containing vegetable extractives and flavoring matter and small quantities of inorganic salts." And this potash solution was exploited as a means of avoiding the "potash treatment" and, furthermore, was sold as a product "made entirely from vegetable matter!"

THE "BLIND" ADVERTISEMENT

Nature's Creation has in the past been given publicity by means of large display advertisements in the newspapers. Recently the method of using a "blind" advertisement in the classified column of the newspapers has been adopted. The following is appearing (Fig. 1) in the "Personal" column of papers all over the country:

PERSONAL—TO CONSUMPTIVES: I possess information which cost me a fortune, and feel that I should let every consumptive know about my experience. Mrs. J. M. Reynolds, Central National Bank, Columbus, Ohio.

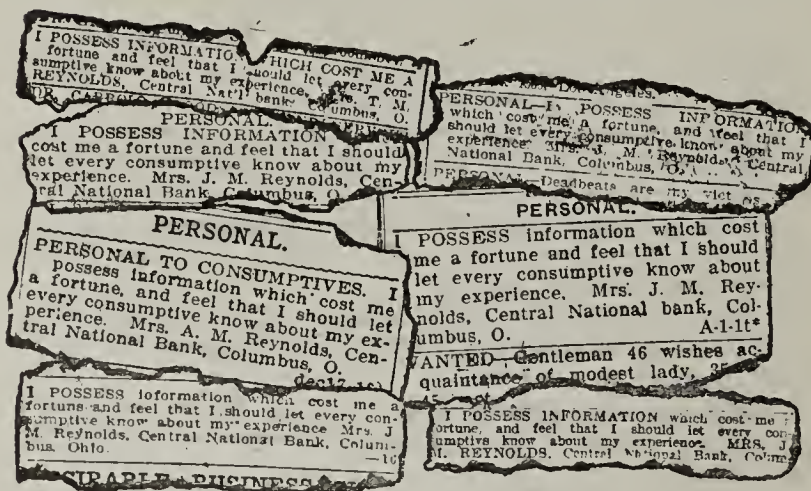


Fig. 1.—Photographic reproduction (reduced) of some of the numerous advertisements of Nature's Creation appearing as "blind ads." under the "Personal" columns in the classified advertising sections of newspapers all over the country. The advertisements here shown are taken from the Mobile (Ala.) Register, the Peoria (Ill.) Star, the Boston (Mass) American, the Los Angeles (Cal.) Examiner, the Montgomery (Ala.) Advertiser, the Binghamton (N. Y.) Press and the Chicago (Ill.) Daily News. Notice that the first letter of the initials prefixed to Mrs. Reynolds' name varies in different papers. This is done by the company as a means of checking up the number of inquiries obtained from a given advertisement.

The victims who answer this advertisement receive a letter written on pale blue stationery such as is used for social correspondence. The letter is signed—not always in the same handwriting—"Mrs. J. M. Reynolds" and the initials J. M. R. are embossed, monogram style, in gilt on the paper and also on the envelope. In this letter Mrs. Reynolds states she has cured herself, "in defiance of the world's scientists," by the discovery of "a combination of certain roots and herbs." Whether she cured herself of syphilis or consumption, she does not state, but she does say that in the joy of being well, "I am now devoting my life to saving others."

The recipient of this social epistle is further told by Mrs. Reynolds that as it is impossible for her "to attend personally to the multitude of inquiries" that reach her, "I am




<p>HERBERT E. IMMEL.</p>  <p>Columbus, O. April 12, 1909.</p> <p>To Whom It May Concern:</p> <p>The public knows all about my having been saved by Nature's Creation. Since my recovery hundreds have come to me to get the details of my amazing recovery. Among them have been many consumptives themselves who have since taken the treatment and are today enjoying perfect health. What a blessing it would be if every one. it knew that Nature's Creation really cures.</p> <p>Very truly, Herbert E. Immel</p> <p>219 Deshler Avenue</p> <p>DIED, DEC. 3, 1910.</p>	<p>CHAS. T. CLICK.</p>  <p>Westerville, O.</p> <p>In July, 1908, I was given up by my family physician, and with good reason, too, as I was "all in," not being able to walk over 15 feet. I had gone all to pieces, just the same as I've seen many other consumptives. In a short time after starting on Nature's Creation, which was July 24th, I was able to be about as usual and have gained right along ever since. I have gained about forty pounds and am feeling better and better. I can't say too much for Nature's Creation, particularly as I know of many cases which are even more remarkable than mine.</p> <p>Very truly, Chas. T. Click</p> <p>Mr. Click's recovery is the talk of the town—most everyone knows him, and wherever he goes he is met with—"Hello, Charley! Who would ever have thought it possible—we all thought you were a 'goner' sure." He is now working every day at his trade of paper-hanging.</p> <p>(From Columbus Citizen, May 7, 1909.)</p> <p>DIED, DEC. 23, 1909.</p>	<p>GEORGE SCHWENKE.</p>  <p>415 E. Forest Street, Columbus, O.</p> <p>I know of many cases of tuberculosis where Nature's Creation has saved them after all hopes had been given up, but none were cured any more speedily than I. I was losing about ten pounds a month, and, while taking Nature's Creation for three months, gained thirty-four pounds. I have been cured for over three months and am back at work. I feel stronger and better than ever before. By the way, I had a great deal of trouble with my stomach before taking Nature's Creation, and now I can eat anything at any time and would never know I had a stomach. If anyone doubts that Nature's Creation cures, they would not if they could realize how bad I was when I was wasting away under the care of my physicians.</p> <p>Yours truly, George Schwenke</p> <p>(From State Journal, June 9, 1909.)</p> <p>DIED, FEB. 8, 1910.</p>
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Fig. 2.—Photographic reproduction (reduced) of three pages from the Nature's Creation testimonial booklet. In each case the person testifying to his "cure" of tuberculosis by Nature's Creation has died of that disease. In the case of George Schwenke, this record of his "cure" is being sent out, a year after his death!

referring your request to my Secretary—Mr. Campbell—you will no doubt hear from him soon." By the next mail comes a letter from the Nature's Creation Company signed "H. W. Campbell, Sec'y." It was the H. W. Campbell Company, then of Chicago, that exploited this same fake as a syphilis cure a few years ago.

Mrs. Reynold's solicitude for the welfare of the sick may be understood when it is known that she is the president and a director of the Nature's Creation Company, capitalized at \$200,000.00—a concern engaged in exploiting a discarded syphilis "cure" to consumptives at \$5.00 a bottle.

CHARGES NOT DEFINITE ENOUGH

When the previous article appeared exposing Nature's Creation, the concern said that THE JOURNAL's charges were vague and so carefully worded as to avoid legal reprisal. The public was told in sensational advertisements that the editor of THE JOURNAL did not dare to say that Nature's Creation "was a fake or fraud, or that it did not cure." Since, apparently, we did not make ourselves clear in the previous article we may summarize our findings more specifically at this time:

First.—Nature's Creation is a fake.

Second.—Nature's Creation is a fraud.

Third.—Nature's Creation will not cure consumption.

TESTIMONIALS

No "consumption cure" is complete without its testimonials. The worthlessness of such testimony, from a scientific stand-

point, has repeatedly been shown, and this, too, without assuming that the letters are fraudulent. That many of the letters published by fake medical concerns are documentarily genuine there is no doubt; that is to say, the letters were actually written. How valueless they are is made evident by looking into the cases of the individuals giving them. On investigating "consumption cure" testimonials, one of two things is practically always found: Either the writer of the testimonial did not have tuberculosis and recovered from his indisposition in spite of the nostrum, rather than because of it; or, the poor victim, in the first flush of optimism that comes whenever a new remedy is tried, deluded himself into believing that the stuff actually helped him.

We are reproducing (Fig. 2) three testimonials taken from the Nature's Creation advertising. In all three cases the poor victims who wrote them are dead. But the testimonials still live to delude other unfortunate sufferers from a disease which no drug can cure—in fact, Nature's Creation booklet in which the testimonial of George Schwenke appears, is still (January, 1911) being distributed—nearly a year after George Schwenke died!

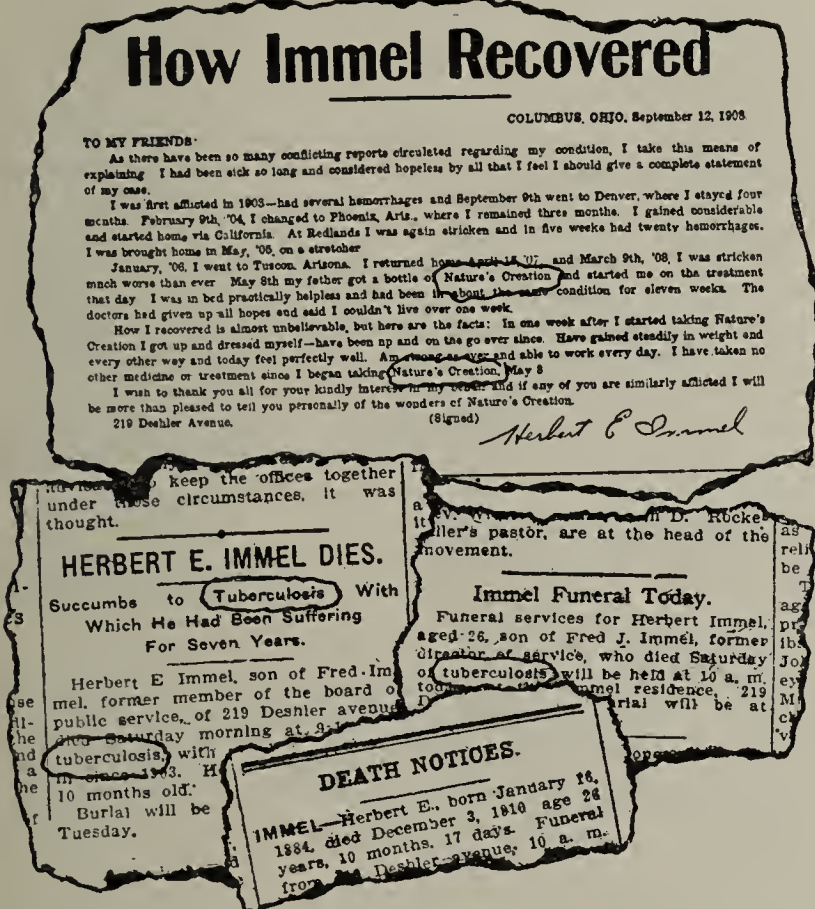


Fig. 3.—These reduced photographic reproductions of a testimonial and three newspaper clippings tell their own sad story. The testimonial was published as an advertisement in the Columbus Dispatch, and later reproduced as an advertising circular by the Nature's Creation Company. The death and funeral notices also are taken from Columbus newspapers.

SOME TESTIMONIALS HITHERTO UNPUBLISHED

So much for testimonials that are favorable to the nostrum; now for the reverse of the shield. As has been said before, the Nature's Creation concern has its headquarters at Columbus, O. The local medical profession in that city is much alive to the viciousness of this fake and has taken active steps to combat it. For some time the Board of Health of the City of Columbus has been collecting data relative to the use of this nostrum. The matter that follows is from official sources, from the records of the district medical service, the district nurses' service and from the reports of the tuberculosis hospital. We submit a few testimonials that the Nature's Creation Company has, so far, not published and probably will not want to. And it should be remembered that the information here given deals, practically, with but one locality, that of Columbus, Ohio:

NO BENEFIT

March 23, 1910.

"I took Nature's Creation one year ago without benefit. Gave up taking it and came to the hospital, and am greatly improved since coming here. Have gained more than twenty-five pounds and feel much better than for two years.—Emanuel Lewis.

NOT WORTH NINE CENTS

March 23, 1910.

"I took Nature's Creation last summer because it was claimed a cure for tuberculosis. Took two bottles without benefit. Wish I could get my \$9 back. They gave me two bottles for \$9, but I do not consider that the two bottles were worth 9 cents.—E. M. Deveraux."

UNABLE TO LEAVE BED AFTER TAKING

March 23, 1910.

"I took Nature's Creation in the spring of 1909 on advice of a friend. Took three bottles. I was far worse off when I quit than when I started taking it. I decreased in weight and felt worse generally. I was able to be up and about when I commenced taking it, but was unable to leave my bed after taking two bottles. . . . Wish that I could recover \$15 they took from me without benefit.—Mrs. Herron."

UPSET HIS STOMACH—HASTENED HIS DEATH

"My son, Gussie Jones, was suffering with tuberculosis for about a year. Nature's Creation was recommended to him as a cure, and finally he began taking it. He took two bottles of the medicine, but before he had finished the first he suffered terribly with his stomach as a result of it. . . . I firmly believe that it did him more harm than good, and hastened his death, and I am free to make this statement of the facts of the case.—Mrs. H. C. Jones."

FIVE BOTTLES—NO BENEFIT

March 23, 1910.

"To Whom It May Concern: This is to certify that my sister, Mrs. J. E. Kibby, deceased, while living at 537 West Rich Street, and who was suffering from pulmonary tuberculosis, bought and used as per directions, five bottles of Nature's Creation. She did not gain in strength or appear to be benefited whatsoever by its use.—J. Redman."

BELIEVED THE ADVERTISEMENTS—IS NOW DEAD

March 21, 1910.

"My daughter, Carrie, went South for her health about May, 1908, having been advised to go there by our family physician. To keep her from becoming lonesome I subscribed for the Dispatch (Columbus), in which she saw the advertisement for Nature's Creation, and would not be satisfied until she had tried it. She came home for the express purpose of taking this remedy, believing that the advertisements were true and that the remedy would cure her.

"She went to the Nature's Creation Company, was examined and told by them that the remedy would cure her and that she would have a 'speedy recovery.' . . . She took the medicine as advertised by the company, but no improvement was noticed. . . . She gradually grew worse and died on Oct. 14, 1909, and we believe that her death was hastened by the use of this medicine. . . .—Charles H. McGuire."

The attention of those gentlemen of the daily press who feel that their responsibility extends no further than their editorial columns, is respectfully called to Mr. McGuire's letter. No fine-drawn sophistries can excuse such papers as carry advertisements of fake consumption cures, from the moral guilt involved. Without the aid of the press these vicious frauds would die, for without publicity they would cease to be profitable and it is for profit only that they exist.

THE TESTIMONY OF RELATIVES

One of the officers of the Board of Health, Columbus, sends in statements from various individuals whose relatives had taken Nature's Creation. Here are two of them:

"Mrs. Homer Eggleston, who formerly lived at 203 S. Belle Street, stated that her husband died of tuberculosis after taking four bottles of Nature's Creation. She stated that she did not think it did him any good whatever."

"Mr. J. N. Schilling, 438 Naghten Street, stated to me that his daughter took from ten to twelve bottles of Nature's Creation; that it was of no benefit whatever to her and really did her more harm than good; she died several months ago."

SOME ADDITIONAL REPORTS

The Columbus Society for the Prevention and Cure of Tuberculosis, through its visiting nurses, has had excellent opportunities for obtaining first-hand information about the use of this cruel fake. Some of the reports made by the nurses are here given:

- John Woods:* Took Nature's Creation and insisted that he was improving. This was not apparent to the visiting nurse. Died March 14, 1910.
- Miss Ford:* Took Nature's Creation when first taken ill. Died March 24, 1910.
- Louis Goodwin:* An incipient case, when he began taking Nature's Creation. Took from eight to ten bottles before death. Died Jan. 9, 1909.
- Mrs. Mack:* After taking two bottles of Nature's Creation, went up to the office of the company and demanded an examination. A man in the office said she was looking so well that they would pronounce her cured. Died May 23, 1910.
- Joseph Kessler:* Was a hopeful case. Lost valuable time taking Nature's Creation until it was too late for other treatment to be of any benefit. Failed steadily. Died June 2, 1909.
- Ira May:* Took Nature's Creation for a time, during which period he sat in a closed room huddled over a fire. Died March 3, 1910.
- Joseph Steele:* Took Nature's Creation until bedridden. Died Dec. 26, 1908.
- Mrs. Geyer:* Took several bottles of Nature's Creation, but as considerable stomach disturbance followed, discontinued. Died Dec. 4, 1909.

A GRUESOME LIST

The following classified list has been collected by the Columbus Board of Health. It consists of the names of those persons who have taken Nature's Creation—advertised to “cheek at once further progress of the disease”—but who, nevertheless, died:

SOME COLUMBUS, OHIO, PERSONS WHO HAVE TAKEN NATURE'S CREATION

NAME	DIED	NAME	DIED
William Malinhoff...	7-20-1908	Chas. W. Davis....	1-15-1910
R. J. Jones.....	8-25-1908	C. F. Higginbotham.	2- 4-1910
Myrtle M. Furrow..	9-23-1908	George Schwenke*..	2- 8-1910
William Snyder	9-27-1908	Ira May	3- 4-1910
Anna Philos	10-19-1908	Casper Herman	3- 5-1910
Edward Stock	10-26-1908	Howard A. Denune..	3- 6-1910
Anna Barbara	11-24-1908	Ned L. Evan.....	3-13-1910
Irene A. Freeman...12- 9-1908		John Woods	3-14-1910
Almeda E. Irwin...12- 8-1908		B. F. Segines.....	3-18-1910
J. Steele	12-26-1908	John J. Jenkins....	3-19-1910
George Wertz	1-15-1909	Mary I. Ford	3-24-1910
Carl Hasbrook	2- 2-1909	Forrest J. Greenlee..	3-31-1910
Joseph Kessler	6-12-1909	Sarah R. Ross.....	4- 5-1910
Chas. Wm. O'Day..	6-29-1909	Samuel Robinson ..	4-30-1910
Mrs. J. Kibby.....	7-31-1909	Mrs. Mack	5-23-1910
Florence Underwood.	9- 2-1909	John C. McAfee....	8- 9-1910
Theresa Harst.....	9- 3-1909	George H. Howell... 8-11-1910	
Luey Fultz	9- 3-1909	Daisy Sherman ....11-10-1910	
Christina Shilling ..	9- 8-1909	Herbert W. Immel*..12- 3-1910	
Carrie McGuire	10-14-1909	Anna S. Smith.....12- 3-1910	
G. W. Johnson.....11-26-1909		Mrs. Geyer	12- 4-1910
George Smith	11-28-1909	Maud Peters	12-20-1910
Sheldon Harsh ....12-21-1909			

* See Figure 2 for copies of testimonials by George Schwenke and Herbert Immel.

CONCLUSION

As has already been stated, the information just given deals with but one locality—Columbus, O. When it is realized that this iniquitous stuff is being advertised and sold from Maine to California the misery left in its wake may be imagined. While what precedes is but a part of the damning evidence which has been submitted against Nature's Creation we believe it is sufficient to convict this cruel fake at the bar of public opinion.

How much longer will the sale of this humbug be permitted? Its continued existence will depend on two things—the gullibility of the public and the willingness of the press to share in the company's blood-money by accepting advertisements of the nostrum. It is little less than criminal that men without even the pretence of medical training and with more capital than conscience should be free to exploit a valueless mixture of drugs as a cure for a disease which no drug can cure.

It is hoped that physicians will make it their duty to call the attention of the public to the facts here presented. Nature's Creation is but a type; if it goes out of existence

there still remain scores of fakes just as vicious and just as cruel. And as they, too, die, others will spring up to take their places. So long as the credulity of ignorance is a human attribute, so long will the “consumption cure” and “cancer cure” fakes thrive. The only remedy is enlightenment and it is a fact, as notorious as it is pathetic, that a vast section of the public is densely ignorant of the limitations and possibilities of drugs.

Unfortunately, the medium through which the public could so easily be reached and enlightened—the newspapers—is, to a large degree, unavailable. Many of these publications are still too deeply under the blighting influence of the “patent medicine” advertisers ever to print the truth about these frauds. But the number of newspapers whose silence cannot be purchased increases yearly and their power is slowly but surely making itself felt. In the meantime it is the physician's duty to the public to give it the enlightenment which it needs for its own protection against “consumption cure” swindlers and other frauds equally vicious.

Correspondence

A Case of Blepharospasm: Information Wanted

To the Editor:—An interesting case came to my notice some time ago which, among other things, presented a most peculiar condition. I will not report it in full at this time as I hope to make a more thorough study of the case before a final report.

The patient has tonic blepharospasm, which has been present daily for about twenty-five years. The spasm is very painful and is accompanied by rolling of the eyeball into its position of rest; and the patient experiences a sensation of contraction in the region of the ciliary muscle. A peculiar feature of the case is that, since beginning to menstruate at the age of 14, the patient notices absolute relief from the painful symptoms during the menstrual period, whereas before the flow begins the spasm is more severe, and following the period the spasms for two or three days are much less severe. In the ordinary acceptance the patient could not be considered a nervous patient.

Perhaps some of my colleagues may have seen such a case, and from those to whose attention this brief statement may come I should be very glad to hear as I have so far found no similar condition recorded.

ROBERT SCOTT LAMB, M.D., Washington, D. C.
The Cecil.

Gonorrhea and Ophthalmia Neonatorum

To the Editor:—Dr. Sampliner's letter in THE JOURNAL last week directs attention to a subject of such great importance that it merits special emphasis. Almost every case of infantile blennorrhea sufficiently severe to cause blindness is of gonococcal origin and the result of an uncured gonorrhea in the father. There are not many men base enough to be wilful purveyors of an infection which carries in its train blindness, mutilation and death; so it must be that the mother of the child who develops ophthalmia neonatorum is infected because the father has not been forewarned by his physician of his possibilities as a disease-carrier. The truth should be made more clear to our students in the colleges that gonorrhea is not a simple affair to be treated with the nonchalance of a cold; that it is often exceedingly obdurate; and above all, that it is a source of danger as long as any infective germs are present. Nor is it as generally known as it should be that the absence of a discharge at the meatus following the treatment of an active gonorrhea is by no means proof positive that gonococci may not be found in the deeper parts of the urethra. A little beer taken in the evening, followed by gentle massage of the prostate in the morning, will in some cases bring to view a drop or two of a secretion which will be found to be loaded with gonococci and capable of developing an acute gonorrhea in the female. By proper treatment

this condition can be cured and the man be made safe. There is a temptation, even while a visible discharge remains which taxes the patience of both the patient and doctor, for the latter finally to say in desperation, "Oh, that's all right, you are practically cured," thereby giving a false sense of security which the conditions do not warrant. It should be made clear, beyond the possibility of misunderstanding to the patient that *so long as any discharge from the urethra can be secured it may be safely assumed in the absence of microscopic examination that infection is present and that marriage should be absolutely forbidden.* It is these unfinished cases that are responsible for the vast amount of misery caused by gonorrhea. It is hoped that the state departments of health may soon make this one phase of the valuable preventive work in which they are engaged and that other states may follow the lead of Indiana in giving our daughters legal protection from an avoidable infection which in so many cases is followed by frightful disasters.

F. PARK LEWIS, Buffalo, N. Y.

Phenolphthalein May Cause Pink Stools

To the Editor:—The following recent incident may be as pharmacologically interesting and instructive to others as it was to me:

I was called to see a child on account of an alleged bloody stool with severe abdominal pain and tenesmus. There had been no bowel movement for two days except a little pinkish liquid, which was negative to the guaiac blood-test. In making this test, however, it was observed that the color disappeared on the addition of acetic acid. Another sample of the stool, similarly acidified, promptly regained its color on being made ammoniacal. These unusual findings led to an investigation that resulted in procuring a cathartic tablet such as the patient had taken a few hours before. A solution of this tablet gave the same color reactions as the stool, making it very probable that all the signs and symptoms were due to phenolphthalein, especially as they disappeared after free castor-oil catharsis.

H. S. BARTHOLOMEW, Lansing, Mich.

[COMMENT.—The reaction of phenolphthalein with alkalis should always be borne in mind.—ED.]

Preservation of Rubber Bulbs

To the Editor:—The difficulty of keeping rubber bulbs in long service, complained of by Dr. Goodman (THE JOURNAL, Jan. 14, 1911, p. 113), has led me to devise a contrivance which does away with the rubber bulb altogether and is much cheaper as well as more satisfactory. The device consists of an ordinary bicycle pump connected with a piece of rubber tubing by means of a Schrader valve (used in a bicycle tire). To the end of the barrel of the pump is soldered on a flat band made of sheet tin, leaving a space through which a leather strap is passed and by means of which the pump may be secured to one's leg or other convenient support. In using the sphygmomanometer the pump is attached to the apparatus and operated in the same manner as the rubber bulb. It will be found, however, that the pump gives a much nicer graduation of the force, the air under pressure being prevented from escaping by the Schrader valve. The cost of the outfit is about 50 cents, and, with slight attention to oiling and the washers, will last a lifetime.

ALBERT ROBIN, M.D., Wilmington, Del.

The Fitting of Glasses by Unqualified Persons

To the Editor:—Your comment on "The Fitting of Glasses" in 10-cent stores was read with interest. That refractions of this kind cannot be in any way accurate and that the glasses of this kind do lots of harm cannot be doubted. But in my opinion the harm done by a "fake" device of any kind is measured by the reliance put in it by the user.

The 10-cent stores do not pretend to have any great amount of skill as refractionists and charge a low price for their

glasses. Their patrons will, as a rule, soon find that the glasses purchased are not right and will discard them. But the optician, "eye specialist" with his handsomely decorated "office," his prevaricating advertisements and his fee of from \$10 to \$20 for his services and glasses does command confidence. Therein lies the danger. His hypermetropic "patients" will continue to wear the myopic glasses he has prescribed; the impression he has made will cause no doubts in their minds as to his fitness.

Let us get at the greater evil. The man whose sign blazes out "Pawn Broker and Eyesight Specialist" doesn't do nearly so much harm as his competitor whose advertisement reads, "Dr. ———, Optometrist. No matter what is the trouble with your eyes, call on me."

The first is passed by with a laugh, the second is sought out as a man of great skill.

J. W. KIMBERLIN, M.D., Kansas City, Mo.

Value in Case Histories of Term "Jew" as Racial Designation

To the Editor:—An unintentional error in classification of nationalities in medical articles, case reports, etc., is regarded as an injustice by a portion of the community, and your aid is sought to prevent repetition. The use of the designations "Jew," "Hebrew" and "Israelite" with their adjectives is here referred to, because when so employed these terms are meaningless. City Jews may possibly be distinctively more subject to diabetes and nervous affections than the average of our population but so large a proportion of the former now live the rural life that general deductions regarding these or any other diseases no longer hold good. Then, again, so large a percentage of Jews show admixture of other race stocks that mistakes are liable to occur from this source; authoritative statistics covering the world have just been published to prove this fact. See, also, Jean Finot's "Race Prejudice" and Antoine Leroy Beaulieu's "Israel Among the Nations."

It is because of the gross legal and political wrongs sometimes suffered by communicants of the Jewish faith that redress is here asked. When the present National Immigration Commission recently made the same error, so strong a united complaint arose from the national bodies of American Jews that correction promptly followed.

A. B. HIRSH, Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

USES OF CHROMIUM SULPHATE IN MEDICINE

To the Editor:—What place has chromium sulphate in medicine? The manufacturing chemists are advertising it extensively and I think that many physicians would like to obtain some idea of how much to believe of "The Uses of Chromium Sulphate in Medicine."

N. F. CHEEVER, M.D., Greenfield, N. H.

ANSWER.—The subject of chromium sulphate was discussed briefly in THE JOURNAL, Nov. 6, 1909, p. 1580. At that time we stated that the only article on the subject in medical literature appeared in the *Monthly Cyclopaedia and Medical Bulletin*, September, 1908, by S. Kolipinski. An article by B. O. LeBlanc appeared in the *New Orleans Medical and Surgical Journal*, November, 1910, p. 346, in which the author reports that he used this drug in a case of ataxic paraplegia after other treatment had failed to produce improvement, and that after six weeks of treatment the patient was able to walk. The case is imperfectly reported, but does not appear to have been a case of myelitis, as sensation was unimpaired and the knee-jerk reflex was increased. The same symptoms would exclude locomotor ataxia. No statement is made as to whether the paralysis was flaccid or spastic. No electric test of the muscles is reported.

In addition to this article there are a number of reports to which little credence is to be attached on account of incompleteness of observation and report. One author reports a case of epilepsy in which he thinks there was benefit, but the report was made not more than two months after the last attack. The same author reports a case of nervousness in a patient who collapsed and was compelled to go to bed. "Could not sleep and was mildly hysterical. Chromium sulphate and rest straightened her out very nicely."

The remedy is being pushed in a semi-proprietary way, but the fact that so little reliable information is obtainable indicates that the drug is probably of little value, and that Kolipinski's observations require confirmation.

DIFFERENTIATION OF SPIROCHÆTA PALLIDA FROM NON-PATHOGENIC SPIROCHETES

To the Editor:—Please describe the method of differentiating the *Spirochæta pallida* from non-pathogenic spirochetes.

J. H. SCHRUP, M.D., Dubuque, Iowa.

ANSWER.—The differential diagnosis between *Spirochæta pallida* or *Treponema pallidum* and non-pathogenic spirochetes is based on the comparative motility and the width and number of curves which the different microorganisms present. The non-pathogenic spirochetes have a somewhat rapid motility, while the *Spirochæta pallida* seems to lie lazily in the material in which it is suspended (Gurd). The principal non-pathogenic spirochetes are *Spirochæta refringens*, *Spirochæta dentium* and *Spirochæta buccalis*.

Spirochæta refringens is larger, thicker, more refractile; its spirals are broader and wavier; its ends are blunter; it occurs in great numbers in a smear; and it stains more easily than *Spirochæta pallida*.

The morphology of *Spirochæta buccalis* is similar to that of *Spirochæta refringens*, and the organism is easily distinguished from the treponema with its short deep curve.

Spirochæta dentium is more liable to lead to error in diagnosis; its body is finer than the other forms mentioned and the curves are shorter and placed more closely together. The body of this organism is, however, always definitely thicker than the treponema and never does one find more than five turns to the diameter of a red blood-cell, nor are the extremities drawn out in the manner of the organism of syphilis. According to Coles, there are from six to seven turns of the treponema in the length of the diameter of a red blood-cell and the total length is equal to the diameter of one or two red cells and sometimes more. The total length contains from six to fourteen and sometimes twenty or more turns of the spiral. The *Spirochæta dentium* rarely has more than four or occasionally five turns; the other organisms from two to three, possibly five, but never more.

BOOKS ON PREVENTIVE MEDICINE, HYGIENE AND SANITATION

To the Editor:—Please refer me to a book on preventive medicine or sanitation and hygiene, or some up-to-date articles on the subject.

C. E. GILLIATT, Allendale, Ill.

ANSWER.—The following are among the best books on these subjects:

Abbott: Hygiene of Transmissible Diseases, Second Ed., W. B. Saunders Co., Philadelphia; price \$2.50.

Baker: Municipal Engineering and Sanitation, Macmillan Co., New York; price \$1.25.

Bergey: Handbook of Hygiene, John Wiley & Sons, New York; price \$1.50.

Egbert: Hygiene and Sanitation, Lea Brothers & Co., Philadelphia; price \$2.25.

Harrington: Practical Hygiene, Lea Brothers & Co., Philadelphia; price \$4.25.

Notter: Theory and Practice of Hygiene, P. Blakiston's Son & Co., Philadelphia; price \$7.00.

Parkes: Practical Hygiene, William Wood & Co., New York; price \$4.00.

Richardson: Preventive Medicine, Lea Brothers & Co., Philadelphia; price \$4.00.

Sedgwick: Principles of Sanitary Science and the Public Health, Macmillan Co., New York; price \$3.00.

Stevenson and Murphy: Hygiene, P. Blakiston's Son & Co., Philadelphia; price, Vols. I and II \$6.00 each and Vol. III \$5.00.

Whitelegge and Newman: Hygiene and Public Health, W. T. Keener & Co., Chicago; price \$1.75.

Wilson: Handbook of Hygiene and Sanitary Science, P. Blakiston's Son & Co., Philadelphia; price \$3.00.

The *Quarterly Bulletin of the Ohio State Board of Health*, October-December, 1910, is a very practical pamphlet on the subject. We referred to it editorially on page 274. The offices of the board are at Columbus, Ohio.

BOOKS AND JOURNALS ON INSANITY

To the Editor:—Please inform me by whom Kraepelin's work on insanity is published; also give me a list of recent standard works on insanity and state by whom published, and advise me of the best journals devoted exclusively to this specialty.

FRANCIS H. POOLE, M.D., Pocatello, Idaho.

ANSWER.—The following are some of the principal works on insanity:

Kraepelin: Clinical Psychiatry, William Wood & Co., New York; \$3.50 net.

Brower and Bannister: Insanity, W. B. Saunders Co., Philadelphia; \$3 net.

Bruce: Clinical Psychiatry, Macmillan Co., New York; \$4 net.

Church and Peterson: Nervous and Mental Diseases, Ed. 6, W. B. Saunders Co., Philadelphia; \$5 net.

The following journals are suggested:

Journal of Nervous and Mental Diseases; subscription \$5; monthly; published by S. E. Jelliffe, 41 North Queen Street, Lancaster, Pa.

Brain: Macmillan Co., St. Martin's Street, W.C., London, England. *American Journal of Insanity*; subscription \$5; quarterly; Johns Hopkins Press, Baltimore.

Journal of Mental Pathology; subscription \$2.50; monthly; State Press, 28 West 126th Street, New York.

Psychological Review; bimonthly; subscription \$4.50; Johns Hopkins Press, Baltimore.

Journal of Comparative Neurology and Psychology; subscription \$4; bimonthly; Wistar Institute of Anatomy, Philadelphia.

RECIPROCITY BETWEEN ARKANSAS AND LOUISIANA AND TEXAS

To the Editor:—Louisiana and Texas do not have reciprocal relations, but both of these states have reciprocal relations with Arkansas. Could not a physician holding a Louisiana license, who desires to practice in Texas, first obtain an Arkansas license through reciprocity with Louisiana and then in turn, through the reciprocal relations between Arkansas and Texas, obtain a Texas license?

W. P. II.

ANSWER.—Texas reciprocates with Arkansas and other states only on the basis of a written examination. In the instance cited it is improbable that Texas would accept the Arkansas license, since it would be based, not on the Arkansas examination, but on the Louisiana license.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Jan. 28, 1911.

Sherwood, John W., M.R.C., granted two months' leave of absence. Casper, Joseph, lieutenant, ordered to remain on temporary duty at Fort Slocum, N. Y., to Feb. 15, 1911.

Pipes, Henry F., captain, granted four months' leave of absence, to take effect about June 1, 1911.

Howell, Park, captain, honorably discharged from the service of the United States.

Patterson, R. F., D.S., returned to Fort Sheridan, Ill., from detached duty and left Fort Thomas, Ky., Jan. 20, 1911.

Scott, Harold O., D.S., reports arrival at San Francisco and departure on one month and ten days' leave.

Mason, George L., D.S., returned to Fort Snelling, Minn., from temporary duty at Fort Assiniboine, Mont.

Mabee, James I., captain, relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Huachuca, Ariz., for duty.

Mills, Frederick H., M.R.C., leave of absence extended one month.

Koyle, Fred. T., M.R.C., on abandonment of Fort Mansfield, R. I., to proceed to Fort H. G. Wright, N. Y., for station and duty.

Wing, F.F., D.S., reported for temporary duty at Fort Omaha, Neb.; left Fort Crook, Neb., same date.

Worthington, Joseph A., M.R.C., on arrival in the United States from the Philippine Islands will proceed to the presidio of San Francisco for duty at that station.

Cutcliffe, William O., M.R.C., sick leave of absence extended two months.

Arthur, William H., lieutenant-col., relieved from duty at Walter Reed General Hospital, effective at expiration of leave of absence, and directed to proceed to San Francisco for transportation to Manila, P. I., on transport sailing Aug. 5, 1911, and on arrival report in person to the commanding general, Philippines division, for assignment to duty.

Eliot, Henry W., M.R.C., left Fort McKinley, Maine, on ten days' leave of absence.

Blanchard, R. M., captain, left temporary duty at Fort Thomas, Ky., on thirty days' leave of absence with permission to apply for thirty days' extension.

Leslie, Samuel H., D.S., granted twenty-one days' leave of absence.

Medical Corps, U. S. Navy

Changes during the week ended Jan. 28, 1911.

Heiner, R. G., P. A. surgeon, detached from the Naval Academy and ordered to duty at the naval hospital, Annapolis, Md.

Ransdell, R. C., P. A. surgeon, detached from the *Texas* and ordered to the *Baltimore*.

U. S. Public Health and Marine-Hospital Service

Moore, Dunlop, P. A. surgeon, granted seven days' leave of absence from Jan. 18, 1911, under paragraph 191, Service Regulations.

Schereschewsky, J. W., P. A. surgeon, directed to report at Bureau on special temporary duty.

Collins, G. L., P. A. surgeon, granted eight days' leave of absence from Jan. 24, 1911.

McKeon, F. H., P. A. surgeon, directed to report to P. A. Surgeon M. W. Glover for duty in the medical examination of arriving aliens.

Simpson, Fiench, asst.-surgeon, granted one month and fifteen days' leave of absence from Feb. 6, 1911.

Slaughter, A. W., acting asst. surgeon, granted seven days' leave of absence from Jan. 8, 1911, under paragraph 210, Service Regulations.

Board of medical officers convened to meet at the Bureau on call of the chairman for the purpose of preparing a new "Nomenclature of Diseases." Detail for the board: Asst. Surgeon-General J. W. Trask, chairman; P. A. Surgeon Joseph Goldberger; P. A. Surgeon Joseph Schereschewsky, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

STATE LEGISLATION ON PUBLIC HEALTH

Legislatures are in session this winter in the following thirty-six states: Alabama, California, Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Washington, West Virginia, Wisconsin and Wyoming. While many of the legislatures have been occupied so far in organization and the election of United States Senators, a number of bills of interest to physicians have been introduced relating to the practice of medicine, the regulation of public health matters, etc. As was to be expected, a number of bills providing for sectarian examining boards have been introduced. The following summary includes all of the bills that have been reported up to the time of going to press. In the case of bills of importance, further details, together with an abstract of the bill, will be given later.

ARKANSAS

Attorney-General Norwood is preparing a bill providing for a state board of health, carrying an annual appropriation of \$10,000. The bill provides for a health commissioner, a bacteriologist, a bookkeeper and a stenographer. Members of the board of health are to be appointed by the governor and are to receive mileage and a per diem. The board is to have control over the health affairs of the state, outside of the cities which have their own health departments. An office in the state capital is provided for, with a laboratory for all work except water analysis, which will be done in the laboratories of the University of Arkansas as at present. The bill further provides for county and township boards of health. County commissioners are to receive one and one-half cents per capita on the population of the county. The bill also provides for registration of births, deaths, marriages and divorces. The *Pine Bluff* (Ark.) *Graphic* states that most of the legislators are in favor of the bill and that its passage is regarded as almost certain.

An optometry bill has also been introduced. This bill is similar to the optometry bills introduced into other states and is open to the same objections in that it permits those untrained in medicine to assume the care of patients suffering from diseases of the eye.

CALIFORNIA

No official reports have been received from California but the *San Francisco Examiner* states that a bill providing for a new state board of medical examiners is being prepared and will be introduced.

ILLINOIS

Senator Glackin, of Cook County, has introduced a bill (S. B. 5) providing for a state sanatorium for consumptives and appropriating \$300,000 for this purpose.

A committee of the Chicago Woman's Club has prepared a bill to establish a commission for improving the condition of the adult blind in their homes. This bill provides for a state board of five persons, to be known as the Illinois Commission for the Blind, which shall act as a bureau of information and industrial aid, promote visits to the adult blind in their homes for the purpose of instruction, aid them to find employment, develop home industries for the blind, furnish them with material and tools, assist them in marketing their products, circulate books among the aged and helpless, or use any other methods it may deem expedient, except that it shall not undertake the permanent support or maintenance of any blind persons. The bill calls for the appropriation of \$10,000.

The Chicago *Record-Herald* recently stated that the Chicago Homeopathic Medical Society had protested against a bill introduced, or to be introduced, to prohibit physicians from dispensing their own medicines.

INDIANA

The Indianapolis *Star* states that a bill to prohibit the sale of cocaine in any form except on a physician's prescription, will shortly be introduced. The *Star* also states that the State Board of Health has formulated a legislative program which includes a weights and measures bill, a bill for medical inspection of school children, a cold storage bill, a sanitary school house bill, Pasteur Institute bill, a bill for the prevention of blindness in the new-born and amendments to the present pure food law. The bill for the medical inspection of school children, introduced by Senator McCarty, provides that medical inspection shall be optional with the school authorities but recommends inspection of the eyes and teeth and examination as to contagious diseases. This measure is endorsed by the State Board of Education.

IOWA

A bill has been introduced to create a health commission of three to take the place of the present Board of Health, this commission to be composed of a lawyer, a sanitary engineer and a physician. The three commissioners are to give their entire time to health administration. The usual bill establishing a state board of osteopathic examiners has been introduced.

LOUISIANA

A bill to prevent the unauthorized sale of habit-forming drugs has been introduced, strongly endorsed by the New Orleans *Picayune*. One of the strongest reasons urged for the passage of the bill is the prevalence of the cocaine habit among negroes. District Attorney St. Clair Adams stated before the board of health that, according to police reports, there were from 20,000 to 25,000 negro cocaine "fiends" in New Orleans and that morphin and cocaine habitués were sent to the penitentiary or the insane asylum every week.

MAINE

A bill amending the medical practice act has been introduced, to establish a minimum preliminary educational requirement of a high school diploma or equivalent, giving the board power to revoke certificates, amending the definition of the practice of medicine, exempting all drugless methods of treatment and providing for the expenses of the board. An osteopathic bill has also been introduced.

MINNESOTA

The State Board of Health has approved a bill to be presented to the legislature, giving the board power to condemn school buildings as unsafe or unsanitary. The board has also approved a bill authorizing the state to pay one-third of the salary of a school health officer, who may give his whole time to the medical inspection of schools, and limiting the amount to be expended to \$20,000 a year. The board also approved of a bill requiring licenses for all dogs, the income from the license tax to be used for the support of the Pasteur Institute.

MONTANA

The following bills have been introduced: a bill for a tuberculosis sanatorium; a bill for a pure food law; a bill to prohibit the sale of narcotics except on physicians' prescriptions; a bill providing for the medical examination of school children and two bills regulating dairy products.

NEBRASKA

A joint resolution has been introduced into the house, providing for the submission to the people of an amendment to the state constitution, creating a board of control of three members to have charge of all state institutions. The committee on medical legislation of the Nebraska State Medical Association has also recommended legislation providing suitable care for the indigent tuberculous and the tuberculous insane and for a commission of physicians to make reports to the courts on all matters connected with expert medical testimony. A bill has been introduced permitting the practice of so-called "Chiropractics," Christian Scientists and faith healers.

NEW HAMPSHIRE

A pure food bill, a bill appropriating \$5,000 for a state sanatorium, a bill requiring practicing physicians to report all cases of tuberculosis, a bill prohibiting the manufacture and sale of cocaine or any article containing cocaine, and a bill amending the medical practice act have been introduced.

NORTH DAKOTA

A new medical practice act is being drafted which will place practitioners of all sects under the supervision of a single board.

OHIO

Bills have been introduced to amend the state pharmacy law, forbidding the sale of habit-forming drugs except on prescription of a legally qualified physician or dentist, regulating the itinerant vending of medicines, nostrums, etc.

RHODE ISLAND

The State Board of Health intends to introduce bills for the abolition of the public drinking cup and for the control of the pollution of streams. The Rhode Island Antituberculosis League has prepared a bill for the control of dairies and milk delivery.

SOUTH DAKOTA

Senator W. J. Maytum has introduced a bill to regulate itinerant physicians. A new board of health bill is being drafted to increase the power of the board and to provide an appropriation.

TENNESSEE

A bill has been introduced to amend the medical practice act by requiring a four years' course and prohibiting any person from practicing medicine under the name of any other person or firm. The term of members of the board of medical examiners is to be increased from four to six years. A vital statistics bill is being prepared along the lines of the model bill.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—First Weekly Meeting

*General subject for the month: Surgical Infections **

THE NATURE OF INFECTION

DUE TO: (1) Toxic infections, snake venoms, etc., (2) bacteria. **INFECTION** may be (1) local, wound infections, or (2) general, toxemia, septicemia, pyemia.

REACTION to infection may be (1) local, or (2) general.

LOCAL REACTION, INFLAMMATION: Action of bacteria due to bacteria, their toxins or endotoxins.

INFLAMMATION: (1) Disturbance of circulation with exudation; (a) congestion, (b) stasis, (c) leukocytosis, and emigration, (d) serous exudation, (e) diapedesis, (f) thrombosis. (2) Degenerative changes. Causes of necrosis and liquefaction. (3) Reparative changes: (a) cell-proliferation, (b) regeneration, (c) organization, (d) cicatrization.

SYMPTOMS OF INFLAMMATION.

TERMINATIONS.

GENERAL REACTION: Rapidity of absorption from different kinds of wounds. Virulence of bacteria. Resistance of organism. Development of bactericidal substances in tissue fluids. Complement and intermediary bodies. Agglutinins, lysins, precipitins. Leukocytosis, significance, relation of leukocyte to complement. Ehrlich's side-chain theory. Antitoxic serums, bactericidal serums. Fever. Causes of fever. Relation of fever to absorption of toxins. Aseptic fever.

INFECTED WOUNDS: Simple infected wounds. Progressive phlegmonous infiltration. Acute purulent edema. *Gangrène foudroyante*.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: State House, Des Moines, February 14-16. Sec., Dr. Guilford H. Sumner.

KANSAS: Topeka, February 14. Sec., Dr. H. A. Dykes, Lebanon.

NEBRASKA: State House, Lincoln, February 8-9. Sec., Dr. E. Arthur Carr.

Alabama July Report

Dr. W. H. Sanders, chairman of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, July 11-14, 1910. The number of subjects examined in was 10; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 119, of whom 73 passed, including 2 osteopaths, and 46 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
University of Alabama.....	(1908)	(18, 1910)	19
Birmingham Medical College.....	(1909)	(13, 1910)	14
Atlanta School of Medicine.....	(1906)	(2, 1910)	3
Atlanta College of Physicians and Surgeons.....	(1909)		1
College of Physicians and Surgeons, Chicago.....	(1902)		1
University of Louisville.....	(1909)	(4, 1910)	5
Tulane University of Louisiana.....	(1910)		2
Maryland Medical College.....	(1910)		1
Johns Hopkins University.....	(1910)		2
Columbia University, College of Phys. and Surg.....	(1908)		1
Cornell University Medical College.....	(1907)		1
University and Bellevue Hospital Medical College.....	(1905)		1
Leonard Medical School.....	(1909)	(1910)	2
Jefferson Medical College.....	(1910)		2
University of Pennsylvania.....	(1908)		1
University of Nashville....	(1900)	(2, 1908) (2, 1909)	5
Vanderbilt University.....	(1910)		2
Memphis Hospital Medical College.....	(1910)		2
Universities of Nashville and Tennessee.....	(1910)		3
University of Virginia.....	(1909)		1
University of Amsterdam, Netherlands.....	(1901)		1
University of Edinburgh, Scotland.....	(1901)		1

FAILED

University of Alabama.....	(2, 1909)	(6, 1910)	8
Birmingham Medical College.....	(1907)	(7, 1910)	8
College of Physicians and Surgeons, Chicago.....	(1902)		1
Atlanta College of Physicians and Surgeons.....	(1910)		3
Atlanta School of Medicine.....	(1910)		2
Tulane University of Louisiana.....	(1910)		1
Barnes Medical College.....	(1910)		1
Leonard Medical School.....	(1906)	(6, 1910)	7
University of the South.....	(1907)	(1908)	2
University of Tennessee.....	(1908)		2
Meharry Medical College.....	(1910)		4
Universities of Nashville and Tennessee.....	(1910)		1
Memphis Hospital Medical College.....	(1910)		4
Chattanooga Medical College.....	(1908)	(1909)	2

Kansas October Report

Dr. H. A. Dykes, secretary of the State Board of Medical Registration and Examination, reports the written examination held at Topeka, Oct. 13, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 13, of whom 5 passed, 6 failed and 2 withdrew. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Louisville.....	(1910)		79
St. Louis University.....	(1907) 93; (1908)		85
Kansas City Medical College.....	(1892)		80
University Medical College, Kansas City.....	(1910)		86

FAILED

Eleetie Medical University, Kansas City.....	(1904)	56
Kansas City Medical College.....	(1900) 70; (1904)	62
Kansas City Hahnemann Medical College.....	(1909)	67
Missouri Medical College, St. Louis.....	(1883)	64
University Medical College, Kansas City.....	(1909)	62

Texas November Report

Dr. R. H. McLeod, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Palestine, Nov. 22-24, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 35, of whom 34 passed, including 1 osteopath, and 1 failed. The college and year of graduation for two

* Reference Books for the Seventh Month: Text-Books on Surgery, by Keen, Bryant and Buck, Lexer-Bevan, and others.

candidates who passed were not obtained. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University	(1909)	90.9	
College of Med. and Surg., Physiomedical, Chicago	(1910)	80.2	
Rush Medical College	(1897)	79	
College of Phys. and Surg., Chicago	(1898) 84.3; (1910)	85.7	
Hahnemann Medical College and Hospital, Chicago	(1910)	91.2	
Central College of Phys. and Surg., Indianapolis	(1898)	90.8	
University of Louisville	(1910)	80.8, 85.2	
Tulane University of Louisville	(1908) 77.4; (1910)	85.6	
Barnes Medical College	(1904) 75, 77		
St. Louis College of Physicians and Surgeons	(1910)	77.3, 87.5	
Medico-Chirurgical College, Philadelphia	(1910)	83.1	
Woman's Medical College of Pennsylvania	(1910)	85.1	
University of Tennessee	(1891) 80.4; (1906)	81.7	
Meharry Medical College	(1908)	75	
Memphis Hospital Medical College (1892) 76.9; (1901) 82.3; (1907) 84.3; (1910) 81.1			
Vanderbilt University	(1909)	78.1	
University of the South	(1901) 79.5; (1908)	76.8	
Dallas Medical College	(1903)	77.4	
Baylor University College of Medicine	(1910)	75	
University of Texas	(1907)	88.9	
Southwestern University Medical College, Dallas	(1910)	81.4	

College	Year Grad.	Per Cent.
University of Louisville	(1910)	64.7

Maine November Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration in Medicine, reports the written examination held at Portland, Nov. 8-9, 1910. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 14, of whom 11 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine	(1910)	84	
Baltimore Medical College	(1910)	92	
Tufts College Medical School	(1910)	87, 88	
College of Physicians and Surgeons, Boston	(1908)	77	
Harvard Medical School	(1909) 82; (1910)	90	
Hahnemann Medical Coll. and Hosp., Philadelphia	(1910)	77	
University of Pennsylvania	(1910)	86	
University of Vermont	(1909)	89	
University of Toronto, Ontario	(1895)	91	

FAILED

College of Phys. and Surg., Boston	(1908) 70; (1910)	77 *
Tufts College Medical School	(1909)	74

* Fell below the required percentage in certain branches.

Delaware December Report

Dr. H. W. Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover, Dec. 13-15, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 12, of whom 10 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1910)	89.3	
College of Phys. and Surg., Baltimore	(1909) 83.8; (1910)	79.6	
University of Maryland	(1909)	84.2	
Woman's Medical College of Pennsylvania	(1909)	88.5	
Jefferson Medical College	(1906)	86.8	
University of Pennsylvania	(1906)	89.5	
Medico-Chirurgical Coll., Philadelphia	(1909) 75.9; (1910)	79.2	
Victoria University of Manchester, England	(1894)	89.8	

FAILED

University of Maryland	(1910)	73.7
Royal University of Naples, Italy	(1905)	73.8

Kentucky December Report

Dr. J. N. McCormack, secretary of the Kentucky State Board of Health, reports the written examination held at Louisville, Dec. 15-17, 1910. The number of subjects examined in was 10; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 34, of whom 19 passed, including 1 osteopath, and 15 failed, including 2 osteopaths. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
College of Physicians and Surgeons, Chicago	(1884)	1	
Chicago College of Medicine and Surgery	(1910)	1	
University of Louisville	(1905) (4, 1910)	5	
Louisville and Hospital Medical College	(1908)	1	
Kentucky School of Medicine	(1908)	1	

Southwestern Homeo. Medical Coll. and Hosp.	(1910)	1
University of Michigan, Homeopathic College	(1910)	1
University of Buffalo	(1900)	1
Eclectic Medical College, Cincinnati	(1910)	1
Cincinnati College of Medicine and Surgery	(1902)	1
Medical College of Ohio	(1909)	1
Hahnemann Med. Coll. and Hosp., Philadelphia	(1908)	1
Meharry Medical College	(1910)	2

FAILED

Kentucky School of Medicine	(1901) (1902)	2
University of Louisville	(1909) (5, 1910)	6
Kentucky University	(1910)	1
Louisville National Medical College	(1910)	1
Eclectic Medical College, Cincinnati	(1910)	1
Meharry Medical College	(1909) (1910)	2

Maryland December Report

Dr. J. McP. Scott, secretary of the Maryland Board of Medical Examiners, reports the written examination held at Baltimore, Dec. 13-16, 1910. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 53, of whom 36 passed and 17 failed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1907) 77; (1910)	75	
Atlanta School of Medicine	(1910)	95	
University of Maryland	(1908) 77; (1909) 75; (1910) 77, 78, 78, 79, 80, 82, 83.		
Woman's Medical College of Baltimore	(1909)	83	
Johns Hopkins University	(1901) 92; (1904) 90; (1907) 83, 93; (1908) 91; (1909) 89; (1910) 84.		
College of Phys. and Surg., Baltimore	(1903) 77; (1910)	80	
Baltimore Medical College	(1910)	81	
Maryland Medical College	(1910)	79	
University of Michigan, Dept. of Med. and Surg.	(1898)	82	
Columbia University, College of Phys. and Surg.	(1908)	85	
University of Pennsylvania	(1909) 91; (1910) 78, 79, 82, 85.		
Jefferson Medical College	(1910)	85	
Medico-Chirurgical College, Philadelphia	(1910)	84	
University of the South	(1909)	76	
University of Virginia	(1909) 81; (1910)	77	

FAILED

University of Georgia.....	(1909)	63
Louisville National Medical College.....	(1909)	54
University of Maryland.....	(1909) 55, 66; (1910)	69
Baltimore Medical College.....	(1910)	74
College of Physicians and Surgeons, Baltimore.....	(1910)	62
Maryland Medical College (1904) 58; (1906) 66; (1909) 60, 67; (1910) 32, 51, 63; (—)* 66.		
Leonard School of Medicine.....	(1907)	71
University of the South.....	(1909)	42

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1909)	W. Virginia
Columbian University, Washington, D. C.	(1891)	Virginia
Baltimore University	(1902)	Nebraska
University of Maryland	(1878)	Maryland
Johns Hopkins University	(1907)	Virginia
Harvard Medical School	(1905)	N. Carolina
University of Pennsylvania	(1893)	Dist. Colum.
Meharry Medical College	(1892)	Dist. Colum.
Baylor University	(1898)	S. Carolina
University of Virginia	(1900)	Kentucky
	(1907)	Texas
	(1901)	N. Carolina

* No year of graduation given.

Ohio December Report

Dr. George H. Matson, secretary of the State Medical Board of Ohio, reports the written examination held at Cincinnati, Dec. 6-8, 1910. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 23, of whom 21 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1910)	81.9	
Kentucky School of Medicine	(1903)	77.1	
Johns Hopkins University	(1908)	82.6	
Ohio-Miami Medical College	(1910) 75, 77, 81.6, 81.6.		
Western Reserve University	(1910)	76.3	
Miami Medical College	(1880) 76.9; (1909)	78.3	
Cleveland College of Phys. and Surg.	(1903) 77.7; (1910)	81	
Medical College of Ohio	(1894)	77.8	
Starling-Ohio Medical College	(1909)	78.6	
Medico-Chirurgical College, Philadelphia	(1898)	82.5	
Western University, London, Ontario	(1910)	80.5, 82	
University of Helsinki, Finland	(1903)	76.7	
University of Berlin, Germany	(1908)	84.3	
Royal University of Palermo, Italy	(1904)	76.5	
Royal University of Pisa, Italy	(1909)	76.9	

FAILED

Eclectic Medical College, Cincinnati	(1908) 69.3; (1910)	55.5
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Book Notices

THE MODERN TREATMENT OF ALCOHOLISM AND DRUG NARCOTISM. By C. A. McBride, M.D. Cloth. Price, \$2. Pp. 376. New York: Rebman Co., 1910.

McBride believes that inebriety is a disease, and makes a good argument for the validity of his views. He admits that some who drink to excess do not have a craving; these he does not regard as inebriates; they are the ones who should be brought under moral influences to be reformed. The early chapter on the pathology of alcoholism is made up of quotations from Drs. Sims Woodhead, Hale White, Lauder Brunton and John R. Bradford and so may be considered authoritative.

McBride discusses, fully and well, the causes of inebriety and the conditions under which it arises. He says of Canada and such climates that the air is so stimulating that the desire for alcoholic drinks is not so great as in England, but that if they are used they are more acutely deleterious. The correctness of the first part of this statement is doubtful. The author has probably been misled by the customs of Canadians and Americans, who drink less wine in their homes than Europeans do—not, however, because of climate.

For purposes of prognosis and treatment the author classifies alcoholics as: (1) the constant drinker; (2) the periodical drinker; (3) the dipsomaniac; (4) the voluntary drinker; (5) mixed cases. The fourth class includes those who drink sometimes even to excess because others do, or as a "stunt," but who have no habit or craving for drink. They can stop whenever they are persuaded that it is best to do so. The term "dipsomaniac" he limits to those in whom there are outbreaks of mental excitement of a maniacal kind. He believes that "every dipsomaniac is insane, but the insanity is not sufficiently marked during the intervals to attract attention, and is apparent only when the patient is excited by alcohol." The other classes are readily understood from their names. Alcoholics of the fourth class do not need medicinal treatment. The others do. The dipsomaniac should be under restraint such as is needed by the insane. Alcoholics of the other classes are amenable to medicinal treatment. Various specific treatments which have been recommended are discussed. The treatment which the author uses is fully explained. In brief, it consists in giving hypodermic injections of strychnin 3 times daily, at first 1/60 of a grain, increased to 1/30 by the end of the first week and at the same time hypodermic injections of atropin are given, which are rapidly increased until the patient's tongue is made dry and the pupils dilated. A bitter mixture containing cinchona, gentian, rheum, capsicum and more atropin and strychnin is also given six times a day. During the first week, usually during the first few days, all taste for alcohol is lost. During the second week this treatment is continued, but during the third the injections of atropin are gradually diminished and finally stopped, and the capsicum is withdrawn from the mixture taken by the mouth. Thus modified, the treatment is continued during the fourth week. At the end of that time the atropin is withdrawn from the mixture and the latter is given four instead of six times daily. During the sixth week the injections of strychnin are reduced and stopped. At the beginning of the week the cinchona is also withdrawn. The author necessarily varies this treatment with the requirements of individuals. He does not minimize the value of the personality of the man administering treatment and of the value of suggestion, but he is convinced of the value and need of medicinal treatment.

Those who have had experience in the treatment of inebriates must feel skeptical about the value of this specific treatment, but no one reading the book will doubt that in the experienced hands of its author it will effect cures. His sincerity, clinical experience and success cannot be doubted.

The portion of the volume devoted to drug treatment is a small part of the whole. It is equally worthy of consideration.

PHYSICAL CHEMISTRY: ITS BEARING ON BIOLOGY AND MEDICINE. By James C. Philip, Ph.D., Assistant Professor in the Department of Chemistry, Imperial College of Science and Technology, London. Cloth. Price, \$2.10 net. Pp. 312, with 23 illustrations. New York: Longmans, Green & Co., 1910.

The increasing utilization of physicochemical methods in solving biologic and physiologic problems gives promise of a successful future for this branch of science, and makes it nec-

essary that a student of biologicocochemical problems have a working knowledge of the fundamental principles and methods of physical chemistry. As the newer physiologic and biologic literature abounds in references to physical chemistry, it is difficult to comprehend the import of such work without at least a fundamental knowledge of the laws of physical chemistry.

In order to furnish the requisite knowledge to enable medical students and practitioners to follow modern research in the biologic fields, the author has produced this volume. It is well written, and, since it is made as simple as possible and all unnecessary mathematics have been dispensed with, the material should be in an easily assimilable form for those who have not specialized in the fields of higher mathematics and physics. Examples of phenomena are taken from the fields of biology, physiology and medicine to illustrate the principles of physical chemistry, and *vice versa*. It is a timely help for those who desire to keep up with the rapid development of the biologic sciences.

ANEMIA. By Obermedizinalrat Professor Dr. P. Ehrlich, Director of the Königl. Institut. für Experimentelle Therapie, Frankfurt a.-M., and Dr. A. Lazarus, Professor of the University of Berlin, Charlottenburg. Part I., Vol. I. Normal and Pathologic Histology of the Blood. Second Edition. Revised by Dr. A. Lazarus, and Dr. O. Naegeli, privat-docent, Zurich. Translated from the German by H. W. Armit, M.R.C.S. Cloth. Price, \$4. Pp. 218, with illustrations. New York: Rebman Co., 1910.

It is more than ten years since the first edition of this part of "Anemia" was published by Ehrlich and Lazarus. During this time hematology has made many advances, mostly along lines indicated or in harmony with the views expressed in the first edition, while in some details, matters now present a somewhat different aspect from the one they presented ten years ago.

The new edition has been prepared by Prof. A. Lazarus, Ehrlich's original cooperator, and Privat-Docent O. Naegeli. The book still represents Ehrlich's school and Ehrlich's views. The translator has succeeded well in securing a readable English form. Chapters 1 and 2, by A. Lazarus, contain introductory matters, such as clinical methods of the examination of the blood and the morphology of blood. The third chapter, by O. Naegeli, considers the white blood-corpuscles—the histology and classification, origin, granules and theories, and presents also the subjects of leukocytosis and leukemia. Chapter 4, by A. Lazarus, deals with the blood-platelets. At the end of each chapter is a bibliography, the references in which are not given according to any uniform style or accepted form of abbreviation; thus, what is probably the *American Journal of Medical Sciences* is referred to as *Amer. Journ.*

There is no need for any recommendation of this book. Its value as representing the teachings of Ehrlich, the founder of modern hematology, is recognized at once. It may be pointed out, however, that Naegeli's discussion of the rôle of leukocytes in infection leaves much to be desired, the issues in some cases being confused. The colored plates are good.

THE DISEASES OF CHILDREN. By James F. Goodhart, M.D., Consulting Physician to the Evelina Hospital for Sick Children. Ninth Edition. Edited by George F. Still, M.D., Professor of Diseases of Children, King's College, London. Cloth. Price, \$5. Pp. 931, with 34 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

With the exception of a few interpolations, this book might have been written a quarter of a century ago. In the chapters on nutrition and its disorders, there is not a single reference to metabolism.

To illustrate the antiquated character of the volume, a few instances from the chapters on infectious diseases are chosen. Tracheotomy is given preference over intubation, in the treatment of diphtheritic laryngeal stenosis; the author states also that intubation is "but seldom adapted to the exigencies of private practice." "We are inclined to doubt whether intubation will ultimately take rank as a generally serviceable measure in diphtheria." In the treatment of scarlet fever antiseptic injections (phenol or "oil eucalyptus supplied by Messrs. — & Son") are "insisted" on. "With this treatment the

child need not be isolated" and even "the infected child may be allowed to sleep with a healthy child."

If this book reflects the current thought in pediatrics in England, it certainly does not that of the Continent or of this country.

A GUIDE TO READING IN SOCIAL ETHICS AND ALLIED SUBJECTS. Lists of Books and Articles Selected and Described for the Use of General Readers. By Teachers in Harvard University. Boards. Price, \$1.25. Pp. 265. Cambridge: Harvard University, 1910.

This book is compiled to meet the needs, not of "a superficial reader nor yet a learned scholar," but of "an intelligent and serious-minded student." Some subjects are included which are of special interest to physicians, such as "Medical Aspects of Sociology," "Defectives," "Crime and Criminals," and "The Liquor Problem." The sensible plan on which the work is compiled, being applicable to bibliographies of other subjects, is worthy of mention. The general subject has been subdivided, and each subdivision has been allotted to an editor of special ability in that field, who has compiled, not an exhaustive, but a select bibliography, with critical comments, "not attempting a complete description or a final judgment, but as though answering the preliminary question of a student, 'What kind of book is this?'" As Professor Peabody says in the preface, "A perfect [that is, exhaustive] bibliography may justify pride in the compiler but may provoke despair in the reader." We commend this thought to the consideration of other compilers of bibliographies.

PHASES OF EVOLUTION AND HEREDITY. By David B. Hart, M.D., Lecturer on Midwifery and Diseases of Women, School of the Royal Colleges, Edinburgh. Cloth. Price, \$2. Pp. 259. New York: Rebman Co., 1910.

This little volume discusses evolution and heredity in a popular style. While there is no dearth of books on this theme, most of them are too ponderous and ultrascientific and, consequently, fill one's library shelves, but usually remain unread. Such criticism cannot apply here. The book is divided into fourteen short chapters and a glossary of scientific terms, each chapter forming a rounded whole. The diction is entertaining and reminds one very strikingly of the familiar popular-science style created by the great Huxley. Respecting the subject-matter itself, we detect no inaccuracies and are surprised by several things not expected in a work of this kind. It may well be questioned why the chapters on "The Community of Bees," "A Modern Observation Hive," "The Evolution of the Honey-Bee and of Modern Bee Culture"—all very interesting in themselves—have been introduced. However, as the author shows great first-hand familiarity with bee-life, one rather enjoys reading about it.

THE SCIENCE OF LIVING, OR THE ART OF KEEPING WELL. By William S. Sadler, M.D., Professor of Physiologic Therapeutics, the Post-Graduate Medical School of Chicago. Cloth. Price, \$1.50 net. Pp. 420. Chicago: A. C. McClurg & Co., 1910.

This popular treatise on hygiene, intended for a purpose similar to that for which Cohen wrote his work recently reviewed in these columns, is far different in its style and content. Both books have their place; Cohen was concise, Sadler is discursive. This work is almost a popular physiology; the illustrations and tabulations are numerous and good. The layman will be led to read further by the interestingly argumentative way in which the sweet reasonableness of proper living is urged. Sadler is most thoroughly in earnest; he comes very near to exaggeration at some points; for example, "sunlight . . . is immediately fatal to the tubercle bacillus." But his abundant enthusiasm will be a tonic for the reader, and so we hesitate to criticize. The book is well worthy of being recommended for popular use.

FRACTURES AND THEIR TREATMENT. By J. Hogarth Pringle, F.R.C.S. (Eng.), Glasgow. Cloth. Price, \$5.50. Pp. 384, with 142 illustrations. New York: Oxford University Press, 1910.

This volume, profusely illustrated with photographs and skiagrams of the various pathologic conditions of fractures, together with their diagnoses and treatments, contains an account of the mechanism by which the different fractures are produced and of the methods of treatment possible to the average practitioner without hospital facilities, trained assistants and nurses. It also contains a bibliography which includes names of some of the classical works dealing with fractures, many of which give extensive lists of the writings on the particular phase under consideration. This book will appeal not

only to the surgeon but also to the general practitioner and student, for through its logical arrangement concise and comprehensive information is readily found, giving the diagnostic points and treatment of each individual pathologic condition.

URGENT SURGERY. By Felix Lejars, Professeur Agrégé à la Faculté de Médecine de Paris. Translated from the Sixth French Edition by William S. Dickie, F.R.C.S., Surgeon North Riding Infirmary, Middlesbrough. Vol. II. The Genito-Urinary Organs—the Rectum and Anus—the Strangulated Hernias—the Extremities. Cloth. Price, \$7 net. Pp. 580, with 536 illustrations. New York: William Wood & Co., 1910.

The second volume of the English translation of this work includes sections on the urgent surgery of the genito-urinary organs, the rectum and anus, a separate section on strangulated hernias of the different varieties, and a final section on the extremities. This latter includes in addition to fractures, dislocations, amputations, crushing and other injuries, paragraphs on the suture of blood-vessels, nerves and tendons, beside many other subjects. While all surgery, perhaps, may be said to be urgent surgery once a case is diagnosed as a surgical one, yet the author has limited his subjects to those coming within the limits of urgent surgery in the strict sense.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR. By E. B. Gleason, M.D., Clinical Professor of Otology in the Médico-Chirurgical College. Second Edition. Leather. Price, \$2.50 net. Pp. 562, with 228 illustrations. Philadelphia: W. B. Saunders Co., 1910.

The revision of this manual brings the information concerning these special topics down to date and affords the physician a reliable and practical working guide in the treatment of diseases of the nose, throat and ear. The section containing formulas of remedial agents, washes, sprays, gargles, ointments, etc., has been enlarged and includes a brief statement of the action of the various agents and their therapeutic application. While much space is given to the various operations recommended in the highly important middle-ear, mastoid and accessory sinus affections, the author does not neglect medicinal and other measures to be employed in the acute stages. The book is well illustrated and of a convenient size.

ATLAS UND GRUNDRISSE DER VERBANDELEHRE FÜR STUDIERENDE UND AERTZE. Von Dr. Albert Hoffa, a. o. Professor an der Universität, Berlin. Nach des Verfassers Tod bearbeitet von Privatdozent Dr. Rudolf Grashey, München. Lehmann's Medizinische Handatanten. Band XIII. Fourth Edition. Cloth. Price, 10 marks. Pp. 152, with 170 illustrations. München: J. F. Lehmanns Verlag, 1910.

The fourth edition of Hoffa's work has been revised and brought up to date by Dr. R. Grashey, instructor in the University of Munich. The first part of the work gives detailed instruction with reference to bandage materials and methods of application, and is followed by a collection of seventy-eight plates, illustrating the various methods employed for ordinary bandaging. The second part deals with special methods of bandaging, treatment of wounds, fractures, etc., and is illustrated by a collection of ninety-two plates. There are a number of illustrations incorporated in the text.

DIE HAUPTGRUNDGESETZE DER EPIDEMIOLOGISCHEN TYPHUS UND CHOLERAFORSCHUNG. Dargelegt von Dr. med. Friederich Wolter in Hamburg. Band. Paper. Price, 24 marks. Pp. 337, with illustrations. Munich: J. F. Lehmann, 1910.

This book is a laborious defense of an outworn creed, namely, the doctrine of a local predisposition to typhoid fever and cholera. Modern bacteriologic and epidemiologic studies have made such statistical compilations as the one before us seem antiquated and almost purposeless. There is little to be gained by such a one-sided treatment.

CARE OF THE PATIENT. A Book for Nurses. By Alfred T. Hawes, M.D. Cloth. Price, \$1 net. Pp. 173, with 6 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

This book tells in a simple and concise way how to do practically everything that comes within the ordinary routine duties of the nurse in hospital and in private practice in caring for patients from the moment they come under her care until discharged. It is an excellent book for the beginner and will teach system and correct methods to those more advanced.

HOW TO COOK FOR THE SICK AND CONVALESCENT. Arranged for the Physician, Trained Nurse and Home Use. By Helena V. Sachse. Fourth Edition. Cloth. Price, \$1.25 net. Pp. 337. Philadelphia: J. B. Lippincott, 1910.

The present edition of this book has been enlarged by the addition of a chapter on the substitutes for cane sugar. The book should be useful not only to those who must prepare food for the sick and convalescent but also for housekeepers; the recipes are practical and the directions clearly stated.

Medicolegal

Law Requiring Exclusion of Unvaccinated Pupils from Schools Constitutional and Must be Enforced

The Court of Appeals, First District, California, in *State Board of Health vs. Board of Trustees of Watsonville School, District of Santa Cruz County* (110 Pac. R. 137) holds that it was error to sustain a demurrer to the plaintiff's petition for a writ of mandate to compel the defendant trustees to comply with the act of 1889, entitled "An act to encourage and provide for general vaccination in the state of California." That statute provides: "The trustees of the several common school districts in this state and boards of common school government in the several cities and towns are directed to exclude from the benefits of the common schools therein any child or any person who has not been vaccinated, until such time when such child or person shall be successfully vaccinated," etc.

The court says that it has no doubt as to the constitutionality of the act. The legislature must necessarily be the judge as to legislation under the police power for the public health and for the purpose of preventing the spread of contagious diseases, the means used to prevent such spread, and the discretion within the scope of its powers, which discretion cannot be controlled by the courts except in cases where such discretion has been plainly abused.

Nor does the court consider this statute repealed by the subsequent compulsory education act. The latter is not inconsistent with the former. The parents of children are compelled to send them to school under the latter act, but they must comply with the law as to having them vaccinated in case they desire to avail themselves of the privilege of sending them to the common schools.

The vaccination statute is not directory, but mandatory. It is the plain duty of the trustees, and they are directed by the express terms of the statute, to exclude from the public schools any child or person who has not been vaccinated. Until the child has been vaccinated he must be excluded from the schools. If the trustees could use their discretion, and of their own will at times exclude and at other times admit to the schools children who have not been vaccinated, or if the trustees could exclude some children and admit others, the law would be uncertain and of little value. It was never the intention under the terms of the act that the board of trustees should possess such discretion. By its terms all are to be excluded, and the exclusion is to continue as to all until they have complied with the law.

The duty devolves on the defendants by virtue of their office to exclude such children. They must obey and not question the law. They are not compelled to hold their respective offices as trustees; but while in office it is their duty, and the duty of each and every one of them, to see that the law is enforced, and this whether the law is popular or unpopular, or whether they believe in the vaccination of children or otherwise. The law having been passed by the people, it is the duty of the trustees and of all persons to obey it until it is repealed.

Cities May Require Annual Tuberculin Test and Authorize Summary Seizure and Destruction by Health Departments of Milk from Uninspected Cows

The Supreme Court of Minnesota, in *Nelson vs. City of Minneapolis* (127 N. W. R., 445), holds valid, as a police regulation, a city ordinance prohibiting the bringing into the city for sale, or offering for sale therein, of milk from cows not previously subjected to the tuberculin test and found free from disease, the test to be applied annually, and the health department being authorized to summarily seize and destroy milk from untested cows.

The court says that in this case the city council, duly authorized thereto by legislative grant, which was that it might prescribe the terms and conditions on which milk, cream and butter might be exposed for sale in the city, determined that the tuberculin test of cows was the most feasible and practicable method of insuring a pure milk supply. This

involved a matter of legislative judgment and discretion, and necessarily a comparison with other methods designed to secure the same result, including the theory of pasteurization. It is probable that pasteurization, when placed on a practicable and workable basis, will be found superior to the annual tuberculin test; but the determination of that must be left to the legislative department.

It was urged that before destroying the milk the authorities should be required to ascertain whether it was in fact unwholesome and unfit for food, and that to permit them to destroy the same without regard to whether it was or was not free from disease germs authorized a taking of property for public use without compensation, and was not that due process of law guaranteed by the constitution. But the city council determined that the tuberculin test was a reasonable, and the most practicable, method of insuring purity in the milk brought into the city. To enforce the regulation the council had the power to impose such penalties as would render the regulation effective and serve the purpose intended. It provided, in addition to fine and imprisonment, a destruction of the condemned milk. The authorities sustain regulations of this character. It is in fact the only feasible method of preventing contaminated or unwholesome milk from reaching the citizens, and to enforce or compel a compliance with the ordinance. A mere fine or imprisonment of the offender would not prevent the milk reaching the consumers; but its destruction, when brought into the city, is effective for all purposes. This authority must be sustained, unless it is to be held as a matter of law that the city should either determine that the milk is in fact impure, or in the interests of the dairymen, establish and maintain a pasteurization plant, in which all milk brought into the city may be purified and rendered wholesome. But the dairymen and dealers in milk and cream, who persist in their refusal to comply with the inspection ordinance, which answers every purpose of the regulation, and entitles them to unrestricted entrance into the city with their milk, are in no position to urge the establishment of such a plant.

Society Proceedings

COMING MEETINGS

American Medical Association: Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.

Association of American Medical Colleges, Chicago, February 27-28.

Natl. Confed. of State Med. Exam. and Licng. Bds., Chicago, Feb. 28.

CLEVELAND ACADEMY OF MEDICINE

Meeting held Jan. 6, 1911

The President, DR. CHARLES B. PARKER, in the Chair

Treatment of Heart Disease

DR. L. F. BARKER, Baltimore: The causes of heart failure are many, but, in general, the treatment resolves itself into heart protection and heart stimulation or exertion. In most cases we must resort to the former first. We have four general methods of protecting the overworked, weakened heart. The patient must be put to bed and have absolute rest. The more quickly the symptoms disappear after beginning rest, the better the prognosis. If more restful, the Dutch bed, which elevates the thighs and flexes the knees, may be used. If the patient is very dyspneic, unable to sleep, a hypodermic of morphin sulphate, every night, for three or four nights, may be of great value and cause the turning point in a broken compensation.

As to diet, food should be given in five small meals rather than in three large ones. It is not necessary to say that all food should be easily digestible. Liquids must be restricted, and it is often well to limit total liquids to 1.5 liters in twenty-four hours. In selected cases the Carroll method of giving twenty-eight ounces of milk only in twenty-four hours, for three days, may be tried. I have often seen severe cases improve, and greatly increased kidney activity result, even in spite of restricted liquid intake. If the patient is constipated,

salines should be used in the morning. When the sufferer is cyanotic and very dyspneic, the right heart dilated, jugulars jumping, I have often found venesection to be of great value—removing from 200 to 300 c.c. of blood. Often the patient will get a good night's rest following this procedure. If there is a marked ascites or hydrothorax, the patient should be tapped. Of diuretics, there are several to select from: Theocin, grains 3 to 5, four times a day, for three or four days; theobromin-sodium salicylate grains 15, four times a day, may be tried. Many rely on the old-fashioned pill, containing mercury, squills and digitalis. Others frequently find calomel of value.

When the heart has had a start of several days protection, we can bring the principle of heart stimulation or exertion into play. Of the drugs increasing heart efficiency, digitalis stands first. Strophanthin is also an excellent remedy. Strophanthin itself is not to be recommended for use by the mouth as it is very irregular and frequently dangerous in its action. Other means of heart exertion to be employed are the carbon-dioxid baths as employed at Nauheim, and the principles of mechanotherapy. However, they are rather uncertain and only to be employed by one experienced in their use.

These are only the general principles of the treatment of heart disease and each case must be studied and individualized by itself. For example, in a case of heart-block we would be very careful in the use of digitalis, and in a case of fatty heart we would be quite likely to employ the principles of heart exertion first; rather than those of heart protection.

DR. C. F. HOOVER: In the last few years the study of heart action is viewed altogether different. In a given case it is often not so much a question of the hydraulics of the heart, e. g., there may be a marked deficiency in the mass movement of blood with a normal systolic and diastolic blood-pressure.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Dec. 23, 1910

The President, DR. HENRY LEFFMANN, in the Chair

Symptoms and Complications of Lobar Pneumonia

DR. JAMES M. ANDERS: While the mode of onset is characteristic in about 80 per cent. of the cases, about 20 per cent. begin insidiously. The latter often pursue a protracted course with slow defervescence, and are apt to show complications and sequelæ. Defervescence by lysis is more commonly observed at present than formerly, but they are unattended by a decided fall in the leukocyte count, while the reverse is true of the actual crisis. A high pulse-rate implies danger in pneumonia. Leukocytosis may be slight or absent in cases in which the struggle for life is lost. I have never observed leukopenia, but this may occur; and leukocytosis is also absent in cases in which the scene is dominated by a prior infection, such as typhoid fever and certain other conditions. It is important that an examination of the lungs be made in cases of mania a potu in which fever is present, since all other characteristic features may be in abeyance. The adhesive, rusty-colored sputum is a characteristic feature, but it is sometimes absent in the pneumonias occurring in the aged, in drunkards and in those showing marked toxemia. The physical signs yield evidence of great diagnostic importance. The value of systematic physical examination of the thorax, with a view to detecting consolidation when present in suspicious cases, is of the highest importance in subjects of emphysema and in the aged, in the acute infections, as well as in the commoner chronic diseases when fever develops. Certain signs may rarely arise in the opposite or uninvolved lung, such as impaired percussion-resonance, râles over the base, and to the fact that these are readily confused with actual consolidation. If practicable, blood-cultures should be undertaken in dubious cases. Pleurisy with more or less effusion complicates pneumonia in about 50 per cent of the cases. In at least 20 per cent. heart complications are present. Pleural effusion of moderate degree is extremely apt to be overlooked during life. Needling is essential in doubtful cases and also to distinguish between serum and pus. The special bacterial agent should always be isolated.

Among the commoner complications of pneumonia is empyema. In encapsulated empyema following pneumonia, a positive diagnosis is sometimes extremely difficult. Other means failing to prove the presence of pus, an exploratory operation should be done. In consequence of the toxemia or pneumonic septicemia, cardiac exhaustion may ensue without any marked histologic changes in either of the valves or the myocardium. Acute endocarditis is present in about 10 per cent. of the cases of pneumonia. It differs from other varieties: (1) in that three-fourths of the cases are ulcerative; (2) in that women show a higher incidence than men in the proportion of 2 to 1; (3) in that the aortic cusps are more commonly involved than the mitral. Pneumococcus endocarditis generally prevents the occurrence of the crisis. Pericarditis is a more frequent complication than endocarditis. Meningitis may be associated with endocarditis or occur independently as a complication, but this is comparatively rare. It can be diagnosed only by the presence of such features as bradycardia, paralyzes and neuro-retinitis, or in the absence of definite symptoms, by lumbar puncture. Acute nephritis probably occurs in about 7 per cent. of pneumonic infections. Chronic nephritis is frequently found at autopsies in cases of pneumonia (70 per cent. of the cases at the Philadelphia Hospital), so that it may be regarded as one of the commonest foregoing diseases.

Diagnosis of Pneumonia

DR. AUGUSTUS A. ESHNER: In the majority of cases the diagnosis of pneumonia is easy. With a history of exposure to cold, followed by chill, fever, pain in the chest, dyspnea, rapid, shallow breathing, irritative cough, viscid mucoid hemorrhagic sputum, labial herpes, pneumonia will suggest itself, and the diagnosis will be confirmed by physical examination. Difficulty in the recognition of pneumonia will arise principally in atypical cases. Error is to be avoided by constant vigilance, with frequent physical exploration. Among the disorders from which pneumonia requires to be differentiated are acute pleurisy, pulmonary tuberculosis, bronchopneumonia, congestion of the lungs, infarction, abscess, gangrene, bronchiectasis, actinomycosis, syphilis, malignant disease, pericardial effusion, meningitis, typhoid fever.

Surgical Complications of Pneumonia

DR. CHARLES F. NASSAU: Pneumonia is not wholly a medical disease, as is generally believed. With enormous effusion, removal by operation is the only proper course. Careful attention should be given to the cardiac condition. In a true empyema the treatment is clear: incision, with or without resection of the rib, and drainage. Abscess or gangrene of the lung is one of the most difficult propositions confronting the medical man and surgeon. The treatment of either consists in rib resection and the insertion of a drainage tube. There is a sentiment against tapping suppurative collections in the pericardium, and I believe it is very much safer to make a small rib resection, expose the pericardium, when a needle can be introduced with comparative safety. In sixteen years I have seen very few cases of arthritis complicating pneumonia. It affects chiefly the knee and occurs most frequently in children. Absolute diagnosis rests solely on bacteriologic examination of the joint fluid. When the pain in pneumonia is referred to the abdomen, the pain and tenderness may be as pronounced as in acute abdominal disease. Diagnosis is so difficult that laparotomy may be done.

The Medical Treatment of Pneumonia

DR. ARTHUR NEWLIN: Pneumonia patients should be isolated when possible. Two chief ends to be sought are the preservation of the patient's strength and the maintenance of his personal comfort. Local measures such as cupping or strapping are used for the control of pain. The use of baths is not advised in adults, but hot baths in children are frequently of value. Dyspnea and cyanosis are better controlled by cold air than by any other means. Milk remains the staple diet of pneumonia patients. The intestinal tract should be cleansed by calomel and salines. Such expectorants as ereosote and ammonium chlorid are rarely necessary; respiratory stimulants such as strychnin, atropin and aromatic

spirits of ammonia are useful. They should be administered as occasion indicates. Phlebotomy has its use when the consolidated lung offers a mechanical obstruction to the pulmonary circulation. For the cardiac weakness which results from fatigue and toxemia, such stimulants as strychnin, digitalis, aromatic spirits of ammonia, caffeine, atropin and camphor may be used. Of these strychnin and camphor are probably the best. Alcohol and digitalis are sometimes of use. Although there are objections to alcohol, yet in the aged and to those addicted to the use of the drug it may be used with benefit. Digitalis, preferably the fat-free standardized tincture, is given hypodermically. For lowered blood-pressure, rapid pulse and tympanites, epinephrin, 1 c.c. of a 1 to 1,000 solution, hypodermically, may be employed.

Strophanthin is a powerful cardiac stimulant and is given intravenously in milligram doses, but should not be repeated within twenty-four hours. Vaccine and serum-therapy has as yet not proved to be efficacious in the treatment of pneumonia. The treatment should be one of conservatism, relying on fresh air, various local measures and the ability to give the right drug at the right moment with the avoidance of routine administration.

DISCUSSION

DR. HENRY D. JUMP: Blood-pressure estimation in the prognosis and treatment of pneumonia is of far more value than the estimation of the respiratory rate. As has been pointed out, there is at a certain time in the toxic condition of pneumonia, a lowered blood-pressure accompanied by an accelerated pulse, which indicates a grave prognosis. This has seemed to me to offer a very distinct indication for therapeutic measures, and I am surprised that the observation has not attracted more attention in the treatment of pneumonia. Associated with this lowered tension and accelerated pulse we have, as a rule, a tympanites due to vasomotor paresis of vessels of the splanchnic. If this vasomotor paresis goes on to the greatest extent, the body becomes bled into its own vessels and active interference is called for.

DR. J. NORMAN HENRY: I have had satisfactory results with quinin, administered hypodermically, and the administration of salt solution by hypodermoclysis. In sixty-five cases of erupous pneumonia I have had ten deaths and some of these patients were moribund at the time the treatment was begun.

DR. HOBART A. HARE: In the vast majority of instances pneumonia is not a primary frank disease. To ascertain the value of any line of treatment in pneumonia we would have to have statistics covering hundreds of cases and divide them up into innumerable groups. The matter of the lowered arterial pressure and accelerated pulse-rate is one of the greatest importance in that it tells you far ahead of time that danger is impending.

organic disease (27.45 per cent.). Summarizing the cases the following is noted: Nineteen cases were due to cardiovascular disease; four to myocarditis with low blood-pressure; one to myocarditis with arteriosclerosis; ten to arteriosclerosis with high blood-pressure; four to beginning interstitial nephritis. Three cases were due to pulmonary disease; nine to gastrointestinal disease; three to cholecystitis, one to appendicitis, four to marked constipation, one to pyorrhea alveolaris. Four cases were postoperative; one case was due to scoliosis, and one to syphilis. Four cases were due to overwork; three to nervous shock. In seven cases the cause was undetermined. The authors emphasize the necessity for adopting the well-tried methods of examination that serve so well in plainly developed chronic disease as a routine measure in neurasthenics. Frequently one will discover underlying organic changes responsible for the disturbance in the nervous equilibrium. The relief of the former ought to be followed by relief of the latter. Such cases, they believe, should not be called neurasthenic; they should be called cardiac, arteriosclerotic, nephritic, toxic, etc.

3. Abstracted in THE JOURNAL, Dec. 24, 1910, p. 2260.

5. **Asthma and Anaphylaxis.**—The results of Barach's investigations into the anaphylactic origin of asthma are negative. If anaphylactin was present in the blood of his patient, it could not be demonstrated.

7. **Use of Albumin Milk.**—Albumin milk contains 3 per cent. proteid, 2.5 per cent. fat, from 1 to 1.5 per cent. milk sugar, from 0.4 to 0.5 per cent. mineral salts. The mixture contains 450 calories to each liter. One per cent. of malt sugar is added. Albumin milk is said by Abt to prevent abnormal fermentation in the intestinal tract on account (1) of the low content of easily fermentable sugar; (2) the low content of whey salts (the latter favor fermentation); and (3) the comparatively high proteid content (the latter counteracts fermentation). On standing, a precipitate is likely to form in the bottle containing the albumin milk. Before feeding, the bottle should be shaken well. The quantity to be fed should be warmed to the body temperature and again shaken (overheating is objectionable). The milk should be kept in a cool place. If thus taken care of it preserves its quality well, for at least five weeks.

Albumin milk is indicated, Abt states, in all infantile disorders which are associated with diarrhea, especially those cases in which breast milk is not obtainable. It is also valuable in cases of dyspepsia, entero-catarrh, cholera infantum (intoxication, Finkelstein), atrophy (decomposition, Finkelstein). As these diseases are accompanied or have been preceded by diarrheal attacks, the albumin milk is a valuable diet. The bowel movements soon improve, but the child does not at once gain in weight. As soon as the evacuations have improved, or have become less frequent, sugar in some form should be added. This should not occur too late; certainly at the end of eight days, if not before, sugar should have been added, even if the number and the appearance of the stools leave something to be desired. The albumin milk is given in increasing quantities until the stools have become less frequent. Saccharin may be added at first, so as to make the food more acceptable to the infant's taste. Children over three months of age may have starch in some form added to the albumin milk. The substance to be added is to be stirred up in a small quantity of water (2 ounces), boiled, and then added to the milk. The use of milk sugar or cane sugar is not advisable, since these lead readily to relapses. Much more certain in their action are the maltose preparations, or any of the dry malt preparations which do not contain milk in some form. At first one should add only a few grains of malt sugar to a 3-ounce mixture, but the quantity may be increased from day to day, particularly if the child does not increase in weight, adding 1 per cent. at a time. It is not advisable or necessary, at any time, to add more than 4 per cent. of sugar to the entire mixture. Children over 3 months will sometimes need the addition of starch in the form of flour; 2 or 3 drams of the latter may be added to an entire day's feeding.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

January 21

- 1 Metastasis to the Nervous System from Cancer of the Stomach and Intestine. H. L. Elsner, Syracuse, N. Y.
- 2 *The Organic Basis of Neurasthenia. J. M. Swan and C. C. Sutter, Watkins, N. Y.
- 3 *Do Medical Schools Adequately Train Students for the Prevention of Infant Mortality? I. S. Wile, New York.
- 4 Significance of the Bacillus-Carrier in the Spread of Asiatic Cholera. A. J. McLaughlin, Washington, D. C.
- 5 *Asthma and Anaphylaxis. J. H. Barach, Pittsburg, Pa.
- 6 Clinical Methods of Diagnosis of the Functional Activity of the Heart. J. Schneyer, Philadelphia.
- 7 *The Use of Albumin Milk. I. A. Abt, Chicago.
- 8 Phases of Asthenopia. D. W. Hunter, New York.
- 9 Case of Amebiasis with Abscess of the Liver in Green Island. J. B. Harvie and H. W. Carey, Troy, N. Y.

2. **Neurasthenia.**—The authors review the histories of fifty-one patients who were suffering from neurasthenia. In thirty-seven, the condition was dependent on organic disease (72.5 per cent.); in fourteen, it was apparently independent of

Medical Record, New York

January 21

- 10 Memorial Address on Dr. Robert Koch. J. A. Wyeth, New York.
- 11 In Memory of Robert Koch. S. A. Knopf, New York.
- 12 Pylorospasm. M. Elmhorn, New York.
- 13 Surgical Diseases of the Biliary Passages. A. B. Johnson, New York.
- 14 Oliver Wendell Holmes: His Work in Establishing the Contagious Nature of Puerperal Fever. T. W. Harvey, Orange, N. J.
- 15 Senile Debility. I. L. Nascher, New York.
- 16 *Ichthyol in Pulmonary Diseases. W. S. Barnes, New Haven, Conn.
- 17 Non-Parasitic Cyst of the Spleen; Splenectomy. C. G. Darling, Ann Arbor, Mich.

16. *Ichthyol in Pulmonary Diseases.*—It is believed by Barnes that ichthyol is a safe and valuable remedy in the treatment of such diseases of the respiratory tract as tuberculosis in the early stages, bronchitis in all its forms, and pleurisy. He says that ichthyol, when given in large doses, as high as 20 grains, three times a day, will produce a tendency toward frequent movements of the bowels. It diminishes the quantity of the discharge from the bronchial mucous membrane and hastens the return to a healthy condition, especially in the case of patients who have recovered from the acute bronchitis but still retain a cough, accompanied by profuse expectoration. Barnes believes that the drug is rapidly broken up in the stomach, and that it acts as a stimulant on the gastric mucous membrane, promoting a larger flow of gastric juice and increasing the power of digestion, thus aiding in the assimilation of food. Patients who have done well under ichthyol immediately begin to show a greater desire for food, and their appetites begin to increase with remarkable rapidity. In prescribing ichthyol for internal administration, Barnes' practice has been to give it in solution, and because of its objectionable taste, it is necessary to combine it with ordinary peppermint water, which makes a fairly palatable mixture. Sometimes he adds a small amount of fluid extract of licorice, together with peppermint water. It should be given after meals. A very convenient form of administration is to give it in the form of a tablet containing 5 grains.

Boston Medical and Surgical Journal

January 19

- 18 Sanatorium Treatment of Neurasthenia and the Need of a Colony Sanatorium for the Nervous Poor. F. K. Hallock, Cromwell, Conn.
- 19 Alimentary Gastric Hypersecretion and Gastric Atony. A. E. Austin, Boston.
- 20 *The Functional Spine. J. D. Adams, Boston.

20. *The Functional Spine.*—The symptoms of the condition described by Adams are as follows: Subjectively, the patient places his hand over the region of the lower dorsal and upper lumbar spine as indicating the area of pain. He describes it as being in the nature of an ache and a stiffness on attempting to straighten up from a stooping posture. He notices it most on getting up in the morning, it taking him some time to get limbered up, as he expresses it. Examination shows voluntary limitation of motion in the spine as evidenced by flexion in all directions being stopped by muscular spasm. Especially is this noticeable on forward and lateral bending, but hyperextension, where the spinal muscles are relaxed, is not limited. By forcing the patient to full forward and lateral bending, disregarding the pain, and, to a certain extent, overcoming the spasm, it will be noticed that the spine itself is capable of practically full motion in all directions; in other words, this is a "functional back," pure and simple. The one principle in the treatment of this class of cases is rest. This should be accompanied, if possible, by a method which does not incapacitate the patient for work. The second principle of treatment is that of counter-irritation, and the various agencies by which this may be produced are well-known. Adams reports twenty-five cases treated in dispensary and private practice. These cases were all routine, unselected; the occupation of the patients varied: teamsters, tailors, day laborers, namely, those men employed in a vocation necessitating constant use of the back. All presented the classical symptoms of pain, muscular spasm and limitation of motion in varying degrees of intensity. In all, the radio-

graphs were negative. Five of the patients were treated three times a week with fly blisters, five with actual cautery, five with strapping, five with plaster jacket, and five with heat. The treatment was continued over a period of two months. Clinically the results showed conclusively that those treated by heat improved much more rapidly and efficiently than any of the other groups. In fact, at the end of two months all the patients were put on baking. The heat was applied to the bare skin at a temperature of 300 F. for a period of fifteen minutes. The result showed a marked hyperemia with excessive perspiration and with relief from pain. There were no burns and no untoward effects. The intervals of application were gradually lengthened in accordance with the diminution of symptoms. In nearly every case a light pelvic belt was applied as an adjunct to this treatment.

Lancet-Clinic, Cincinnati

January 21

- 21 Requirements and Limitations of Nitrous Oxid and Oxygen as a General Anesthetic in Major Surgery. C. K. Teter, Cleveland.
- 22 Cases Treated by Spengler's I, K. (Immune Bodies). W. F. Woolston, Chicago.
- 23 Foreign Bodies in the Esophagus in Children. W. E. Savage, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

January 13

- 24 Surgical Aspect of Goiter. R. P. Bell, Staunton, Va.
- 25 Syphilis and Nicotin as Factors in Cardiovascular Disease. A. G. Brown, Richmond.
- 26 The Part of Medical Men and Medical Societies in the Public Health Movement. C. R. Grandy, Norfolk.
- 27 Salvarsan. T. B. Leonard, Richmond.
- 28 Hygiene of the Eye and Throat. C. R. Dufour, Washington, D. C.

Journal of Experimental Medicine, Lancaster, Pa.

January

- 29 *Chemo-Immunologic Studies on Localized Infections. R. V. Lamar, New York.
- 30 *Arteriovenous Anastomosis and the Mechanical Theory of Arteriosclerosis. I. Levin and J. H. Larkin, New York.
- 31 Heat-Sensitive Anticomplementary Bodies in Human Blood Serum. H. Zinsser and W. C. Johnson, New York.
- 32 Biochemical Studies on So-Called Syphilis Antigen. H. Noguchi and J. Bronfenbrenner, New York.
- 33 Variations in the Complement Activity and Fixability of Guinea-Pig Serum. H. Noguchi and J. Bronfenbrenner, New York.
- 34 *Comparative Merits of Various Complements and Amboceptors in Serodiagnosis of Syphilis. H. Noguchi and J. Bronfenbrenner, New York.
- 35 Interference of Inactive Serum and Egg-White in the Phenomenon of Complement Fixation. H. Noguchi and J. Bronfenbrenner, New York.
- 36 *Histologic Study of the Skin Lesions of Pellagra. F. B. Gurd, New Orleans.
- 37 *Pathogenesis of Icterus. G. H. Whipple and J. H. King, Baltimore.
- 38 Fibrinogen of the Blood as Influenced by the Liver Necrosis of Chloroform Poisoning. G. H. Whipple and S. H. Hurwitz, Baltimore.
- 39 Changes in the Proteolytic Enzymes and Anti-Enzymes of the Blood Serum Produced by Substances Which Cause Degenerative Changes in the Liver. E. L. Opie, B. I. Barker and A. R. Dochez, New York.

29. *Chemo-Immunologic Studies on Localized Infections.*—The experimental studies by Lamar show that the results may be reproduced in the treatment of local pneumococcus infections in human beings, particularly after an evacuation of an inflammatory exudate. He found that pneumococci treated with sodium oleate become more subject to autolysis, as is indicated both by the rapidity and the perfection of the process of self-digestion, and at the same time they become subject to serum-lysis. The inhibition of their activity, which the soaps ordinarily suffer in the presence of protein, can be prevented by the addition of an appropriate quantity of boric acid, so that suitable mixtures of serum, soap and boric acid can continue to exert a deleterious and solvent influence on the pneumococci, and the effect is greater when immune serum is employed in the mixtures. Infection can be prevented not only when the mixture of immune serum, soap and boric acid is added to the pneumococci before injection into the peritoneal cavity of small animals, but also when a therapeutic injection of a mixture of the three substances mentioned is made to follow the inoculation of normal, highly virulent diplococci. The limits of the activity of the therapeutic mixture are determined, in part by the

amount of protein to be overcome, and in part by the peculiarities of the infection occurring in highly susceptible animal species.

30. Theory of Arteriosclerosis.—From the author's investigation the conclusion must be drawn that arteriosclerosis cannot be induced artificially in a previously healthy blood-vessel by a change in the blood pressure alone, and that the thickening of the wall and the other changes noticed in such vessels is probably due to changes in the adventitia caused by the operative procedures.

34. Serodiagnosis of Syphilis.—Noguchi and Bronfenbrenner found that the maximum activity of an antihuman hemolytic amboceptor may be obtained by employing the homologous or heterologous complement, according to the variable relations existing between the species furnishing the amboceptor and the one supplying the complement. Thus, some amboceptors are best reactivated by the complement of the same species, while others may act most strongly when reactivated with the complements of certain suitable heterologous species. Certain species of animals (pig and sheep) yield sera which are comparatively poor in reactivating most varieties of antihuman amboceptors. The complements of these species deteriorate rapidly. For the fixation tests, guinea-pig complement is the most favorable. This complement is also the most active and durable of those which have been studied. The antihuman amboceptors produced in the rabbit and guinea-pig are also suitable. They are, moreover, very active and do not cause the phenomenon of non-fixation. The rabbit is the best animal for producing antihuman amboceptor, and the guinea-pig for supplying complement. The guinea-pig produces a good amboceptor, but its small size renders it second in choice.

36. Skin Lesions of Pellagra.—The histologic phenomena of the erythematous and bullous stage of pellagra, Gurd says, are those of a mild acute inflammatory reaction, together with a degeneration in the superficial layers of the corium. Following this degeneration, which involves not only the general connective tissue but the connective tissue of the blood-vessels, there is a reparative change, evidenced histologically by an increased cellularity of the corium and the presence of fibroblasts. The capillaries also are increased in number and much dilated. Apparently as a result of this increased vascularity of the corium, there is an increased proliferation of the epithelium resulting in a thickening of the epidermis. This increase in the thickness of the epithelial layer is especially marked in the prickle cells and the stratum granulosum. In the later stages, in an effort to secure a firm basement membrane, the epithelium is seen to dip down deeply into the rarefied connective tissue. About the blood-vessel, during the reactionary process, are found collections of lymphoid cells, a few plasma cells, but no mast cells or eosinophils. That the irritant producing the degeneration in the corium is sunlight in the presence of some predisposing factor, Gurd believes is suggested by the enormous increase in pigment formation in the epithelial cells and by the large number of chromatophores in the superficial layers of the corium. This pigmentation is autochthonous in both types of cell. There is no reason for believing that the pigment is formed in the cells of the corium and thence discharged into the epithelium, or that the reverse process takes place. The predisposing factor inducing the changes in the corium is, apparently, a lessened resistance of the epithelium to the violet and ultra-violet rays, due to some metabolic insufficiency on the part of the epithelial cells.

37. Pathogenesis of Icterus.—The experiments made by Whipple and King indicate that, in obstructive jaundice, the bile which escapes from the liver is absorbed by the hepatic capillaries and carried by the blood to the kidneys. The presence of a thoracic duct fistula influences in no way the development of icterus after total obstruction of the common bile duct. Bile pigments, sufficient to give a Salkowski test, may or may not appear in the lymph of the thoracic duct in such experiments, their appearance possibly depending on the rapidity of bile secretion and the amount of lymph flow. Chronic icterus developing in an animal with a thoracic duct fistula gives an interesting distribution of bile pigments in

the body fluids. The lymph and pericardial fluid contain the same amount, which is much less than the content of bile pigment in the blood serum and urine. It seems clear that in both acute and chronic obstructive jaundice the lymphatic apparatus takes no essential or active part in the absorption of bile pigments from the liver. At best, the lymphatic system is a secondary factor in the mechanism of jaundice.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

January 15

- 40 Esophagoscopy and Bronchoscopy for Removal of Foreign Bodies. A. Schwyzer, St. Paul.
- 41 Economics of the Pure Milk Question. J. L. Coulter, Minneapolis.
- 42 Some Next Steps in Sanitation. J. T. Gerould, Minneapolis.

Maryland Medical Journal, Baltimore

January

- 43 *Medical and Surgical Aspects of Tumors. J. V. Bloodgood, Baltimore.
- 44 The Faucial Tonsil—Its Relation to Systemic Disease and the Results of Its Removal. S. Rosenheim, Baltimore.
- 45 Some Esophageal and Bronchoscopic Cases. R. H. Johnston, Baltimore.
- 46 Alcohol Injections in Treatment of Facial Neuralgia. I. J. Spear, Baltimore.
- 47 Sanctity of the Relations Between Physicians and Patients. E. L. Crutehfield, Baltimore.
- 48 Treatment of Diphtheria. E. Anderson, Rockville.

43. Also published in the *Wisconsin Medical Journal*, August, 1910; abstracted in *THE JOURNAL*, July 23, 1910, p. 44.

Bulletin of the Johns Hopkins Hospital, Baltimore

January

- 49 *Urinary Hyperacidity and Its Relations to Neuritis, Neuralgia and Myalgia. T. R. Brown, Baltimore.
- 50 Analysis of the Course of Labor in 100 Occiput Posterior Presentations. C. B. Ingraham, Denver.
- 51 Poisoning by Vapors of "C.P." Benzol. C. Glaser, Baltimore.
- 52 *Viscosity of the Blood in Health and Disease. C. R. Austrian, Baltimore.
- 53 *Case of Sarcoma and Tuberculosis. J. P. Simonds, Indianapolis.
- 54 Carcinoma of the Right Fallopian Tube Readily Palpable Through the Abdomen. T. S. Cullen, Baltimore.

49. Urinary Hyperacidity and Neuritis.—It is shown by Brown that in a certain group of cases of neuritis, neuralgia and myalgia, which for want of a better term, and in the absence of definite or sufficient etiologic factors may be called idiopathic, there is a definite increase in the acid eliminated, although no attempt has been made to determine whether this is due to an increase in the acid phosphates, or in the organic acids. He believes, however, that the latter is more likely, and hopes subsequently to investigate this phase of the subject in detail. For want of a better explanation he suggests that this hyperacidity is probably the urinary expression of some abnormality or error in metabolism, probably having little or no relationship with the gastric digestion or the degree of acid in the gastric contents, but more probably due to metabolic disturbances arising lower in the digestive tract; and that the pain and other manifestations in the nerves or muscles affected are due to some circulating poison or toxin, the condition thus probably being a form of endogenous intoxication. Why certain groups of nerves or muscles should be selected in some cases, other groups in other cases, he is unable to say, though in all probability there has been something in the past history of the patient as trauma, exposure to cold, etc., which has lowered the resistance of the especial nerve or muscle affected. Finally, it seems certain that in some patients the insistence on a simple dietary and copious water drinking and, most important of all, the administration of alkalies in sufficient amount to reduce the acidity of the urine to normal, is followed by marked amelioration of symptoms; and in a few by their complete disappearance without the aid of other remedial agents.

52. Viscosity of the Blood in Health and Disease.—Austrian found that the viscosity of the blood and of the plasma is reduced in anemias, either primary or secondary. With regeneration of the blood, normal values are restored. In leukemia there is hypoviscosity of the blood with hyperviscosity of the plasma. Leukocythemia may explain the hyperviscosity of the blood, which is found in a few cases. The viscosity of the blood and of the plasma is increased in polycythemia. Hypo-

viscosity of the blood and hyperviscosity of the plasma is almost constant in cases of nephritis; the former being due to the anemia, the latter to retained products of metabolism. Though in many instances hypoviscosity occurs in cases with hypertension, this interrelation is often absent. In cardiac disease without edema, no constant change in the viscosity is to be found, the coefficient apparently varying with the anemia and the carbon dioxide content of the blood. In cases with hydremia, there is hypoviscosity of the plasma. In diabetes mellitus, the viscosity of the blood and of the plasma is increased, in many cases probably the result of concentration of the blood, due to polyuria, of hyperglycemia and of lipemia. In icterus there is generally increased viscosity of the blood and plasma, probably the result of cholemia. In typhoid, the viscosity varies with anemia, is increased by hydrotherapy, (Hb)

and apparently is uninfluenced by diet. The $\frac{\text{Hb}}{V}$ quotient

is more often decreased than increased. In pneumonia the viscosity is generally above normal due to cyanosis and salt (Hb)

retention. Here, too, the $\frac{\text{Hb}}{V}$ quotient is low. In malaria

the viscosity of the blood is usually normal or subnormal, rarely above normal. The viscosity of the plasma is normal or increased, the last as a result of hemoglobinemia. In no disease studied could a pathognomonic alteration in the viscosity of the blood be demonstrated.

53. Sarcoma and Tuberculosis.—The following are suggested by Simonds as possible reasons why the two lesions are not more frequently found associated: (1) The age incidence of the two diseases is not quite the same. Sarcoma and tuberculosis affect all ages, but the former is more frequent before 20 and the latter after that age. (2) The rapidly fatal course of a sarcoma may attract attention to itself so completely that the presence of a mild tuberculosis would not be recognized clinically.

Colorado Medicine, Denver

January

- 55 The Pancreas; Anatomy and Experimental Pathology. R. W. Corwin, Pueblo.
- 56 Pathology of Pancreatitis. R. C. Whitman, Boulder.
- 57 Acute Pancreatitis. A. R. Peebles, Boulder.
- 58 Chronic Pancreatitis. W. Senger, Pueblo.
- 59 Surgery of the Pancreas. W. A. Jayne, Denver.
- 60 Primary Sarcoma of the Appendix. C. A. Powers, Denver.
- 61 Operative Treatment of Hemorrhoids. H. Heath, Denver.

Journal of Ophthalmology and Oto-Laryngology, Chicago

January

- 62 Twitching of the Orbicularis Palpebrarum Successfully Treated with Calcium Chlorid. T. C. Burnett, Berkeley, Cal.
- 63 Some Unusual Magnet Cases. W. A. Fisher, Chicago.
- 64 Cysts of the Antrum of Highmore. J. R. Fletcher, Chicago.

Journal of the Delaware State Medical Society, Wilmington

January

- 65 Ideals in Medicine. P. M. Downs, Dover.
- 66 Erysipelas Treated with Streptococcic Bacterins. A. Robin, Wilmington.
- 67 Chronic Non-Malignant Disease of the Tonsils. J. A. Ellegood, Wilmington.

Surgery, Gynecology and Obstetrics, Chicago

January

- 68 *Stereoscopic Radiography as an Aid to the Surgeon. E. G. Beck, Chicago.
- 69 Cancer of the Uterus and Its Cure by the Radical Abdominal Operation. R. Peterson, Ann Arbor, Mich.
- 70 Kidney Displacements and Dystocia. P. Willson, Washington, D. C.
- 71 Operative Cure of Cicatricial and Congenital Deformities of the Face. J. B. Roberts, Philadelphia.
- 72 *Best Method of Exposing the Interior of the Bladder in Suprapubic Operations. H. A. Kelly, Baltimore.
- 73 Significance of the Lane Kink of the Ileum. F. H. Martin, Chicago.
- 74 *Hemorrhage of the New-Born Infant; Treatment by Direct Transfusion of Blood. V. D. Lespinasse and G. C. Fisher, Chicago.
- 75 *Experiments on the Renal Artery. V. D. Lespinasse, G. C. Fisher and J. A. Wolfer, Chicago.
- 76 *Treatment of Painful Feet. J. L. Porter, Chicago.
- 77 Acute Free Suppurative Peritonitis. J. Halpenny and J. Gorrell, Winnipeg.
- 78 *Value of Sulphone-thalein in Estimating the Functional Efficiency of the Kidneys. C. Goodman and L. Kristeller, New York.
- 79 *Pneumatic Rupture of the Intestine; A New Type of Industrial Accident. E. W. Andrews, Chicago.

- 80 A Malignant Lymphoma of the Small Intestine. C. L. Seudder, Boston.
- 81 The Roux Operation in Dilatation of the Stomach. R. E. Balch, Kalamazoo, Mich.
- 82 Non-Inflammable Celluloid Splints and Braces. W. G. Stern, Cleveland, Ohio.
- 83 Finishing the Buttonhole Stitch. J. J. Buchanan, Pittsburgh, Pa.
- 84 Bone Wiring with Picture Wire. J. Schwinn, Wheeling, W. Va.
- 85 Thrombosis Postabortum of Left Ovarian Vein; Hysterectomy; Death from Continued Thrombophlebitis. R. T. Frank, New York.
- 86 *Modification of Usual Technic in Delivery of the First Arm in Podalic Version or Breech Presentation. D. C. Guffey, Kansas City, Mo.

68. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1584.

72. Best Method of Exposing Interior of Bladder.—In the method described by Kelly, the patient is put in the Trendelenburg posture, after first emptying and cleaning out the bladder, and introducing a mushroom catheter large enough to fill the urethra. A semilunar incision is made through the skin and fat of the lower abdomen about one inch above the symphysis pubis, with the concavity toward the umbilicus and about six inches long. The small bleeding vessels are controlled. The dissection of the upper skin and flap away from the deeper tissues is next made, when the deep fasciæ overlying the recti muscles and the adjacent oblique muscles out beyond the semilunar line are clearly exposed. Next the deep fasciæ are divided, also from side to side, without cutting any of the underlying muscular tissues. The fasciæ are then freed from the muscles with the blunt dissection. To effect this detachment it is, as a rule, only necessary to push the gloved finger up between the muscles and fasciæ; in the median line, however, the detachment must be made by means of scissors or a knife. When the loosened fasciæ have been drawn up and down, the underlying flaccid recti muscle bellies are exposed and easily retracted to the right and left, and this affords an extraordinary avenue of approach to all the tissues lying between the peritoneum (seen as a roll in the upper part of the wound near the point of the forceps lying across the abdomen) and the symphysis pubis. An inflating rubber bulb is now attached to the mushroom catheter in the bladder and squeezed so as to fill the bladder with air and to bring it up into the wound. The empty bladder is then caught by two guy sutures and incised in a transverse direction between them. If the opening is carefully made, there need be no contamination, as the bladder is held up by the guy sutures and will not spill its contents into the wound. As soon as the bladder is cut into, the opening is enlarged as much as may be necessary from side to side. The base of the bladder is brought perfectly into view and is easily accessible for all operative procedures. After completing whatever operation the circumstances of the case may demand, the operator closes the bladder by such method as he prefers, with or without drainage, taking care to utilize the perivesical fasciæ in the outermost row of sutures, he closes the abdominal wall down to the little suprapubic drain, if one is called for. By first uniting the recti with catgut and then uniting the deep fasciæ of the abdominal wall, leaving room in most cases for a small drain in the median line, the operation is completed.

74. Hemorrhage of New-Born Infants.—A review of the literature and the observation of one case have convinced the authors that direct transfusion of blood is the ideal treatment for hemorrhage of the new-born; it meets and overcomes in an ideal manner the three chief indications: hemorrhage, anemia and infection. Transfusion checks the hemorrhage at once and cures the acute anemia. Direct transfusion of blood fills the baby's veins with a plasma that is more resistant to infections than the original plasma. In the cases without syphilitic taint, direct transfusion of blood is an absolute specific. It is best performed early, but it is never too late, and the operation should be tried in every case before the child dies.

75. Experiments on the Renal Artery.—The technic of this method of vessel anastomosis was published in THE JOURNAL, Nov. 19, 1910, p. 1785.

76. Treatment of Painful Feet.—The four essentials mentioned by Porter are rest, supination, support and exercise.

In addition to these, he says, operation may be necessary, as in cases with exostoses or contracted tendons, but whatever be the condition under treatment, if the predominating symptom is pain, the first four procedures are essential.

78. Sulphonephthalein in Estimating Kidney Function.—According to Goodman and Kristeller phenolsulphonephthalein lends itself to accurate colorimetric measurement. The drug does not readily decompose in solution and can be sterilized by boiling. The dose required is small, 1 c.c. of solution containing 0.006 gm. of the dye. The injection is painless, and is not followed by irritation if the solution is sufficiently alkaline. It is excreted entirely by the kidneys and can be demonstrated in the urine in from three to ten minutes after the subcutaneous injection. From 50 to 70 per cent. is excreted during the first two hours. The quantity of dye recovered in a specimen within a given time is not influenced by the volume of urine. The presence of pus, phosphates, bile and indican does not interfere with the colorimetric estimation of this drug.

79. Pneumatic Rupture of the Intestine.—Fifteen cases are reported by Andrews in which compressed air caused an intestinal rupture. One of these cases was observed by the author; the others were collected by him through correspondence with other observers. The sigmoid colon is the viscus usually burst. Prompt evacuation of the air by emergency puncture and early laparotomy offer the only chance of saving life after this injury. Andrews warns against the dangers of practical joking or hazing with the air nozzle or even the careless use in dusting clothing.

86. Podalic Version or Breech Presentation.—The method proposed by Guffey consists in the delivery of the arm at the same time the body is delivered. When the feet (or the foot, if desired) have been delivered at the vulva, one hand of the operator holds them while the other is introduced into the uterine cavity and an arm seized, preferably the right, since the bringing of this arm into the left sacroiliac fossa will cause the head to engage in the more desirable right oblique with the occiput anterior. The hand of the child is then brought into the vagina and traction is made on it at the same time as on the feet or body. The hand of the operator is not removed from the vagina until the breech presents at the vulva or is actually born. As the body is grasped by the outspread hands the arm is included. The body with the first shoulder and arm is delivered, not more than one minute being required for this portion of the delivery. The second arm and the head are delivered by the usual method. The proposed method has been used by Guffey in ten cases: eight podalic versions and two breech presentations. The disadvantages of this method are said to be (1) the added risk of infection from the introduction or reintroduction of the hand into the uterine cavity; (2) the inability to introduce the hand into the uterine cavity; (3) the size of the operator's hand. The advantages of the method are: (1) much valuable time is saved; (2) lacerations of importance are less likely to occur; (3) fractures of the humerus or clavicle will be less likely to occur; (4) if cervical dilatation is not complete it may be completed manually when the hand is passed in for the arm.

Kentucky Medical Journal, Bowling Green

January 1

- 87 Present Status of Surgery of the Thoracic Cavity, Experimental and Applied. W. E. Senour, Bellevue.
- 88 *Indications and Technic of Cerebral Decompression. E. S. Allen, Louisville.
- 89 *Fracture of the Base of the Skull. D. C. Donan, Horse Cave.
- 90 *Intracranial Complications of Otitis Media. G. C. Hall, Louisville.
- 91 Cancer of Breast—Diagnosis and Treatment. J. T. Reddick, Paducah.
- 92 *Cancer of the Uterus. W. H. Wathen, Louisville.
- 93 *Diagnosis and Treatment of Cancer of the Gastro-Intestinal Tract. J. H. Blackburn, Bowling Green.
- 94 Cancer of the Urogenital Tract; Diagnosis and Treatment. C. L. Wheeler, Lexington.
- 95 *Inguinal Hernia. B. F. Van Meter, Lexington.
- 96 Diagnosis and Treatment of Enterocolitis in the Adult. E. A. Stevens, Mayfield.
- 97 *Neurasthenia. W. F. Boggess, Louisville.
- 98 Popliteal Aneurysm with Report of Matas Operation. J. R. Murnan, Covington.
- 99 *Family Physician Refracting as a Factor in Medical Practice, and Its Promotion During 1910. L. Connor, Detroit.

88, 89, 90, 92, 93, 95, 97. Abstracted in THE JOURNAL, Oct. 22, 1910, pp. 1493-1495.

99. Abstracted in THE JOURNAL, April 16, 1910, p. 1333.

Northwest Medicine, Seattle

January

- 100 *Bladder Sequelæ of Hysterectomy and Salpingo-Oophorectomy. G. S. Peterkin, Seattle.
- 101 Early Diagnosis of Pulmonary Tuberculosis. R. W. Matson, Portland, Ore.

100. Bladder Sequelæ of Hysterectomy.—Within one year, eleven women have been referred to Peterkin because of urinary symptoms—frequent and painful urination, etc. Six patients had had hysterectomies; all had cystoceles. Two patients had never borne children so that in each the perineum was intact. Of the four remaining, only one showed a perfect repair of the perineum and all four stated that attempt at repair had been made previous to the hysterectomies. Four of the six hysterectomies had been vaginal. Peterkin concludes that vaginal hysterectomy should be considered an antiquated operation, for proper care cannot be given to the support of the bladder and thus cystocele prevented. Had the operators at the time of the operations given proper care to the bladder, cystocele would not have occurred, requiring a secondary surgical operation. Because hysterectomy is performed, there is no reason why perineal tears should not be repaired. Cystocele was the cause of the urinary symptoms complained of in these cases. Salpingectomy and oophorectomy Peterkin regards as scientific operations only when they aim to leave the pelvic viscera in a normal position, and he also states that the man who performs nephropexy, without repair of the pelvic viscera when prolapse exists, is not a surgeon but an operator.

Journal of the Missouri State Medical Association, St. Louis

January

- 102 The Internal Splint in the Treatment of Fractures. H. E. Pearce, Kansas City, Mo.
- 103 Roentgen-Ray Localization of Foreign Bodies. R. D. Carman, St. Louis.
- 104 Refraction. J. W. Sherer, Kansas City, Mo.
- 105 Berck-Sur-Mer: A City of Hospitals for the Treatment of Bone Tuberculosis. A. E. Horwitz, St. Louis.
- 106 Intestinal Obstruction from Appendiceal Adhesions. C. R. Dndley, St. Louis.
- 107 Hypnotism as a Therapeutic Agent. J. M. Bradley, St. Louis.
- 108 Chronic Mastoiditis and Cholesteatoma. I. D. Kelley, St. Louis.
- 109 The Bladder in Inguinal and Femoral Hernias. W. T. Coughlin, St. Louis.

Texas State Journal of Medicine, Fort Worth

January

- 110 *Relation of Bovine to Human Tuberculosis from a Public Health Viewpoint. W. S. Carter, Galveston.
- 111 Comparison of the Morphologic and Cultural Characteristics of the Human and Bovine Types of Tubercle Bacilli. J. J. Terrill, Galveston.
- 112 Relative Importance of the Infection and Transmission of Bovine and Human Tuberculosis to Public Health. W. R. Howard, Fort Worth.
- 113 The Microscope in Tuberculosis. R. B. Leavell, San Angelo.

110. Relation of Bovine to Human Tuberculosis.—Carter holds that from experiments, as well as statistics, one is not justified in assuming that primary pulmonary tuberculosis is caused by bacilli that have been absorbed from the intestine. On the contrary, it is highly improbable that such is the case, for as yet, the bacilli of bovine type have never been recovered from the lesions of primary tuberculosis of the lungs in man and they have only been found in the sputum of two or three isolated instances, which were not free from some criticism. Bacilli of the bovine type have been recovered from a considerable number of cervical and mesenteric lymph glands in children and from the lungs in some cases of generalized tuberculosis in children. In these latter cases the resistance might have been slight, or there might have been an invasion by unusual numbers of bacilli of high virulence. However, he says our efforts should be directed chiefly against the infection from man to man, but that is no reason for neglecting the less frequent infection from cattle. Even if no more than 1 or 2 per cent. of the fatal cases of tuberculosis in man are caused by bacilli of the bovine type, that

cannot be considered a negligible quantity. The non-fatal cases of surgical tuberculous in children must be taken into consideration. All the efforts that have been made to prevent the use of the milk and butter from tuberculous cattle have been justified, as public health measures, and should be continued. We should not, however, neglect any measures which can prevent infection by inhalation. All prophylactic measures that have been taken to prevent the spread of bovine tuberculous among cattle have also been warranted from an economic standpoint alone, without any reference to the public health. It is perhaps impossible to completely eradicate bovine tuberculosis, but all tuberculous cattle should be eliminated from dairy herds. This could be done by systematically testing all dairy cattle with tuberculin and branding those which give a positive reaction. These cows could probably be used as beef cattle with safety, provided all tuberculous tissues are removed and all advanced cases are excluded. This seems to be a much safer plan than to use the milk for butter-making after pasteurization. Pasteurization at the dairy is often not done efficiently and most of the butter is consumed without subjecting it to a temperature which would kill tubercle bacilli. In the absence of dairy inspection and the testing of milk cows by tuberculin, the only certain way of preventing infection by bovine tubercle bacilli is the pasteurization of the milk. This should be done by the individual consumer, rather than trust to the uncertain pasteurization by dairymen.

Illinois Medical Journal, Springfield

January

- 114 Operative Cure of Cicatricial and Congenital Deformities of the Face. J. B. Roberts, Philadelphia.
- 115 *Joint Diseases from the Orthopedic Standpoint. J. Ridlon, Chicago.
- 116 *Neurologic Features in Some Joint Lesions. A. Church, Chicago.
- 117 *Bacteriology and Pathology of Arthritis. E. E. Irons, Chicago.
- 118 Importance of Medical Organization in the Diffusion of Medical Knowledge and the Promotion of Ethical Relations Among Physicians. J. W. Smith, Bloomington.
- 119 Gastro-Intestinal Disorders of Infancy and Early Childhood. J. W. Van Derslice, Chicago.
- 120 *Skull Fracture. F. C. Schurmeier, Elgin.
- 121 *Symptoms and Treatment of Exophthalmic Goiter. C. C. Rogers, Chicago.
- 122 Superstitions of the Medical Profession in Regard to Contagious Diseases. J. E. Stubbs, Chicago.
- 123 Pleurisy from the Medical Standpoint. T. E. Macaulay, Elgin.
- 124 Edema of the Prostate. G. Kolischer and H. Kraus, Chicago.

115, 116, 120 and 121. Abstracted in THE JOURNAL, June 4, 1910, pp. 1892 and 1893.

117. Abstracted in THE JOURNAL, May 28, 1910, p. 1808.

Journal of Cutaneous Diseases, New York

January

- 125 Nodular Tuberculosis of the Hypoderm. G. W. Wende, Buffalo, N. Y.
- 126 Mycosis Fungoides. L. G. Pardee and F. R. Zeit, Chicago.
- 127 *An Unusual Case of Tinea Versicolor. E. L. McEwen, Chicago.

127. **Tinea Versicolor.**—The patient in this case was a man, aged 27, with incipient tuberculosis of the lungs. The skin eruption had been present twelve years. It had never disappeared and there had been no recent treatment. Subjective symptoms were absent. The parts involved were the back from the shoulder to the buttocks, the chest and upper portion of the abdomen, the infra-axillary regions, the arms, especially the outer aspects, and the upper portions of the forearms. In places on the arms and chest the appearance was quite typical of tinea versicolor; various sized areas, non-elevated, of irregular outline, brownish in color, slightly furfuraceous. Between these areas and on the other parts affected, especially the back, the lesions were discrete, flat-topped papules, reddish-brown in color, hemp-seed to split-pea in size, follicular in location, usually pierced by a hair. The skin between the papules was normal. The elevation was distinct and could readily be seen with the eye and felt by the palpating finger. The impression given by a superficial examination of the skin was that a lichenoid follicular inflammation was present. The lesions of pityriasis rubra pilaris especially were suggested. The papules, how-

ever, could be removed with a curette; the skin beneath appeared pale and non-inflammatory, and the debris so removed showed under the microscope luxurious masses of the *Microsporon furfur*.

United States Naval Medical Bulletin, Washington, D. C.

January

- 128 Diphtheria Prophylaxis in the Navy. C. S. Butler.
- 129 Salvarsan. R. Spear.
- 130 Diagnostic Methods in Otology Applicable to the Naval Service. G. B. Tribble.
- 131 *Bier's Hyperemia in Acute Gonorrheal Arthritis. H. F. Strine.
- 132 Mental Examination of Candidates for Enlistment in the Navy and Marine Corps. H. Butts.
- 133 Recent Outbreak of Cholera in Italy. C. J. Holeman.
- 134 United States National Museum in Its Relation to Other Government Scientific Collections. P. E. Garrison.
- 135 A Sanitary Garbage-Can Holder. H. C. Kellers.
- 136 *The Blanket Splint. F. X. Koltes.
- 137 Four Transfusions by the Vein-to-Vein Method with Curved Glass Tubes. A. M. Fauntleroy.
- 138 Bilateral Inguino-Superficial Hernia with Bilateral Undescended Testicle. H. C. Curl.
- 139 Larvæ in the Deep Urethra and Bladder. H. F. Strine.
- 140 An Extensive Razor Wound of the Throat. W. G. Farwell.
- 141 Two Cases of Heat Cramps on U. S. S. *Charleston*. H. A. May.
- 142 Fatigue and Exhaustion in the Fireroom. F. G. Abeken.
- 143 A Case of Diabetes Mellitus. A. C. Stanley.
- 144 Sciatica Incident to Physical Test. J. A. B. Sinclair.
- 145 Poisoning from Injection of Bismuth Paste. C. E. Camerer.

131. **Biers' Method of Treatment in Acute Gonorrheal Arthritis.**—When properly applied and controlled, Strine finds that Bier's treatment of joints acutely involved by gonorrheal infection produces definite beneficial results. Relief of symptoms is striking, the disease is cut short, and permanent damage to the joint is prevented. The hyperemia produced must be intense. Of course, the pulse must not be obliterated. Usually the fault lies in not sufficiently obstructing the return circulation. If the edema at any time becomes too pronounced, or signs of blocked circulation appear, remove the bandage, elevate the limb for one hour, then replace the bandage. Instruct the patient to test frequently the temperature of his hand or foot, as the case may be, and keep him under observation.

136. **The Blanket Splint.**—This improved appliance is made as follows: Depending on their thickness, two or three blankets are folded in such a way as to form a strip, the width of which corresponds to the length of the intended splint (if for fractured leg, the distance from 4 inches below the heel to 6 inches above the knee). The strip is rolled from both ends about pieces of broom handle which serve to give rigidity, the rolls meeting in the center and being of equal diameter. The apparatus is turned over, the rolls separated a little, allowing the intervening portion to sag, thus forming a kind of hammock. The splint is applied as follows: An assistant raises the limb (a leg in this case) to a considerable angle, while under it are laid transversely pieces of wide muslin bandage about four feet long. The splint is then placed on the strips, the injured member is laid on the hammock, and, depending on the diameter of the limb at the point of apposition, the rolls are separated or folded in as necessary, so that they may be everywhere firmly applied to the sides, and that the leg may everywhere rest on the hammock. While the surgeon holds the limb securely within the splint, the assistant brings the muslin strips around and ties them firmly in front, one below the heel, one below the knee, one above the ankle, and one above the knee, some cotton being inserted underneath for padding, if necessary. The strip below the heel serves to keep the foot at proper flexion and it may be supplemented by a piece of cardboard. In cases in which the blankets are likely to become soiled with discharges, a piece of rubber sheeting may be employed.

Iowa Medical Journal, Des Moines

January

- 146 The Brighter Side of Modern Surgery. I. S. Bigelow, Dubuque.
- 147 Cathartics in Acute Intestinal Obstruction. W. Jepson, Sioux City.
- 148 Diagnosis of Renal Calculus. O. J. Fay, Des Moines.
- 149 Intracranial Hemorrhage. G. G. Cottam, Rock Rapids.
- 150 Fractures of the Skull. A. M. Pond, Dubuque.
- 151 Woven Elastic Bandage in Simple Fracture of the Patella. A. B. Poore, Cedar Rapids.
- 152 Common Types of Coma. C. P. Howard, Iowa City.
- 153 An Epileptic Colony. G. H. Hill, Des Moines.

Journal of the Arkansas Medical Society, Little Rock

December

- 154 Uterine Fibromyoma; Wide Range of Complication. J. W. Smith, Hot Springs.

California State Journal of Medicine, San Francisco

January

- 155 Functional Periodicity in Women and Some of the Modifying Factors. C. D. Mosher, Palo Alto.
 156 Salvarsan. D. W. Montgomery, San Francisco.
 157 Serodiagnosis of Syphilis. L. S. Schmitt, San Francisco.
 158 Insects and Medicine. C. Wellman, Oakland.
 159 Epidemic Cerebrospinal Meningitis. F. G. Canney, San Francisco.
 160 Renal Tuberculosis. G. S. Whiteside, Portland, Ore.
 161 Cooperation of School Health Departments with Other Health Agencies. E. B. Hoag, Berkeley.
 162 A Brief Account of Ludwig Pick's Work on Chorioepithelioma. D. Hadden, Oakland.
 163 Heart Tonics. W. E. Bates, Davis.
 164 Multiple Papillomata of the Urethra. L. Gross, San Francisco.
 165 Impotentia Coeundi and Sexual Neurasthenia, and Their Treatment. A. B. Grosse, San Francisco.
 166 Filariasis Treated by the Wherry-McDill Method (Cinchonization and Roentgen Irradiation). E. v. Adelung, Oakland.
 167 Splenomegaly with Fatal Hematemesis. W. A. Sawyer, Berkeley.
 168 Subcutaneous Injuries of the Abdominal Contents. O. D. Hamlin, Oakland.
 169 Hospital Service for Railroad Construction Camps in the Pacific Northwest. W. O. Spencer, Huntington, Ore.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

January 7

- 1 Surgical Treatment of Venous Thrombosis. W. Bennett.
 2 *Some of the Rarer Occurrences in the Rheumatism of Childhood. F. J. Poynton.
 3 *Kidney Pain. E. H. Fenwick.
 4 *Prevention of Heart Disease. W. Calwell.
 5 *Treatment of Rodent Ulcer. E. G. Little.
 6 *Excision of Cancer of the Esophagus. W. A. Lane.

2. **Rheumatism of Childhood.**—Among the conditions mentioned by Poynton are rashes, erythema nodosum, venous thrombosis, tachycardia, mastitis, hematemesis and epistaxis.

3. **Kidney Pain.**—Fenwick emphasizes, on physiologic and clinical grounds, the fact that the kidney is able to feel in only two areas—the pelvis and the neighborhood of the true capsule. Occasionally patients are encountered who do not have sensation in either area, and then crippling and progressive disease of the kidney may be painless from start to finish. The commonest structural change accompanying kidney pain is a distended pelvis; the commonest cause of kidney pain is dilatation of the renal pelvis. Cases in point are cited.

4. **Prevention of Heart Disease.**—Calwell holds that prevention of heart disease embraces (1) more accurate registration of deaths, so that the huge group labeled "syncope" may be analyzed; (2) the labors of the clinical bacteriologist to teach us what is rheumatic fever and how we may prevent it; and (3) a spread of real knowledge and education, so that men may learn not to treat the heart and blood-vessels as a careless and reckless schoolboy treats his bicycle, but as a skilled engineer treats a strong yet delicately balanced piece of complicated mechanism that reacts quickly, silently, mysteriously, to every touch of the skilled hand.

5. **Treatment of Rodent Ulcer.**—Little endorses the treatment of rodent ulcer by freezing. He reports eleven cases.

6. **Excision of Cancer of Esophagus.**—The principle of the operation done by Lane is to excise the portion of the esophagus affected by cancer, together with any glands, keeping well away from the diseased area, and to replace the segment of esophagus removed by means of a strip of skin cut transversely from the neck, and retaining an attachment and a blood-supply, the continuity of the esophagus being completely restored. After an interval of sufficient length for the firm union of the skin esophagus to the portion of the normal esophagus at the lines of section, the attachment of the flap of skin by its base to the skin of the neck is divided, and any lateral aperture in the skin esophagus which may remain is closed. Except when the growth involves the extreme

upper limit of the esophagus or invades the upper aperture of the larynx, it would probably be possible to avoid performing tracheotomy. Till the edges of the skin esophagus have united to those of the esophagus, a tube for feeding purposes should be retained in position. In the case reported, the growth, which was very dense, was found to involve the upper 2 inches of the esophagus. In spite of the precautions of an extensive operation and subsequent treatment by radium, an indurated mass appeared in the neck in the vicinity of the operation and discharged itself externally, leaving a sinus. Through this aperture, a sudden profuse hemorrhage took place, resulting in the death of the patient six months after the operation. Necropsy showed that the growth had recurred in a small area in the left side of the neck, and that it had invaded the carotid artery, whose wall gave way in consequence. The area of esophagus made by skin did not differ in appearance from the adjacent portion of normal esophagus, with which it had become continuous.

Lancet, London

January 7

- 7 Report by the Education Committee Presented to the General Medical Council. H. Morris.
 8 *Ultra-Chronic Pulmonary Tuberculosis. H. B. Shaw.
 9 *Some of the Rarer Causes of Acute Abdominal Conditions. W. H. Battle.
 10 A Case of Interstitial Pregnancy; Sac Removed Unruptured by Abdominal Hysterectomy. A. H. N. Lewers.
 11 *The Cardiac Diastolic Sound and Impulse. T. Fisher.
 12 British Health Resorts for Foreign Invalids. N. Wood.
 13 *Iodin as a Disinfectant of the Skin Before Operations. W. Evans.
 14 *Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation. I. B. Yeo.
 15 Perithelioma of the Great Omentum; Excision. W. G. Nash.
 16 *Relation of Acute Phosphorus Poisoning to Acidosis. H. L. Tidy.
 17 A Case of Digitalis Heart-Block. E. E. Laslett.
 18 Technic of Intravenous Injection of Salvarsan. O. Grünbaum.
 19 *Raw Meat and Raw Meat Juice in Treatment of Tuberculosis and Wasting Diseases (Zomo-Therapy). J. Hericourt.

8. **Ultra-Chronic Pulmonary Tuberculosis.**—Of 1,532 patients who had been found to show tubercle bacilli in the sputum, and to have present signs indicative of pulmonary disease, 303 were found by Shaw to have had the disease for five or more than five years. But in this number there are included some whose tuberculosis for some years existed, so far as can be ascertained, only in some part of the body other than the lungs, e. g., they may have first of all suffered from tuberculous dactylitis, adenitis or hip disease. These 303 patients include some who have had the benefit of in-patient and sanatorium treatment. Excluding these latter and also those whose tuberculosis expressed itself first in some system other than the pulmonary one, 212 cases are left, and from this number of patients observations are presented by Shaw to show how chronic may be the course of pulmonary tuberculosis subjected to the very trifling help, so far as the direct treatment is concerned, afforded in out-patient practice. These patients have succeeded in many cases in maintaining families, and that under conditions which are the very reverse to those which would be chosen to help arrest the disease. The occupation of these patients shows that indoor employment does not necessarily preclude survival with the disease during a considerable number of years, because all but eight of the fifty-three patients followed vocations within doors. One patient was still living after thirty-four and one-half years.

9. **Rare Causes of Acute Abdominal Conditions.**—Battle discusses acute hemorrhagic pancreatitis, acute dilatation of the stomach, hemorrhage from the stomach and enterospasm.

11. **The Cardiac Diastolic Sound and Impulse.**—Although a diastolic sound is commonly present in association with temporary ill-health in which the heart probably suffers, Fisher says it is, perhaps, most marked in cases of organic disease. In those cases, however, the sound may be strangely inconstant; that is to say, it may be distinctly audible one hour and not the next. The character of the impulse and the character of a cardiographic tracing, as might be expected, change with the alteration of the sounds. In mitral stenosis the presence of a diastolic sound distinct from the presystolic murmur is frequently observed. The sound need not, however, be limited to the apex, like the true presystolic murmur, but may be heard widely over the heart.

Fisher suggests that possibly the fact that it frequently occurs when inspiration is commencing to lend its aid to diastole of the ventricles may be considered to support the view that a diastolic sound is in some way connected with active diastole. A fact which he also urges in support of such a view is the occurrence of a diastolic sound in association with hypertrophy of the heart. The presence of the sound in the large heart of Bright's disease has frequently been the subject of comment. Another variety of hypertrophy in which the sound occurs is that associated with adherent pericardium in children. Here the sound may sometimes be so prolonged as to be readily mistaken for a presystolic murmur.

13. Iodin as a Disinfectant of the Skin Before Operation.—Evans endorses the use of iodine as a disinfectant—30 parts of chloroform to 1 of iodine, or half tincture strength, 1 in 80, or 1.25 per cent. He says that it is strong enough for all ordinary cases.

14. Treatment of Pulmonary Tuberculosis by Inhalation.—Yeo reviews some of his previous papers in which he recorded his observations on this treatment. They were, in the main, favorable.

16. Acute Phosphorus Poisoning and Acidosis.—Tidy emphasizes the connection of the secondary stage of acute phosphorus poisoning with acidosis.

19. Raw Meat and Raw Meat Juice in Wasting Diseases.—The author states that it is probably no exaggeration to say that the raw meat treatment of pulmonary phthisis yields results not approached by any other means at present available. Nevertheless, the benefits of zomotherapy are by no means limited to tuberculosis. Raw meat juice is of the greatest service in the various forms of anemia and chlorosis, in typhoid, neurasthenia, rachitis, and scurvy rickets, during convalescence, after hemorrhage, in fact, whenever it is desired to reinforce the defensive apparatus of the organism and repair the ravages of disease.

Australasian Medical Gazette, Sydney

November

- 20 Extraction and After-Treatment of Senile Cataract. W. O. Maher.
- 21 Abdominal Section. A Record of 1,400 Cases. A. J. McDonnell.
- 22 Diagnosis and Surgical Treatment of Malignant Disease of the Stomach. H. C. Hinder.
- 23 Partial Gastrectomy and Colectomy for Cancer. T. Fiaschi.
- 24 Cases Simulating Extra-Uterine Pregnancy. A. Watson.
- 25 Cause, Effect, Incidence and Prevention of the Pneumokoniosis of Quartz-Miners (concluded). J. S. Purdy.
- 26 Practical Application of the Symptom-Complex in Ruptured Abdominal Hydatid Cyst. A. H. Tebbutt.
- 27 A New Generalization in Serotherapy. D. M. Paton.
- 28 Malignant Endocarditis. F. S. Hone.
- 29 Temporary Bradycardia, with Ventricular Asystole. C. T. de Crespigny.

Clinical Journal, London

December 28

- 30 A Paralytic Stroke. S. Taylor.
- 31 Stricture of the Urethra and Its Treatment. C. A. R. Nitch.

January 4

- 32 Adams-Stokes Disease. F. Taylor.
- 33 *Septicemia Hemorrhagica. W. G. Spencer.
- 34 *Gastric and Intestinal Hemorrhages After Abdominal Operations. J. Hutchinson.

33. Septicemia Hemorrhagica.—Several cases of acute hemorrhagic cellulitis are cited by Spencer. They were (1) hemorrhagic cellulitis of the arm; (2) acute hemorrhagic cellulitis of the left buttock and thigh; (3) hemorrhagic cellulitis of the thigh; (4) hemorrhagic cellulitis round the knee; (5) acute subcutaneous hemorrhage following viper bite. A case of hemorrhagic enteritis is interesting. A young woman, aged 24, had diarrhea and, at first, occasional hemorrhages from the bowel, with vomiting and foul stools. Then she began to pass large quantities of blood by the stools, and lapsed into a state of acute anemia, with a pulse rate of 120, but at no time did the temperature vary much from normal. There was an absence of all signs of typhoid, and tuberculous enteritis. On the day preceding death there was noted for the first time a tenderness in the right iliac fossa, followed by clear signs of commencing infective peritonitis. The general condition of the patient was different from the common type

of acute gangrenous appendicitis. The pulse was very rapid and weak, 130 or 140 a minute, but the temperature continued normal. The abdomen was a little tumid, but nowhere persistent or tender, except over the appendix. The appendix was removed as quickly as possible. No gangrene or pus, or sign of typhoid or tubercle, was found; there was congestion of the peritoneum around, and blood-stained fluid was sponged out of Douglas' pouch. The patient failed to react to saline infusion; she died four and a half hours after the operation; there was no post-mortem. The appendix removed was distended to the size of the end joint of the little finger by blood and mucus, but there was no evidence in the interior of gangrene or pus. The microscopic examination showed acute hemorrhagic inflammation of the mucous and submucous coats, in which were numerous cocci and rods. Several cases of renal hemorrhage are also cited.

34. Gastric and Intestinal Hemorrhages.—It is held by Hutchinson that hemorrhage into stomach and intestine due to small ulcers or erosions may develop after an operation, usually abdominal, has been performed. In 80 per cent. of the cases a severe septic infection with secondary anemia is present before the operation, the latter in itself having no direct influence on the hemorrhage. Similar lesions of the stomach or duodenum are found in certain cases of disease in which no operation has been performed; 80 per cent. of these cases are septic in nature. It is probable, Hutchinson believes, that a profound alteration in the blood, due in most cases to toxins of septic origin, is the chief factor in the production of these erosions. Such hemorrhage is of very grave significance, though a few patients recover from it. Operative interference does not appear to hold out much prospect of success in these cases, but further experience is needed on this point.

Indian Medical Gazette, Calcutta

December

- 35 Treatment of Syphilis at Aix-La-Chapelle. V. B. Green-Armytage.
- 36 Gynecologic Laparotomy, General and Statistical Observations Based on 150 Consecutive Operations, Performed in the Campbell Hospital, Calcutta. K. Das.
- 37 *Influence of Dysentery on Incidence and Mortality of Tuberculosis of the Lungs. W. Gillitt.
- 38 *Treatment of Amebic Abscess of the Liver by Aspiration and Injection of Quinin. L. Rogers.
- 39 Cholera Treated by Rogers' Method of Infusion of Hypertonic Saline Solution. T. C. Rutherford.
- 40 Suction Treatment of Abscesses. W. E. McKechnie.
- 41 Sanitation in the Hills. L. Reynolds.
- 42 Subcutaneous Injection of Quinin in Malaria. H. Stott.

37. Dysentery and Tuberculosis.—In order to analyze the relationship between dysentery and tuberculosis, Gillitt divides the cases into the following types: (1) Tuberculosis of the lungs terminating in an attack of acute dysentery. (2) Chronic dysentery and tuberculosis occurring at the same time both of long standing and with no evidence to show which began first. (3) Chronic or recurrent dysentery followed by tuberculosis of the lungs. Among fifty-three cases of tuberculosis, thirteen (24.5 per cent.) showed ulceration of the colon and rectum. The ulcers occurred chiefly in the large intestine, although occasionally the lower part of the ileum was also involved. In one case, chronic dysentery and tuberculosis of the lung occurred at the same time with no evidence to show which was the primary lesion. Seven patients appeared to have developed the disease after suffering for some time from chronic dysentery. In only two of these seven cases was there actual ulceration of the large intestine at the time of death, described as "chronic." In two other cases there were scars of dysenteric ulcers, while in the other four the fact that tuberculosis followed chronic dysentery, and was presumably dependent on it, was expressly stated. In another case, the patient was in the hospital for three months suffering from chronic dysentery, and at the time of death there were tuberculous cavities at both apices. The total number of cases of tuberculosis investigated was seventy-one, and of these eleven patients (15.5 per cent.) had a well marked history of recent chronic dysentery. It is probable, says Gillitt, that dysentery was a predisposing factor in a larger proportion of the fatal cases, because the fact of there having been repeated attacks of dysentery would

not be noted in a necropsy report on a case of tuberculosis, unless the connection was very strong or unless one were specially looking out for such cases. The number of cases, too, in which tuberculosis is developed before admission to jail and in which a reliable history cannot be obtained is considerable.

38. Also published in the *Philippine Journal of Science*, July, 1910; abstracted in *THE JOURNAL*, Nov. 5, 1910, p. 1684.

Medical Press and Circular, London

December 28

- 43 Differential Diagnosis of Reno-Ureteral Affections. F. Cathelin.
- 44 The Change of Life in Man. B. Hollander.
- 45 Intracranial Neoplasms. Diagnosis and Indications for Treatment. T. A. Williams.

January 4

- 46 Roentgen Ray Diagnosis of Urinary Calculi. M. J. Hayes.
- 47 Points in Urine Analysis. J. B. Smith.
- 48 Partial Resection of Stomach for Carcinoma. R. A. Stoncy.

Glasgow Medical Journal

January

- 49 *The Unfit. W. J. H. Sinclair.
- 50 Advances in Hematology. W. K. Hunter.
- 51 *Graduated Labor at Bellefield Sanatorium. J. W. Allan.

49. **The Unfit.**—The term unfit is used by Sinclair in a general way, and is intended to include the always tired, the loafer and unemployable, the feeble-minded, the epileptic, the criminal and the alcoholic. He does not deal with the physically unfit, or the certifiably insane. He shows that there is a large and increasing number of unfit people. The influence of those people while at large is hurtful to the community, leading to the production of undesirable stock and to large public expense. Legislation for the care and control of the unfit in their own interest and in the interest of the race is urgently called for. Sinclair suggests that the physically capable and non-criminal among the unfit would probably be suitably dealt with in farm and labor colonies. Notification and registration is probably necessary as a preliminary to the proper care and control of epileptics. Much attention should be bestowed on the health and training of epileptic children, when possible by parents, otherwise by the state. The marriage of an epileptic should be prohibited by law. Epileptics improperly cared for by their relatives should be put under care and treatment in epileptic colonies. The shutting up for the natural term of their lives of incorrigible and irresponsible inebriates is highly desirable in their own interests and in the interests of the community. A simple and easy method of finding the feeble-minded, such as notification, Sinclair regards as probably practicable. Legislation to facilitate certification and to provide for the continued confinement of the feeble-minded is urgently required.

51. **Graduated Labor at Bellefield Sanatorium.**—Experience at Bellefield Sanatorium, Lanark, has convinced Allan of the value of moderate and graduated labor in suitable cases. It improves the appetite, tones the muscles, and improves the breathing. In the case of workingmen, it renders them more fit to return to their vocations. Four months of good feeding and absolute idleness in a sanatorium is conducive to the formation of fat and lazy habits. Besides the physical benefits, there is the psychical benefit derived from work. It puts the patients in a better frame of mind when they find that they are able to do something, and it raises their spirits, for they know when they are put on work the medical officer is satisfied with their condition. But at the same time, Allan is distinctly of the opinion that the labor should be moderate in character, and that it should be voluntary on the part of the patient. No patient should be urged to work if he expresses a decided disinclination to do so. A contrary line of conduct may be attended with very awkward or very serious consequences.

Bulletin de l'Académie de Médecine, Paris

December 20, LXXIV, No. 41, pp. 475-504

- 52 *Chronic Carbon Monoxid Intoxication. (Intoxication oxygénée lente; ses symptômes frustes.) J. Courmont, Morel and G. Mouriquand.
 - 53 Peruvian Verruga in Madagascar. M. Letulle.
- January 3, LXXV, No. 1, pp. 1-28
- 54 Osteomalacia of Tuberculous Origin. (Tuberculose inflammatoire du squelette.) A. Poncet and R. Leriche.

52. **Slow Carbon-Monoxid Poisoning.**—Courmont, Morel and Mouriquand report the case-histories of thirty-five persons who for years during their working hours had to breathe air containing from 1 per 10,000 to 1,000 carbon monoxid. In the course of years they all developed nervous, digestive and general symptoms varying in intensity but most severe in the workrooms with the highest proportion of the impurity in the air. The syndrome was alike in each case, commencing with headache and occasional dizziness, then lassitude, loss of appetite, insomnia varied with nightmares followed, and neuralgias, intense or slight, transient or fixed, unilateral or bilateral, intercostal, subcostal, abdominal and especially in the lumbar and sacral region. The digestive disturbances were those characteristic of hyperchlorhydria. Twelve of the patients had intermittent albuminuria, three transient glycosuria and all grew thin and pale, some being so sallow as to suggest cancer. Some epileptics were among the patients and their previously rare seizures became so frequent that institutional measures were soon necessary. All the symptoms reached their acme in winter, when the defective furnaces and heaters were at work, but became attenuated during the spring and disappeared entirely during the summer vacation at first. In later years they became more continuous with lesser remissions. In three of the youngest patients the syndrome was diagnosed as pretuberculosis and they were sent out of town, returning much improved. In another case incipient tabes was diagnosed on account of the asthenia, and psychic and neuralgic disturbances. A few other patients presented signs of congestion in the bladder and prostate. Gautier also reported the case of a physician who paid no attention to a little gas escaping in his office for a few weeks, until he developed a condition of extreme weakness, neurasthenia, and "the blues" requiring a three-months vacation to regain his normal poise. Gautier himself had attacks of faintness at night for more than a month after exposure to carbon monoxid for a short time during an operation in the open air. The syncope was so severe each time that he felt he was dying, and his weakness was extreme. Carbon-monoxid poisoning may prove fatal after a long interval, as in Bourdon's case in which a sudden fatal syncope followed several weeks after the acute monoxid poisoning from which the man had apparently recovered. The speakers all emphasized the insidious danger from slightly defective hot-air radiators and gas jets, and the emanations from gas ranges, etc.

Obstétrique, Paris

December, N. S. III, No. 12, pp. 1001-1080

- 55 Hematology of Menstruation. (Les pigments utérins.) II. Kciffer.
- 56 Metabolism During Pregnancy. Hoffström.
- 57 *Non-Operative Treatment of Uterine Cancer. L. Mangiagalli.

57. **Non-Operative Treatment of Cancer of the Uterus.**—Mangiagalli discusses the experiences to date with drugs, ferments, vaccines and physical measures in treatment of cancer. He thinks that the meiotagmin reaction may prove a useful guide in estimating the effect of non-operative treatment and keeping control of recurrences. He is having this test applied in all cases of uterine cancer in his service before and after operation, and is collecting the data for comparison. Although he regards the knife as still the most certain means at our disposal, yet he thinks that the clinic can regard the future with more hope as already we possess means which in certain cases may arrest the progress of the cancer and permit radical operative measures later.

Presse Médicale, Paris

December 31, XVIII, No. 105, pp. 985-992

- 58 *Emergency Psychiatry. (La psychiatrie d'urgence.) E. Dupré.

58. **Emergency Psychiatry.**—Dupré is in charge of the detention hospital connected with the police department at Paris, and this is his opening address in the special course of lectures on mental disease given at this institution. Drink, he remarks, is the great purveyor for it—"drink, the international scourge but essentially the national scourge in France, whose ravages are constantly increasing." Especially frequent is

the acute mania liable to be induced in the predisposed by an ordinary drinking bout. He reviews the various features which distinguish the rapidly curable cases of mental trouble from those requiring institutional treatment. In the former case the insanity is secondary to infections, intoxications, physical or moral shocks. The resulting mental disturbances are usually of a confusional nature, comparatively transient, subordinate to the cause determining them and amenable to medical treatment outside of an insane asylum. Unfortunately, he adds, existing hospitals are seldom equipped to isolate and care for these somato-psychoses, as he calls them. On account of the prejudice against asylums and the stigma cast on any one who has been confined in an asylum, it is especially incumbent on physicians to perfect themselves in emergency psychiatry and learn to distinguish the patients who can be safely sent to a hospital, a hydrotherapeutic establishment or treated at home.

Correspondenz-Blatt für Schweizer Aerzte, Basel

December 10, XL, No. 35, pp. 1177-1208

59 *Camphorated Oil in Prophylaxis of Postoperative Peritonitis. K. Kolb.

December 20, No. 36, pp. 1209-1256

60 *Medical Borderland Experiences. (Erfahrungen der inneren Klinik auf einigen medizinischen Grenzgebieten.) D. Gerhardt.

61 *Epidemic Poliomyelitis in Switzerland. E. Hagenbach.

62 *Anatomic Bases of Mental Diseases. (Gehirn und Psychose.) E. Fankhauser. Commenced in No. 35.

59. **Prophylaxis of Postoperative Peritonitis.**—Kolb pours 10 per cent. camphorated oil into the abdominal cavity up to an amount of 50 c.c. during and just before concluding the operation to ward off threatening peritonitis. In fifty-three laparotomies for very serious conditions, nine of the patients died but only one from peritonitis. The others succumbed to tuberculosis, air embolism or pneumonia. The oil did not prevent the development of abscesses in the soft parts but there were no signs of peritonitis in the abscess cases. He used the oil also in twenty-six other cases as a precautionary measure but does not include them in his figures as peritonitis would scarcely have developed in any event.

60. **Borderland Experiences.**—Among the cases reported by Gerhardt are seventy-four of gastric cancer. An operation was advised in thirty-one of the cases but was refused in four. One of the twenty-seven patients operated on was permanently cured thereby. In eight dubious cases the stomach was found free from any signs of a tumor, but the exploratory operation did no harm in any instance. In eighteen of the sixty-six cancer cases the first disturbances had been noted less than six weeks before, and in twelve cases the growth was already inoperable; two other patients refused an operation and in two other cases the laparotomy showed inoperable conditions. In nearly half of all the cases the condition was too far advanced for a radical operation although the cancer had caused no symptoms attracting attention until within less than three months. These experiences confirm the advisability of an exploratory laparotomy as early as possible when previously healthy elderly people develop gastric disturbance more or less rapidly. In seventeen recent dubious cases ten of the patients were examined by an exploratory laparotomy and cancer was found in about half and excluded in the others. In seven cases in which the operation showed the stomach to be free from cancer, there was no free hydrochloric acid or only traces in five of the patients, while fourteen of the cancer patients had normal proportions of hydrochloric acid. In two other cases without free hydrochloric acid the patients improved so much on an appropriate diet that they increased over seven pounds in weight in three or four weeks and the presumptive diagnosis of cancer was abandoned. The patients returned, however, four or five months later with inoperable carcinoma. These cases warn that cancer patients do not necessarily always lose in weight.

61. **Epidemic Poliomyelitis in Switzerland.**—Hagenbach has noticed that the cases now reported are mostly at points where one or more sporadic cases of acute poliomyelitis have been observed in previous years. In the last fifteen years he has had in his charge seventy-seven children with acute poliomyelitis, but never more than four in one year until 1900,

when the number began to increase, and in the first eight months of 1910 he had thirteen cases. The type, too, seems to have changed; in the sporadic cases he never observed such pains in the legs as now, requiring sedatives, while the symptoms now deceptively resemble those of cerebrospinal meningitis. He has also noticed that cases of the latter are more numerous at points where poliomyelitis is prevalent. In many of his cases of the latter the paralysis came on gradually instead of with the sudden onset which has been described as characteristic. He thinks there can be no doubt that the disease is epidemic in Switzerland in three districts at least.

Deutsche medizinische Wochenschrift, Berlin

December 29, XXXVI, No. 52, pp. 2447-2448

63 *Ventral Hernia. (Darmwandbruch.) B. Riedel.

64 Vital Staining of Red Corpuseles. (Ueber die vitalfärbbare Granularsubstanz der roten Blutkörperchen, ihre Natur und Beziehungen zu ihrer sog. basophilen Punktierung.) R. Hertz.

65 *Action of Transfused Blood. (Wirkung intravaskulärer Injektionen frischen, defibrinierten Blutes und ihre Beziehungen zur Frage der Transfusion.) J. Moldovan.

66 Opsonic Technic. (Opsoninbestimmung.) H. Reiter.

67 Simple Medico-Mechanical Apparatus for the General Practitioner. A. Heermann.

68 *Technic for and Action of Salvarsan. P. Ehrlich.

63. **Ventral Hernia.**—Riedel is convinced that hernia into the abdominal wall occurs much more frequently than is generally supposed. It is difficult to diagnose when the rupture is at an unusual point but serious trouble is liable to follow unless the anomaly is corrected at once by an operation. Attempts at forcible reduction are entirely contraindicated. The rupture into the strata of the abdominal wall may involve only the outer side wall of the intestine or both walls and even some of its mesentery. In his experience at Jena there were sixty-three ruptures of this kind among the 550 cases of incarcerated hernia since 1883, that is, 11.5 per cent. of the total hernia material. The slightest sign of a tumor below or above Poupart's ligament should suggest hernia into the abdominal wall if accompanied by symptoms on the part of the intestines. In two cases described, the rupture was not recognized and the patients succumbed to gangrene of the incarcerated wisp of the intestine. Riedel insists that a patient with abdominal trouble should not be examined in bed but must be placed on a table with only a single garment, for the examination. This is the only means to detect a minute hernia in the abdominal wall near the femoral or inguinal canal.

65. **Transfusion of Blood.**—Moldovan found with animals that intravenous injection of fresh defibrinated blood has a toxic and possibly a fatal action on account of the coagulation of the blood of the recipient which it induces. This coagulating property subsides and disappears by the end of about half an hour. Waiting until after this period obviated all danger from this cause in his experiments. He warns therefore, that transfusion of defibrinated homologous blood within half an hour after it has been drawn must be regarded as a dangerous procedure judging from the results on animals.

68. **Salvarsan.**—Ehrlich discusses the technic and various mishaps that have been reported following the use of salvarsan. Only one of the five deaths he mentions does he ascribe to the action of the salvarsan injected. He prefers the intravenous technic, which he considers harmless when correctly done; with skill and cleanliness, he says, even the general practitioner can use it. He reiterates that salvarsan is contraindicated in all cases of extensive disease of the central nervous system and with failing compensation in heart and vascular disease. The greatest attention should be paid to recent syphilis not older than from two to eight months. The salvarsan should be given energetically and the patient kept under continuous careful supervision, in order to combat the army of spirochetes with success. If this cannot be done with energy and under careful control, he says, it is better not to give the salvarsan. In the tertiary stage of the disease, when the spirochetes are not so numerous and local action is not so essential, such intensity of the treatment and strict control of the patients are not imperative. He adds that the curative action of salvarsan has been established, not only in syphilis but in tertian malaria, sleeping sickness, small-pox, spirillosis in animals, kala-azar, etc.

Deutsche Zeitschrift für Chirurgie, Leipsic

November, CVII, Nos. 4-6, pp. 297-620

- 69 Diagnosis and Treatment of Fracture of Bones in Hand. J. Fessler.
- 70 *Operative Treatment of Carcinoma of the Cardia. H. H. Jane-way and N. W. Green (New York).
- 71 Ossifying Myositis After Trauma, Fractures and Arthro-pathies. P. Ewald.
- 72 *Changes in Blood Under Influence of the Thyroid and of Thyroid Treatment. (Blutveränderungen unter dem Ein-fluss der Schilddrüse und Schilddrüsensubstanz.) M. Turin.
- 73 *Spinal Anesthesia and Blood-Pressure. (Lumbalanästhesie und Blutdruck mit besonderer Berücksichtigung des Zusatzes von Nebeniervenpräparaten zum Anästhetikum.) M. zur Verth.
- 74 Improved Automatic Closure of Tips of Forceps, etc. (Auto-matische und graduelle Festklemmung der Spitzen bei hämostatischen Zangen, Histotritoren, Darmkompressoren und-Okklusoren.) A. Marro.
- 75 Hernia of Stomach into Omentum. (Hernia ventriculi epiploica und ihre Mechanik.) M. v. Arx.
- 76 *Sarcoma Under Nail of Toe. (Zur Kasuistik der subungualen Zehensarkome.) G. G. Wurmbrand.
- 77 *Prevention and Treatment of Fat Embolism. E. Fritzsche.
- 78 *Laryngocele. (Kehlsackbildung beim Menschen.) R. v. Hippel.
- 79 Epinephrin-Anemia for Operations on Skull and Spine. H. Braun.
- 80 Resection of the Carpus. L. Heidenhain.
- 81 *Operative Treatment of Typhoid Bacillus-Carriers. A. Fromme.
- 82 Invagination of the Intestine in Ileocecal Region. S. Solieri.
- 83 Retrograde Incarceration. O. Klauber.

70. This article appeared in *Annals of Surgery*, June, 1910, and was abstracted in *THE JOURNAL*, July 30, 1910, page 435.

72. **Thyroid Functioning and the Blood.**—This communication issues from the clinic at Berne in charge of Kocher; it reports research in this line which seems to show that the changes in the blood with exophthalmic goiter are the result of the abnormally large amounts of thyroid secretion which are produced. The myeloid system is not influenced but the lymphoid system reacts positively to the action of the hyper-functioning of the thyroid on the blood-producing organs. The conditions in normal persons, in patients with exophthalmic goiter and in these or others before or during thyroid treatment are compared and ten pages are devoted to tabulation of the details. Ordinary colloid struma does not seem to affect the composition of the blood, but thyroid treatment brings about a condition similar to the characteristic blood-picture of exophthalmic goiter, namely, pronounced lymphocytosis and leukopenia, which is unquestionably due to the reaction of the blood-producing organs to the excessive thyroid secretion.

73. **Technic for Spinal Anesthesia.**—In this report from Bier's clinic at Berlin, zur Verth emphasizes the necessity for restricting the analgesia to the point where it is needed. When this is done, operations up to the level of the crest of the ilium can be done without any drop in blood-pressure and can thus be regarded as safe. No by-effects are observed, he states, when the analgesia is restricted to this region. In passing judgment on lumbar anesthesia, he says that we must discriminate between the effects of the analgesia in this region and the effects of the anesthetic forced up higher than is necessary. The by-effects increase in number and severity the higher the analgesia is induced. The aim should be to find an anesthetic or combination which will leave the heart-pressure uninfluenced even with high analgesia. Until this ideal is realized, it is wiser to keep the blood-pressure at its normal figure, with drugs to act on the heart, when high spinal anesthesia is attempted. Bier has been having the blood-pressure studied during the last six years and zur Verth gives his experiences with forty-four patients anesthetized by the spinal technic with or without epinephrin. A drop in blood-pressure of more than 25 per cent. was observed in eighteen cases, but the operation had been high in the rectum or on the kidney or bladder in all of these, and thus above the level of the absolutely "safe" region. The addition of a suprarenal preparation did not seem to have any influence in preventing the drop in blood-pressure, while it reduced the extent of the analgesia but seemed to prolong it. A few whiffs of ether augment the force of the heart without acting on the vessels. Epinephrin, on the other hand, acts on the tonus of the vessels; this raises the blood-pressure if the heart is working as usual, but the epinephrin acts also on the heart, reducing its energy. As the blood-vessels are contracted at the same time, the result is naturally more in the line of a collapse of the whole cardiovascular system than in the line of stim-

ulation. That the collapse does not occur as a rule is due to the special counteracting influence of some component of the suprarenal preparation acting directly on the heart functioning.

76. **Sarcoma on the Toe.**—Wurmbrand reviews the cases on record in which an ingrowing nail or nevus has been the seat of cancerous growth and reports three cases from Hochenegg's clinic at Vienna. The patients were two men of 47 and 50 and a woman of 59, with sarcoma in the left great toe; there was a history of slight trauma in one case. In a fourth case the right great toe had been enucleated for melanosis ten years before inoperable metastasis was discovered in the right calf. The affection was of slow development, several years elapsing before the pains became severe and secreting granulations developed under the nail. In all the cases months had been wasted with ordinary medical measures, inducing temporary improvement, the trouble flaring up again after a few months.

77. **Fat Embolism.**—Fritzsche has been studying the mechanism of fat embolism on rabbits and dogs, and states that cutting injuries of bones are liable to lead to fat embolism, the veins in the bones taking up the particles of fat. He found, however, that mere concussion of the bone was sufficient in some cases to induce fat embolism by the lymphatic route, the lymphatics taking up the fat particles and thus passing them along into the circulation. In these cases of lymphatic fat embolism he found that prompt drainage of the thoracic duct warded off danger when the operation was done at the first signs of fat embolism. The procedure is simple and harmless, he says, but its field of application is necessarily limited.

78. **Laryngocele.**—Hippel devotes nearly a hundred pages to this rare anomaly, his attention having been called to it by a case personally observed.

81. **Surgical Treatment of Typhoid Bacillus-Carriers.**—Fromme reviews the experiences that have been published in this line to date and reports cases in which he operated to put an end to the chronic elimination of typhoid bacilli, accomplishing his purpose in each case by cholecystectomy. The patients were four women between 38 and 46 years old, and the biliary passages were found to harbor typhoid bacilli as well as the gall-bladder. After the removal of the latter the typhoid bacilli were evidently exterminated by other saprophytic bacteria. He urges surgeons in operating on the biliary apparatus to search for possible typhoid bacilli, as undoubtedly the number of unsuspected bacillus-carriers is large. Fromme believes that many healthy bacillus-carriers might consent to operative treatment if convinced of the peril to their environment and to themselves.

Medizinische Klinik, Berlin

December 25, VI, No. 52, pp. 2045-2064 and Supplement

- 84 *Gonorrheal Rheumatism. (Tripperrheumatismus.) G. Hahn.
- 85 *Early Signs of Epilepsy in Children. (Kinderfehler in Schule und Haus als Frühzeichen der konstitutionellen Epilepsie.) H. Stadelmann.
- 86 Tuberculosis as Indication for Arresting Pregnancy. (Zur künstlichen Unterbrechung der Schwangerschaft bei Tuberkulose.) H. Hellendall.
- 87 *Differential Diagnosis Between Deafmutism and Mutism from Deafness. (Taubstummheit und Hörstummheit.) B. Fröschels.
- 88 Percutaneous Technic for Salvarsan. H. Leyden.
- 89 *The Development of the Rachitis Problem in the Last Decade. F. Zybelle.

84. **Gonorrheal Rheumatism.**—Hahn remarks that the lack of benefit from salicylic medication is one of the chief means of distinguishing the gonorrheal form of joint affections. Treatment generally has to be merely symptomatic but vaccine therapy may prove to have a causal action; the experiences to date seem to be promising. The gonococcus seems to have a special predilection for the periosteum and to stimulate an exuberant granulation. Especially threatening are the cases in which the swollen joint looks angry and pains and fever announce the onset of suppuration. Pyemia and death often close the scene unless operative measures are applied in time; even in the more favorable cases, the joint is liable to be left stiff. Pericardial and pleural complications are fortunately rare, as also phlebitis; endocarditis is more common. The prognosis is grave in gonorrheal endocarditis. Complications in the conjunctiva and iritic processes have

also been observed in a few cases. Hahn advocates treatment of coexisting gonorrheal urethritis as under other conditions. Rest of the joint and local application of heat for several hours a day are the main reliance.

85. Early Signs of Epilepsy in Children.—Stadelmann refers in particular to the naughtiness, the moodiness and brutality shown by certain children who develop epilepsy later; he regards this abnormal behavior as an early manifestation of epilepsy. Another sign is attacks of excitement at times, the child speaking hurriedly, the syllables tripping over each other, sometimes actual stammering; or the defect may manifest itself in apathy. Disturbances in coordination in children, an impulse to keep the arms, hands or legs in motion, are defects observed in those inclined to epilepsy. Parents and teachers notice these defects before the physician sees the child, and they should be warned to be on the lookout for them as signs of a tendency to possible epilepsy. The earlier medical care can be given the child the better the outcome, the prognosis being much more favorable before the seizures are once installed. If the previous history of the child is taken into account, whether it had convulsions or diarrhea in infancy, etc., the early diagnosis may be facilitated. In the parents or brothers and sisters signs of epilepsy may also be detected, such as gastro-intestinal disturbances without preceding errors in diet, recurring manifestations suggesting geographic tongue, and also the tendency to brutality and cynicism, lack of affection and selfishness. Epilepsy must be regarded as a constitutional disease which induces a train of various symptoms; the seizure is merely the most striking and violent symptom in the train. Suspicion of epilepsy compels institutional treatment, he insists; there is no chance for a successful outcome unless the child can be kept under constant medical care and pedagogic training. Many children thus predisposed to epilepsy never develop seizures and seem to live an apparently normal life. But the tendency to epilepsy persists and in later years the individual is liable to come into conflict with the law.

87. Differentiation of Mutism.—Fröschels has found that deaf-mutes do not seem to feel anything tickling the inside of their outer ear while children with a normal hearing apparatus feel the tickling at this point with exceptional intensity. He introduces a bougie into the ear and twists it to and fro and found that this was borne without a trace of shrinking by ninety-four children in a deaf-mute asylum although all were extremely ticklish elsewhere. On the other hand, he found that fifty normal children tested felt the tickling with special intensity; most of them otherwise were not especially ticklish. This test is proving useful, he states, for differentiating actual deaf-mutism from mutism due to other causes, with or without hearing. Treatment based on the findings has given good results in twelve children, idiots and others, supposed to be deaf-mutes as they did not speak but who proved able to speak when trained.

89. Rachitis.—Zybell concludes his review of what has been learned and accomplished in respect to rachitis since 1900, with the statement that organotherapy has not displayed any specific action on rachitis, the results being more a general stimulating effect, due mostly to the hygienic measures instituted along with it. Phosphorus is the main reliance, and recent research has supplied the scientific basis for the empirical observation of the benefit from the action of phosphorus on the mineral metabolism, especially on prevention of waste of lime. It displays the greatest power in this line paired with cod-liver oil; neither alone and none of the derivatives of phosphorus has the same effect. His formula is 0.01 c.c. yellow phosphorus with cod-liver oil to 100 c.c.; the dose is 5 c.c. two or three times a day. The compound should be made up fresh every week or ten days.

Münchener medizinische Wochenschrift

December 20, LVII, No. 51, pp. 2673-2756

- 90 *Action of Salvarsan on the Eye. (Experimentelle und klinische Untersuchungen mit Salvarsan unter bes. Berücksichtigung der Wirkung am Auge.) J. Igersheimer.
91 By-Effects of Salvarsan. K. Bohac and P. Sobotka.
92 Regeneration of Bone After Injection of Salvarsan. Therstapfen.
93 Experimental Research on Epidemic Poliomyelitis. P. H. Römer and K. Joseph

- 94 Pupil Disturbances in Dementia Praecox. O. Bumke.
95 *Mechanical Measures for Arresting Hemorrhage from Stomach or Intestines. (Zur Stillung gefäßrichen Magen- und Darmblutungen.) G. Kelling.
96 Enlarged Lymph Glands Not Always Sign of Tuberculosis. (Verwertbarkeit der subkutanen Thoraxlymphdrüsen für die Diagnose der Lungen Tuberkulose.) W. Schulze.
97 Action and Dosage of Epinephrin in Subcutaneous Injection. Kirchhelm.
98 Hyoseyamus Poisoning in 1649. (Geschichtlicher Beitrag zur Vergiftung mit Blisenkraut.) H. Schulz.
99 Nature and Importance of Anaphylaxis. E. Friedberger. Commenced in No. 50.

December 27, No. 52, pp. 2757-2780

- 100 *Serotherapy of Pregnancy Disturbances. (Versuch, Schwangerschaftstoxikosen durch Einspritzungen von Schwangerschaftsserum zu heilen.) A. Mayer and P. Lüscher.
101 *Action of External Application of Cold on Temperature of the Stomach. (Absinken der Kern—speziell der Magen—temperatur bei äusserlicher Kälteapplikation.) M. Riehl.
102 *Dysentery Epidemic in a Hospital. (Ueber eine Flexnerdysenterieepidemie in einem Spital, bei welcher die Uebertragung der Keime von der Spitalküche mittels der Essgeschirre erfolgte.) B. Bussow.
103 Technique and Contra-Indications for Administration of Salvarsan. W. Gennerich.
104 Salvarsan in Syphilis. C. Ravasini.
105 *Massage of the Nerves at Their Emerging Points. (Nervenzpunkturen und Nervenpunktmassage, nach Cornelius.) A. Schüle.
106 *Local Action of Salvarsan at Point of Injection. K. Martins. Commenced in No. 51.

90. Action of Salvarsan on the Eye.—Igersheimer asserts that salvarsan not only has no injurious action on the eye, but in many cases in his experience had a curative effect on existing syphilitic eye affections. His experiments on animals show, he asserts, that the injurious action of atoxyl on the optic nerve is the result of phenylarsenate, and that cats and dogs are peculiarly sensitive to it. Salvarsan does not seem to contain phenylarsenate derivatives and no symptoms suggesting toxic action from their presence could be detected in any of the animals tested. In the animals an accumulation of the arsenic was found in the eyeball, in one up to forty-eight hours after the last injection, but there was no Marchi reaction in the optic nerve. This demonstrates, he declares, that an organic arsenic is not split off from salvarsan, but at the same time it suggests the necessity for caution in chronic administration of the drug. There was no tendency to hemorrhage in the kidneys in the animals treated with salvarsan; this is the specific sign of atoxyl poisoning.

95. Mechanical Measures for Arrest of Gastro-Intestinal Hemorrhages.—Kelling was able to palpate a knobby growth in the stomach in a woman of 40 with hematemesis. It was more than probable that the bleeding issued from this ulcer and he applied mechanical compression to the spot, first with his hand and then under a tourniquet. He kept up this compression for eight hours, giving a little morphin besides. There was no recurrence of the hemorrhage. He improvises a tourniquet for such cases by laying a small tray on a pad and fastening the tray and pad with one or two towels drawn tight and fastened behind. This compression can be applied even when nothing pathologic can be palpated. The pylorus can be easily reached in this way, but the cardia requires different measures, and he suggests for this passing a tube through the nose into the stomach. A rubber cot fastened on the lower end of the tube can then be inflated and drawn back to plug the opening at the cardia. With the filling of the cavity between the cardia and the pylorus, he thinks that the hemorrhage would certainly stop. This measure might be recommended when the patient has to be taken to a hospital before operative treatment is possible. He thinks this procedure would amply suffice to arrest hemorrhage from venous congestion in this region, such as accompanies cirrhosis of the liver. These hemorrhages left to themselves are unusually dangerous; they are easily recognized by the copious vomiting of the venous blood with the liver large and hard. He seeks to promote coagulation of the blood by giving the patients pulverized chalk stirred into milk, supplemented by an intravenous injection of 5 c.c. of a 5 per cent. salt solution. He refrains from subcutaneous injection of physiologic salt solution so long as the hemorrhage persists, and combats the thirst with narcotics. Later water can be given by the rectum in small amounts, care being exercised not to increase the blood-pressure thereby. He makes a rule of giving small nutrient enemata of raw milk with nothing by the mouth for two or three days. Epinephrin by the mouth does little good

as its action is purely local and the spurting blood washes it away from the spot. Still another measure that might be applied to gastric or intestinal hemorrhage is inflation of the lower bowel by a tube introduced far up in the rectum; with a double bulb it is possible to inflate the transverse colon and thus exert pressure on the stomach and duodenum. Compression from this procedure is particularly effectual during pregnancy, the colon then lying in front of the stomach. The dilated colon prevents further entrance of blood into the stomach and its escape into the duodenum. In the three cases in which he has applied this technic the hemorrhage was arrested at once; in all the cases the stomach was above the umbilicus. In three other cases he injected oxygen into the abdomen through a trocar and the hemorrhage was arrested, as also the recurring hemorrhages in a cancer case. The necropsy findings in several cases confirm the benefit induced by compression by this means.

100. Serotherapy of Pregnancy Disturbances.—Mayer and Linser report the case of a woman with recurring pregnancy herpes; the entire body was covered with the eruption, and the bed linen was covered with pus. The pain was severe and the urine showed tube-casts and albumin. After failure of all other measures, at the end of two weeks, 10 c.c. of serum from another woman were injected to test the tolerance for normal human serum; three days later, 10 c.c. from a healthy pregnant woman at the eighth month, and three days later 20 c.c. from another healthy pregnant woman. The injections were made into a vein; the temperature began to subside after the second injection and became normal after the third. The influence on the eruption was equally striking; the pustules drying up and no new ones forming. The pregnancy at the fifth month was not disturbed. Five weeks later the same eruption recurred, but less pronounced and it subsided at once after injection of 20 c.c. of serum from a pregnant woman. The child was born normally at term. The tracing given shows the change for the better after the first injection of the serum from another pregnant woman. The results in this case, he declares, justify further experiences in this line of serotherapy of the dermatoses of pregnancy and possibly of all the toxemias of pregnancy, eclampsia, pernicious vomiting, albuminuria, etc. This harmless and simple method may cure or at least improve, and he urges others with more extensive material to give it a thorough trial.

101. Reduction of Internal Temperature After External Application of Cold.—Riehl inserted a narrow thermometer into the lower end of a stomach tube, only the end projecting. By this means he was able to determine the temperature in the interior of the stomach before and after application of cold outside. He found that the temperature could be thus reduced by 1.8 degrees C. in the stomach and 1.1 degrees C. in the rectum. This reduction of nearly 2 degrees C. in the interior of the body may prove of life-saving value, he declares, in cases of gastric hemorrhage, the cold having a coagulating action on the blood, supplemented by the effect of the expulsion of blood from the region and the reflex action on the vasoconstrictor nerves.

102. Dysentery Epidemic in a Hospital.—The epidemic in the case described was traced to the dishes sent out from the central kitchen. The contagious ward had its own equipment for washing the dishes before they were returned to the central kitchen, but this was shown to be inadequate. Contagious wards should have each their own separate kitchen, with no communication of dishes between the contagious ward and the other services.

105. Nerve Massage.—Cornelius is in charge of the nerve massage polyclinic connected with the Berlin Charité. The patients are given a thorough examination to exclude organic disease; if none is found, careful search is made for tender points anywhere in the body and these are frequently found at the points where the nerves emerge from the bone. Here Cornelius applies massage, and he has been able by this means to cure rebellious cases of migraine, traumatic neuroses, ptalism, hypersecretion, writer's cramp, chronic sciatica and the diffuse pains of the hysteric and neurasthenic. He explains the benefit as a stimulating to normal functioning of some

morbid point in the nervous system which is sending out constant pathologic irritation, the nerves thus never having a chance to rest. The morbid point is found where light pressure is able to elicit a morbidly exaggerated response, that is, more or less pain. Schüle has been studying the method with Cornelius and has seen many patients cured whose nervous ills had resisted all other measures.

106. Local Destructive Action of Salvarsan.—Martius reports a case in which death followed five hours after intravenous injection of 0.5 c.c. of salvarsan in a man of 39 with apparently well compensated heart disease. No thrombosis was found in this case but the kidneys showed acute necrosis of the epithelium of the convoluted tubules. He found extensive necrosis at the point of every subcutaneous or intramuscular injection of salvarsan; all the tissues in contact with the drug were totally necrotic. This necrosis involving the nerves in the region explains the neuritic phenomena repeatedly observed after the injection. Owing to the rapid decomposition of the drug, it is a question whether there may not be absorption of injurious arsenic derivatives although such absorption is hindered by the necrosis in the region. The results are liable to be very serious when infection complicates the necrosis. In one such case in his experience, there was thrombosis of the iliac vein and fatal pulmonary embolism. In one of his cases the necrosis in the gluteal muscles shows no tendency to heal although three months have elapsed. In two cases the necrotic mass had to be excised. The extension of the direct local toxic action of the drug to the sciatic nerve and sympathetic plexus explains the bladder and rectum disturbances observed in some clinics.

Therapie der Gegenwart, Berlin

December, LI, No. 12, pp. 529-576

107 Present Status of Radium Emanations in Therapeutics. F. Gudzent.

108 *Operative and Specific Treatment of Kidney and Bladder Tuberculosis. (Nieren- und Blasentuberkulose.) H. Kümmell.

108. Tuberculosis of the Urinary Apparatus.—Kümmell reviews his extensive experience with tuberculous kidney and bladder disease, emphasizing the insidious nature of the onset. Many of his patients had been long under treatment for supposed gynecologic or gonorrheal affections. He is convinced that gonorrhea in both sexes affords a predisposition to tuberculosis of the urinary apparatus. A number of his patients had been treated for bladder disturbances alone, the physician not thinking of examining for the causal kidney tuberculosis. The coincidence of gonorrhea and kidney tuberculosis is often misleading. He has performed 125 operations for kidney tuberculosis and states that of the eighty-four patients who survived the first six months, nine died within four years, two within thirteen years, for three the interval is not known, while four have been lost to sight. The sixty-six others are in good health to date, three of the patients having passed through a normal pregnancy since. His own experiences and those he finds recorded in the literature fail, he says, to show any curative action on kidney tuberculosis from tuberculin treatment.

Wiener klinische Wochenschrift, Vienna

December 22, XXIII, No. 51, pp. 1831-1870

109 *Functional Tests of the Autonomic Nervous System in Mental Disease. O. Pötzl, H. Eppinger and L. Hess.

110 *Diagnosis of Disease of Blood-Producing Organs by Exploratory Puncture of the Bone Marrow. G. Ghedini.

111 Serodiagnosis of Syphilis. (Auswertung luetischer Sera auf die Intensität ihrer komplementbindenden Eigenschaft gegen alkoholischen Herzextrakt.) E. Epstein.

112 Röntgen-Ray Findings with Obesity Heart. (Typischer Röntgenbefund am Herzen Fettleibiger und dessen anatomische Grundlage.) G. Schwarz.

December 29, No. 52, pp. 1871-1894

113 Cretinism Among the Jews. (Kretinismus unter den Juden.) A. Flinker.

114 *Prophylaxis of Scarlet Fever. (Scharlach und dessen Weiterverbreitung.) H. Kokall.

115 Suppuration After Contusion of the Kidney. (Beitrag zu den Eiterungen nach subkutanen Nierenverletzungen.) J. R. v. Winwarter.

116 Diagnosis of Duodenal Ulcer. M. Gross (New York).

117 Disturbances in Hearing After Salvarsan. (Zur Frage der Erkrankung des Gehörapparates nach Behandlung mit Arsenobenzol.) O. Beck.

109. Functional Tests of the Sympathetic Nervous System in Mental Disease.—The research described was undertaken to decide whether the action of elective drugs became altered in

the course of certain psychoses. Over a hundred patients were thus examined, the results of the tests showing that the autonomic nervous system shares in the depression in melancholia and also in the abnormal excitability in mania.

110. Exploratory Puncture of the Bone Marrow.—Ghedini's further experience has confirmed his previous statements in regard to the diagnostic importance of exploratory puncture of the bone-marrow during life. He describes ten cases in detail. His findings show that severe disease of the blood-producing organs may exist without corresponding changes in the blood, either at the time or following them. In many cases disease of the bone marrow evidently runs its course unsuspected. In one case the general health has remained good and the blood-picture is approximately normal, although the bone marrow shows pronounced myeladenoid transformation and the liver and spleen are evidently infiltrated with myeladenoid elements. Notwithstanding these changes in the marrow, its function of producing red corpuscles seems to be scarcely impaired. Systematic application of exploratory puncture of the bone marrow on an extensive scale will certainly throw light on a number of affections, including malignant growths. The exploratory puncture, he says, is very easily done and is harmless.

114. Spread of Scarlet Fever.—Kokall states that in the last twenty-eight years 4,251 cases of scarlet fever have been reported at Brünn. His study of the mode of dissemination of the disease gives discouraging results, as the sterilization of the premises and measures to prevent infection of others failed in so many cases. It is evident, he thinks, that the virus is transmitted not only in the period of incubation but long after recovery far beyond the routine six weeks. The aim should be, he thinks, to remove the virus from the mouth by mechanical means. In a series of twenty families, fifty-eight cases of scarlet fever developed. In some instances the second case followed after an interval of fifty-seven days, when the child first affected returned from the hospital, notwithstanding all precautions.

Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart

LXVII, No. 2, pp. 267-601. Last indexed Nov. 12, 1910, p. 1771

- 118 Cicatrization of Perineal Tears. (Lässt sich Küstners Lehre von der Entstehung asymmetrischer Dammrissnarben auch durch histologische Untersuchungen stützen?) R. Stern.
119 Improved Technique for Abdominal Fixation of Uterus in Serious Displacement or Total Prolapse. (Abdominale Exohysteropexie bei schweren Lagefehlern und totalem Prolaps des Uterus.) S. Solieri.
120 Abnormally Prolonged Pregnancy. (Klinische und forensische Studie über verlängerte Schwangerschaft.) M. Ciulla.
121 Combined Version and Elastic Bag in Treatment of Placenta Prævia. (Erfolge der Behandlung der Placenta prævia bei der kombinierten Wendung und bei der Metreuryse.) Weischer.
122 Cholesteatoma in Ovary. W. Piltz.
123 Plastic Utilization of Uterus with Rectocele. A. Kraatz.
124 Leiomyoma of Uterine Cervix; Four Cases. (Leiomyome der Muttermundslippe.) K. Kolb.
125 Pathology of the Uterus. O. Polano.
126 *Tardy Hemorrhage in the Puerperium. (Spätblutungen im Wochenbett.) H. Küster.
127 Cancer of the Cervix Complicating Pregnancy and Delivery. (Komplikation der Schwangerschaft und Geburt mit Columkrebs.) W. Beckmann.
128 Improved Technique for Laparotomy. (Zur Methodik der Kötötomie.) Harte and M. Hofmeier.

126. Tardy Hemorrhages in the Puerperium.—Küster announces on the basis of two cases from his experience that hemorrhage can occur from thrombi in the uterus a week after it has been completely emptied. Macroscopically, the thrombi cannot be distinguished from placenta and membrane scraps, but the microscope will reveal their true nature and microscopic examination should never be omitted in forensic cases. In prevention of hemorrhage after the first week of the puerperium, patients who have had any disturbances in the days immediately following delivery should be watched with special care. In his first case the hemorrhage came on the fourteenth day. The woman had had severe hemorrhage from atony at the birth of her last child. The clot found in the uterus resembled a bunch of tissue measuring 4 by nearly 3 cm. but proved to be nothing but a thrombus. The woman recovered under the usual measures. The puerperium had been otherwise normal, as also in the other case except for placenta marginata and considerable hemorrhage during Credé expression which had been required in both cases.

Zeitschrift für klinische Medizin, Berlin

LXVI, Nos. 3-6, pp. 165-478. Last indexed Oct. 1, 1910, p. 1239

- 129 Experimental Coma Induced by Sodium Oxybutyrate. (Wirkung des buttersauren Natriums auf den Organismus junger hungernder Hunde.) A. Marx.
130 Pathology of Paroxysmal Hemoglobinuria. L. Fejes and J. Kentzler.
131 Reliability of Threshold Percussion of Stomach. (Perkussion des Magens.) N. Roth.
132 Tuberculin Anaphylaxis. (Zur Frage der Tuberkulin-Anaphylaxie.) G. Kiralyfi.
133 Coagulation-Promoting Action of Rabbit Serum and Organ Extracts in Acquired Hemophilia. M. Vogel.
134 *Elimination of Drugs by Diseased Lungs. F. Falk.
135 The Urine in Pregnancy. (Ueber Ammoniak-, Aminosäuren- und Peptid-Stickstoff im Harn Gravider.) F. Falk and O. Heský.
136 Recovery from Primary Pernicious Anemia. (Von dem weiteren Schicksal einer vor 13 Jahren geheilten perniziösen Anämie.) G. v. Diebala.
137 Subsidence of Pernicious Anemia After Onset of Tuberculosis. G. v. Diebala.
138 Bacteriologic Findings in Epidemic Cerebrospinal Meningitis. J. Lehmacher.
139 Influence of Radium Emanations on Purin Metabolism. (Einfluss der Radiumemanation auf den Purinstoffwechsel.) F. Gudzent and Loewenthal.
140 Influence of Radium Emanations on Gouty Tophi. (Einfluss der Radiumemanation auf Mononatriumurat im tierischen Organismus.) L. Fofanow.
141 Varying Content of Atmosphere in Radium Emanations in Relation to Biologic Processes. (Beitrag zur Erklärung klimatischer Einflüsse auf biologische Vorgänge.) P. L. E. Grabley.
142 Influence of Thyroid on Coagulation of Blood. (Zur physiologie und Pathologie der Schilddrüse.) K. Kottmann and A. Lidsky.
143 The Fibrin Content of the Blood in Connection with Thyroid Functioning. K. Kottmann.
144 The Thyroid and Autolysis. K. Kottmann.
145 *Measurement of Horse Power of Pulse: Energometry. (Neue Wege der Pulsdiagnostik.) T. Christen.
146 Diagnosis and Treatment of Pericarditis with Effusion, and Adhesive Pericarditis. K. F. Wenckebach.
147 Frictional Resistance of Blood. (Reibungswiderstand des Blutes und Poiseuillesches Gesetz.) W. Hess.
148 Case of Leukanemia. E. Magnus-Alsleben.
149 Experimental Metaplasia of the Spleen. (Zur Frage der experimentellen myeloischen Milz-Metaplasie.) R. Hertz.
150 Local Disturbances in the Circulation with Exercise of a Limb. (Lokale Kreislaufveränderungen bei aktiven Bewegungen einer Extremität.) S. Saski.
151 Schönlein's Pioneer Work in Diagnosis. (Joh. Lucas Schönleins Verdienste um die diagnostische Technik.) E. Ebstein.

134. Elimination of Various Substances by Diseased Lungs.

—Falk experimented with various drugs, his results confirming the assertion that salicylic acid does pass into the diseased lung and is thus eliminated by the respiratory passages; antipyrin also passes into the sputum in the same way but in far smaller proportions. Other drugs tested were not refound in the sputum at all, not even guaiacol. Thus there is no ground, he declares, for assuming any special local action on the diseased lung from administration of guaiacol, the terpene preparations, etc. At the same time he reports research which has demonstrated that intake of salt, increasing the salt content of the blood, is followed by an increase in the proportion of salt in the sputum and by an increase in the amount of the sputum. On a salt-poor diet the salt content of the sputum is reduced and the total amount drops to a third of the former quantity.

145. The Energy of the Pulse in Horse-Power.—Christen has applied to the study of the pulse the mechanical principle of measurement of energy by horse-power. As the heart action is such a small fraction of the accepted horse-power unit, he uses as the unit the force required to raise 1 gm. to a height of 1 cm. in 1 second. He applies the cuff to the largest part of the calf. The cuff is inflated by a hermetically connected and closed graduated syringe, and the manometer used is of the most sensitive type, working with the least possible friction and inertia. He calls the combined apparatus the energometer, and adds that the findings are not only the record of the mechanical energy of the pulse wave but that a new kind of curve results which throws light on certain elements of the pulse, especially what he calls the stasis curve (*Stauungskurve*), which is a mathematically exactly defined curve as he explains in detail. The resulting tracings record six properties of the pulse, five of which, he states, are entirely new and open new horizons for clinical research.

Zentralblatt für Chirurgie, Leipsic

December 24, XXVII, No. 52, pp. 1633-1656

- 152 Lever Apparatus for Reduction of Fractures. (Hebelapparat zur Beseitigung der Dislocatio ad latus bei Knochenbrüchen.) M. Kirschner.
153 Rib for Plastic Operation on the Chin. (Kinnbildung bei Mikrognathie.) P. Esau.

Zentralblatt für Gynäkologie, Leipsic*December 24, XXXIV, No. 52, pp. 1673-1704*

- 154 Necessity for Anaerobic Cultures in Obstetrics and Gynecology. (Notwendigkeit des anaeroben Kulturverfahrens in Geburtshilfe und Gynäkologie.) A. Hamm.
- 155 *Vaginal Cesarean Section in Eclampsia. O. Goldberg.

155. Vaginal Cesarean Section in Eclampsia.—Goldberg reports three cases of eclampsia in which the convulsions were promptly arrested by vaginal Cesarean section. One patient had had eclampsia at a preceding childbirth, the convulsions ceasing then also immediately after delivery.

Gazzetta degli Ospedali e delle Cliniche, Milan*December 13, XXXI, No. 149, pp. 1577-1584*

- 156 Urethroscopy in Diagnosis and Direct Treatment of Chronic Urethritis. Commenced in No. 153. F. Cuturi.

December 20, No. 152, pp. 1609-1616

- 157 Glycosuria and Diabetes. G. A. Pari.

December 22, No. 153, pp. 1617-1624

- 158 Roentgen-Ray Treatment in Internal Medicine. G. Lucibelli.

Policlinico, Rome*December, XVII, Medical Section No. 12, pp. 525-568*

- 159 Origin of Tube-Casts. I. G. Roseo.
- 160 Mechanism of Epinephrin Vasoconstriction. G. Cardone.

Norsk Magazin for Lægevidenskaben, Christiania*January, LXXII, No. 1, pp. 1-176 and Supplement*

- 161 Salvarsan in Syphilis. C. Boeck.
- 162 Syphilis in Animals. (Dyresyfilis.) R. Krefling.
- 163 *Oxyuris as Cause of Ileus. J. Roll.
- 164 *The Use of Sulphuric Acid in Industrial Preparations of Food. (Om anvendelsen av svovelsyrling i nærings- og nydelsesmiddelindustrien.) S. Schmidt-Nielsen.
- 165 *Normal and Pathologic Anatomy of the Auriculoventricular Bundle. (Den atrio-ventriculære muskelforbindelse i menneskehjertet.) G. H. Monrad-Krohn.

163. Oxyuris as Cause of Fatal Ileus.—In Roll's case the patient was a young woman who did not seem to benefit by the laparotomy for the assumed perforation peritonitis. No perforation was found and the symptoms of ileus persisted. Necropsy revealed a hemorrhagic tumor, the size of an almond, in the small intestine, evidently the reaction of the tissues to the presence of a parasite, the resulting changes obstructing the lumen.

164. Sulphuric Acid in Articles of Food.—Schmidt-Nielsen has been investigating to find how much sulphuric acid is left in various articles of food when the acid has been used in its manufacture. In various brands of syrup he found from traces up to 84.6 mg. in 100 gm. of the syrup. This highest figure was the average from five specimens of "American glucose." He also found from traces up to 182 mg. in eleven varieties of dried fruits and up to 299.8 mg. in various other substances, gelatin, etc., the largest proportion being found in pressed hops.

165. The Auriculoventricular Bundle of the Human Heart.—Monrad-Krohn reports the results of study of the normal and pathologic anatomy of the bundle of His, etc., his material embracing forty-one hearts, including four with a preceding history of the Adams-Stokes syndrome, and one with a possible history of the kind. In the latter case there was fatty and vacuolar degeneration of the main bundle and a large infarct in the interventricular septum. In three of the four cases with a history of pronounced Adams-Stokes syndrome he found deposits of lime, the lime foci compressing and crowding out the muscular fibers. In the fourth case no lesion in the bundle could be discovered. The article is profusely illustrated and the author describes an improved technic for examining this region.

Ugeskrift for Læger, Copenhagen*December 22, LXXII, No. 51, pp. 1607-1640*

- 166 Two Cases of Leukemia in One Household. V. Bic.

December 30, No. 52, pp. 1641-1660

- 167 *The Parathyroids Not Responsible for Tetany in Children. G. Jørgensen.

167. The Parathyroids Not Responsible for Tetany in Children.—Jørgensen criticizes recent communications on the connection between the parathyroids and the development of tetany. He shows that Yanase's material does not sustain his assumption in regard to the causal rôle of the parathyroids as lesions in these glands were discovered in only nine of the fifty children he examined. The other changes in the glands described were too trivial to be considered as having causal

significance. In a case of tetany in Jørgensen's experience with fatal laryngospasm, the four parathyroid glands were found entirely normal even in 1,000 sections under the microscope, and he cites other authors who have found the glands normal in fatal cases of tetany.

Upsala Läkareförenings Förhandlingar*XVI, No. 3, pp. 137-230. Last indexed Jan. 21, p. 232*

- 168 *Combination of Bronchial Asthma and Pulmonary Tuberculosis. I. Hedenius.
- 169 Housing Conditions in Upsala. (1907 års bostadsundersökning i Upsala.) K. A. Edin.

168. Combination of Bronchial Asthma and Pulmonary Tuberculosis.—Hedenius has five patients presenting this combination and discusses the means of distinguishing it from the dyspnea of pulmonary tuberculosis on the one hand and, on the other hand, from symptoms suggesting pulmonary tuberculosis with merely existing asthma. The coincidence seems to be casual except that possibly tuberculous glands may have something to do with bringing on the asthma. Neither affection seems to influence the course of the other except that the asthma may subside and disappear as the tuberculous process becomes installed in the lungs. In one of his cases the asthma of twenty years' standing subsided entirely after the onset of the tuberculosis.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

TEXT-BOOK OF NERVOUS DISEASES FOR PHYSICIANS AND STUDENTS. By Prof. H. Oppenheim of Berlin. Fifth Edition. Authorized Translation by Alexander Bruce, M.D., Physician to the Royal Infirmary, Edinburgh. Volumes I and II. Cloth. Price, 2 guineas. Pp. 1424, with 432 illustrations. Edinburgh: Otto Schulze & Co., 20 S. Frederick St., 1911.

PREPARATION OF THE COD AND OTHER SALT FISH FOR THE MARKET. Including a Bacteriological Study of the Causes of Reddening. By A. W. Bitting, Inspector, Bureau of Chemistry. Bull. 133, Bureau of Chemistry, U. S. Dept. of Agric. Paper. Pp. 63, with illustrations. Washington: Government Printing Office, 1911.

NOTES ON DENTAL METALLURGY. For the Use of Dental Students and Practitioners. By W. Bruce Hepburn, L.D.S. (Glasgow), Lecturer on Dental Metallurgy and Visiting Dental Surgeon in the Glasgow (Incorporated) Dental Hospital and School. Cloth. Price, \$2 net. Pp. 213. New York: William Wood & Co., 1911.

HAY FEVER AND PAROXYSMAL SNEEZING (Vasomotor Rhinitis). By Eugene S. Yonge, M.D., Physician to the Manchester Hospital for Consumption and Diseases of the Throat. Cloth. Price, \$2 net. Pp. 150, with illustrations. New York: William Wood & Co., 1910.

HUMAN EMBRYOLOGY AND MORPHOLOGY. By Arthur Keith, M.D., F.R.C.S., Lecturer on Anatomy, London Hospital Medical College. Second Edition. Cloth. Price, \$3.50 net. Pp. 402, with 316 illustrations. New York: Longmans, Green & Co., 1910.

PROCEEDINGS OF THE FOURTH ANNUAL MEETING OF THE ASSOCIATION OF LIFE-INSURANCE PRESIDENTS. (Robert Lynn Cox, General Counsel and Manager, New York.) Held in the Hotel La Salle, Chicago, Dec. 9 and 10, 1910. Paper. Pp. 215.

THE AMERICAN YEAR-BOOK. A Record of Events and Progress, 1910. Edited by S. N. D. North, LL.D., Under Direction of a Supervisory Board Representing National Learned Societies. Cloth. Pp. 867. New York: D. Appleton & Co., 1911.

MANUAL OF DISEASES OF WOMEN. By W. E. Fothergill, M.D., Assistant Gynecological Surgeon, Royal Infirmary, and the St. Mary's Hospital. Cloth. Price, \$3 net. Pp. 433, with 144 illustrations. New York: William Wood & Co., 1910.

HOW TO PREPARE A PAPER FOR PUBLICATION. Read at the Marine Biological Laboratory, Wood's Hole, Mass., July 5, 1910. By C. Bowyer Vaux. Paper. Sent Gratis. Pp. 20. Baltimore: Williams & Wilkins Co., 2427 York Road, 1910.

FORTSCHRITTE DER NATURWISSENSCHAFTLICHEN FORSCHUNG. Herausgegeben von Dr. E. Abderhalden. Berlin. Zweiter Band. Paper. Price, 12 marks. Pp. 364, with 72 illustrations. Vienna: Urban & Schwarzenberg, 1911.

DIE THERAPIE DER SYPHILIS. Ihre Entwicklung und ihr gegenwärtiger Stand. Von Dr. Paul Mulzer in Berlin. Mit einem Vorwort von Dr. P. Uhlenhuth. Paper. Price, 2.80 marks. Pp. 100. Berlin: Julius Springer, 1911.

DEUTSCHES ARZNEIBUCH. Fünfte Ausgabe 1910. Paper. Price 3.90 marks. Pp. 680. Berlin: R. v. Deckers Verlag, G. Schenck, Königlicher Hofbuchhändler, 1910.

REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH OF THE TERRITORY OF HAWAII. For the Twelve Months Ended June 30, 1910. Paper. Pp. 172. K. B. Porter, Secretary.

PUBLICATIONS OF THE LIBRARY OF CONGRESS ISSUED SINCE 1897. January, 1911. Paper. Pp. 45. Washington: Government Printing Office.

THE PROCEEDINGS OF THE CHARAKA CLUB. Vol. III. Cloth. Price, \$3 net. Pp. 174, with illustrations. New York: William Wood & Co., 1910.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 6

CHICAGO, ILLINOIS

FEBRUARY 11, 1911

SURGICAL DISEASES OF THE UMBILICUS *

THOMAS S. CULLEN, M.D.
BALTIMORE

In the summer of 1904 I removed from a man 42 years of age an umbilical growth which on histologic examination was found to be an adenocarcinoma. Being at a loss to account for a glandular growth at the umbilicus, and at the time being unfamiliar with the fact that cancers of some of the abdominal organs sometimes give rise to metastases at the umbilicus, I started to review the literature of diseases of the umbilicus. It was my intention to present to the Section a digest of these studies, but, notwithstanding the fact that few surgeons have observed more than one or two pathologic conditions of the umbilicus, I found that the sum total gives such an abundant and varied material that to do the subject justice and to consider it carefully from all standpoints would require several hours.

Undoubtedly one of the best articles on the umbilicus is that by Reginald Fitz,¹ published in 1884. Other valuable contributions have also been published by Freer² and by Morris.³

The French have dealt with the subject in a most exhaustive manner, and especially good articles have been published by Villar,⁴ Lannelongue and Frémont,⁵ and by Quénu and Longuet.⁶ In the German literature the articles of Kolaczek,⁷ Küster,⁸ Hertz,⁹ Ledderhose,¹⁰ Tillmans,¹¹ Pernice,¹² Siegenbeek van Heukelom¹³ and Schroeder¹⁴ stand out prominently.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

1. Fitz, Reginald: Persistent Omphalomesenteric Remains: Their Importance in the Causation of Intestinal Duplication, Cyst-formation and Obstruction, *Am. Jour. Med. Sc.*, 1884, lxxxviii, 30.

2. Freer, James A.: Abnormalities of the Urachus, *Ann. Surg.*, 1887, v, 107.

3. Morris: Malignant Diseases of the Navel as a Secondary Complication, *Ann. Surg.*, 1892, xv, 326.

4. Villar: Tumeurs de l'ombilic, *Thèse de Paris*, 1886.

5. Lannelongue and Frémont: De quelques variétés de tumeurs congénitales de l'ombilic et plus spécialement des tumeurs adénoïdes diverticulaires, *Arch. gén. de méd.*, 1884, Siegenbeek 7, xliii, p. 36.

6. Quénu and Longuet: Du cancer secondaire de l'ombilic, *Rev. de chir.*, 1896, xvi, 97.

7. Kolaczek: Zwei Entero-Teratome des Nabels, *Arch. f. klin. Chir.* (Langenbeck's), 1875, xviii, 349.

8. Küster: Die Neubildungen am Nabel erwachsene und ihre operative Behandlung, *Arch. f. klin. Chir.*, (Langenbeck's), 1874, xvi, 234.

9. Hertz: Ueber einen Fall von Adenocarcinom des Nabels bei einer 58-jährigen Frau, *Inaug. Diss.*, Würzburg, 1905.

10. Ledderhose: Chirurgische Erkrankungen des Nabels, *Deutsche Chirurgie*, 1890, Instalment 45 b.

11. Tillmans: Ueber angeborenen Prolaps von Magenschleimhaut durch den Nabelring (Ectopia ventriculi) und über sonstige Geschwülste und Fisteln des Nabels, *Deutsch. Ztschr. f. Chir.*, 1882-1883, xviii, 161.

12. Pernice: Die Nabelgeschwülste, *Halle*, 1892.

13. Siegenbeek van Heukelom: Die Genese der Ectopia ventriculi am Nabel, *Virchows Arch. f. path. Anat.*, 1888, cxl, 475.

14. Schroeder: Ueber die Divertikel-Bildungen am Darm-Kanale, *Inaug. Diss.*, Augsburg, 1854.

On this occasion, then, I shall limit myself to the consideration of pathologic pictures due to partial or total lack of closure of the omphalomesenteric duct and to primary and secondary cancer of the umbilicus.

NON-MALIGNANT ABNORMALITIES OF THE UMBILICUS

Adenoma of the Umbilicus.—Occasionally when the cord comes away a small red, pedunculated nodule is found springing from the umbilical depression. This nodule may be the size of a pea, a small cherry or a red raspberry. It is bright red in color, has a velvety surface, secretes a small amount of mucus and is attached to the umbilical depression by a delicate pedicle. On pressure this small nodule is firm and velvety. On histologic examination the outer surface is found to be covered with mucosa identical with that lining the small intestine. There is an outer covering of cylindrical epithelium, and then come the typical Lieberkühn glands with the intervening stroma. Beneath the mucosa is a certain amount of fibrous tissue and the center is composed of non-striped muscle fibers.

Funnel-shaped Umbilicus.—Sometimes after the cord comes away the nurse notices that the umbilicus is somewhat moist and on investigation the umbilical depression is found to be deeper than usual. The outer portion is covered with normal skin, the deeper portion of the funnel has a reddish, velvety lining and partially filling the cavity is a transparent, slightly tenacious mucus. Sections from the red lining show that it consists of a mucosa identical with that of the intestine and that it has an outer coat of non-striped muscle fibers.

Cystic Cavities in the Abdominal Wall at the Umbilicus.—In a few cases there was noted a slight watery discharge from the umbilicus and on examination a small fistulous opening was detected leading directly inward for from one to several centimeters. These cavities were partially filled with mucus, and were lined with a velvety membrane which proved to be intestinal mucosa. These cystic spaces may lie external to or beneath the aponeurosis and in at least one instance the cystic cavity had no connection with the outside.

Meckel's Diverticulum.—As is well known, Meckel's diverticulum, when present, usually projects from the convex surface of the ileum a few inches from the ileocecal valve and represents a portion of the omphalomesenteric duct which has never closed. It may or may not have a mesentery. Its tip may be free or attached to the umbilicus by delicate threads—remnants of the omphalomesenteric arteries and veins or of the outer portion of the omphalomesenteric duct which has not totally disappeared. Meckel's diverticulum may extend up to and be firmly attached to the peritoneum at the umbilicus.

Intestinal Cysts.—Intestinal cysts occasionally occur. Meckel's diverticulum may be nipped off and form a closed sac lined with intestinal mucosa having muscular walls and an outer peritoneal surface. Several such cases are on record. These cysts usually contain nothing but mucus, indicating that they have been cut off at an early period, at a time when no meconium is present in the intestine.

Patent Omphalomesenteric Duct.—A large number of cases belonging to this class have been reported. In some the cord is of unusual size at the umbilicus and shortly after it has dropped off a red mass is found. This is sometimes very small; in other cases one centimeter or more in diameter. It usually projects about 1 cm. from the surface, but in some cases is fully 4 cm. long. In the center is a depression into which a sound can be passed for several centimeters. At first only mucus escapes, but later more or less fecal matter. Where the opening is small and a projection is scarcely noticeable only a faint moisture may be noted.

In several cases in which this very small opening large existed numbers of roundworms and occasionally a tapeworm have escaped through the fistulous tract.



Fig. 1.—Adenoma of the umbilicus. The specimen represents a transverse section through a so-called adenoma of the umbilicus. The central stem is made up of non-striped muscle fibers cut transversely. Surrounding this is a zone of fibrous tissue and the outer surface is covered by a mucosa consisting essentially of glands of the small intestine. (Lannelongue and Frémont: Arch. gén. de méd., 1884, cliii, 62.)

Prolapsus and Invagination of the Small Bowel Through the Omphalomesenteric Duct.—If the fistulous opening be large, serious consequences usually follow. When the cord comes away a red nodule at the umbilicus is noted and fluid escapes. Fecal matter is usually passed through the rectum. In the course of a few days, when the child cries or strains, the umbilical picture changes and a little dome-like elevation is seen in the fistulous tract and in a short time a sausage-like mass several inches in length may be seen literally rolling out of the abdomen. This represents the small bowel which is being turned inside out through the fistulous opening. At either end of this sausage-like mass one finds a lumen, the upper and lower ends of the prolapsed part of the bowel. If one were able to put a hand into the abdomen the minute the bowel begins to invert and make gentle traction, the bowel would at once turn in and become straight, with the fistulous tract passing off

at right angles and ending at the umbilicus. As one may surmise, fecal matter comes from the upper end of the prolapsed bowel, nothing but mucus from the lower end and sometimes mucus and possibly a little blood from the rectum. The child dies in from one to three days with signs of shock and occasionally of a general peritonitis.

Origin of Adenoma of the Umbilicus.—The term "adenoma" is a misnomer, but as the name has been used so long it has been generally accepted. When we remember the funnel-shaped umbilical depression with the intestinal mucosa in the depth, and also remember that it is the outer portion of the omphalomesenteric duct which has remained open, it is only necessary to realize what may take place when the umbilicus is gradually closing in. This funnel of mucosa may be forced outward and turn inside out. The inner lining of mucosa now becomes the outer surface and the outer muscular walls become the center of the pedicle. This is exactly the condition found when these adenomata are present.

Treatment of Remains of the Omphalomesenteric Duct.—Adenomata may be ligated. If so treated they usually drop off in a few days. They may be ligated

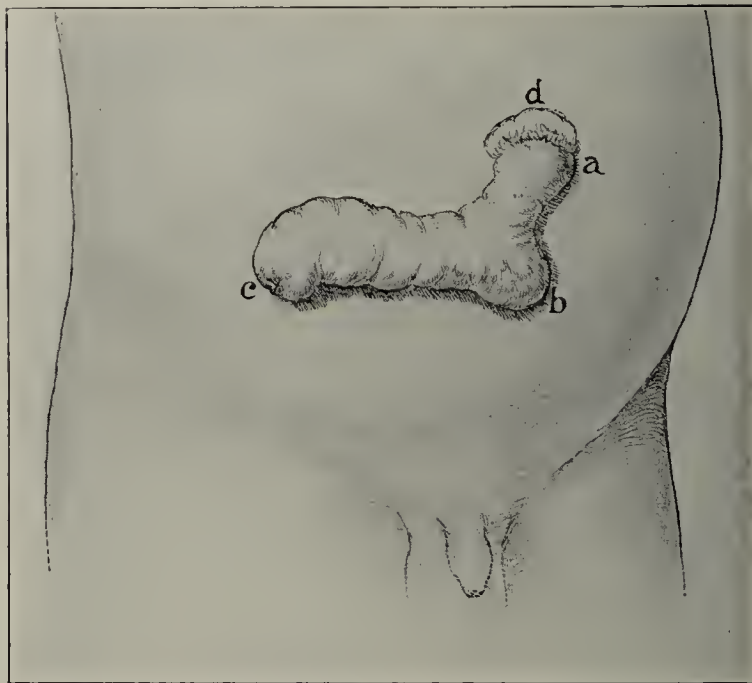


Fig. 2.—Inversion of the patent Meckel's diverticulum and its complication with intestinal prolapsus. A tumor was noticed at the umbilicus as soon as the cord came away. Through this opening fecal matter escaped. There were also normal stools by the rectum. This tumor was 1 cm. long, blood-red in color, velvety, and looked like injected intestinal mucosa. It was 1.5 cm. in diameter and a probe passed in 4 cm. Five days later the small tumor had been transformed into the sausage-like mass noted in the figure. Projecting from the umbilical ring was a cylindrical tumor 2.5 cm. long and 1.75 cm. thick. This tumor, a, was continuous with the sausage-like cylindrical tumor b, c. The tumor was dark red and covered over by mucosa which bled easily. Funnel-like openings were present at points b and c. The opening at b passed inward through a canal in the tumor a and then was continuous into the abdominal cavity. From the opening at b fecal matter escaped. At d was a blind projection. The child was observed for several days and as a result of crying more loops of intestine came down. An attempt was made to carry these back into the abdomen and the bowel was injured. From this description it is seen that there was a prolapsus of the inverted intestine. The child died sixty hours after operation. (Arthur Barth: Deutsch. Ztschr. f. Chir., 1887, xxvi, 195.)

and at once cut off. It is always important to ligate, as the pedicle usually contains vessels of goodly size. In all such cases the parents should be cautioned to watch the child carefully because in a certain percentage of these children a Meckel's diverticulum exists and is firmly attached to the umbilicus. If at any time signs of intestinal obstruction develop an exploratory section should at once be performed. Several cases have been

reported in which small adenomata existed, attached by a fibrous cord to a Meckel's diverticulum.

Where a funnel-shaped umbilicus is present and the deeper portion is lined with mucosa it seems advisable to make an elliptical incision, removing the entire area and at the same time exploring to see if Meckel's diverticulum is attached to the umbilicus. If so, it should be removed.

In those cases in which a very small fecal fistula is present it may be advisable to wait a few months to see if it will not close. If it is still open at the expiration of six months it should be dissected out down to the ileum and removed. Even should it close the child should be carefully watched for signs of obstruction.

Where the fistulous opening is large it should be removed at once. With the child in good condition the danger is not very great. When prolapsus of the bowel with inversion has occurred, however, as a rule signs of shock have already supervened and the chances of success even with operation are very remote.

MALIGNANT GROWTHS OF THE UMBILICUS

These may be divided into four varieties:

1. Primary squamous-cell carcinoma.
2. Primary adenocarcinoma.
3. Sarcoma.
4. Secondary carcinoma.

Primary Squamous-Cell Carcinoma.—Cases have been reported. They are very rare and even in the majority of the supposedly authentic cases there is doubt as to the accuracy of the diagnosis. The gross appearance is identical with that of a skin cancer elsewhere. The process seems to be a slow one and on histologic examination the typical appearance of squamous-cell growth is clear.

Primary Adenocarcinoma of the Umbilicus.—This appears to be more frequent than that of the squamous-cell type. Here also much confusion exists from the fact that the umbilical growth may be nothing more than a secondary manifestation of a primary growth in one of the abdominal organs. As has been pointed out in the preceding paragraphs glandular remnants of the omphalomesenteric duct are often present at or near the umbilicus and one would naturally expect that these should occasionally undergo malignant changes.

Bonvoisin¹⁵ observed a case in Tillaux's clinic that seemed without doubt to be a primary umbilical carcinoma. A man, 64 years old, had been ill for two months. At the umbilicus was a brawny excrescence. When the nodule was first noticed it was no larger than a pea. In fifteen days it had ulcerated and the surrounding skin

was eczematous. On his admission to the hospital the umbilical zone was replaced by a shallow ulcer with a blackish crust and surrounding this was an inflammatory zone. The entire mass was as large as a five-franc piece and immobile. The nodule was removed but the man died. At autopsy no peritonitis was found and careful examination failed to reveal any primary carcinoma in the abdomen. Ducellier, who examined the specimen, came to the conclusion that the growth was a primary adenocarcinoma of the umbilicus originating from remains of the omphalomesenteric duct.

Sarcoma of the Umbilicus.—Pernice, in his splendid monograph, says that he was able to collect accounts of only six cases. On reading over the reports of these cases, however, one cannot help gathering the impression that most of the growths were in reality fibromata. The evidence of their sarcomatous nature is hardly sufficient to be convincing.

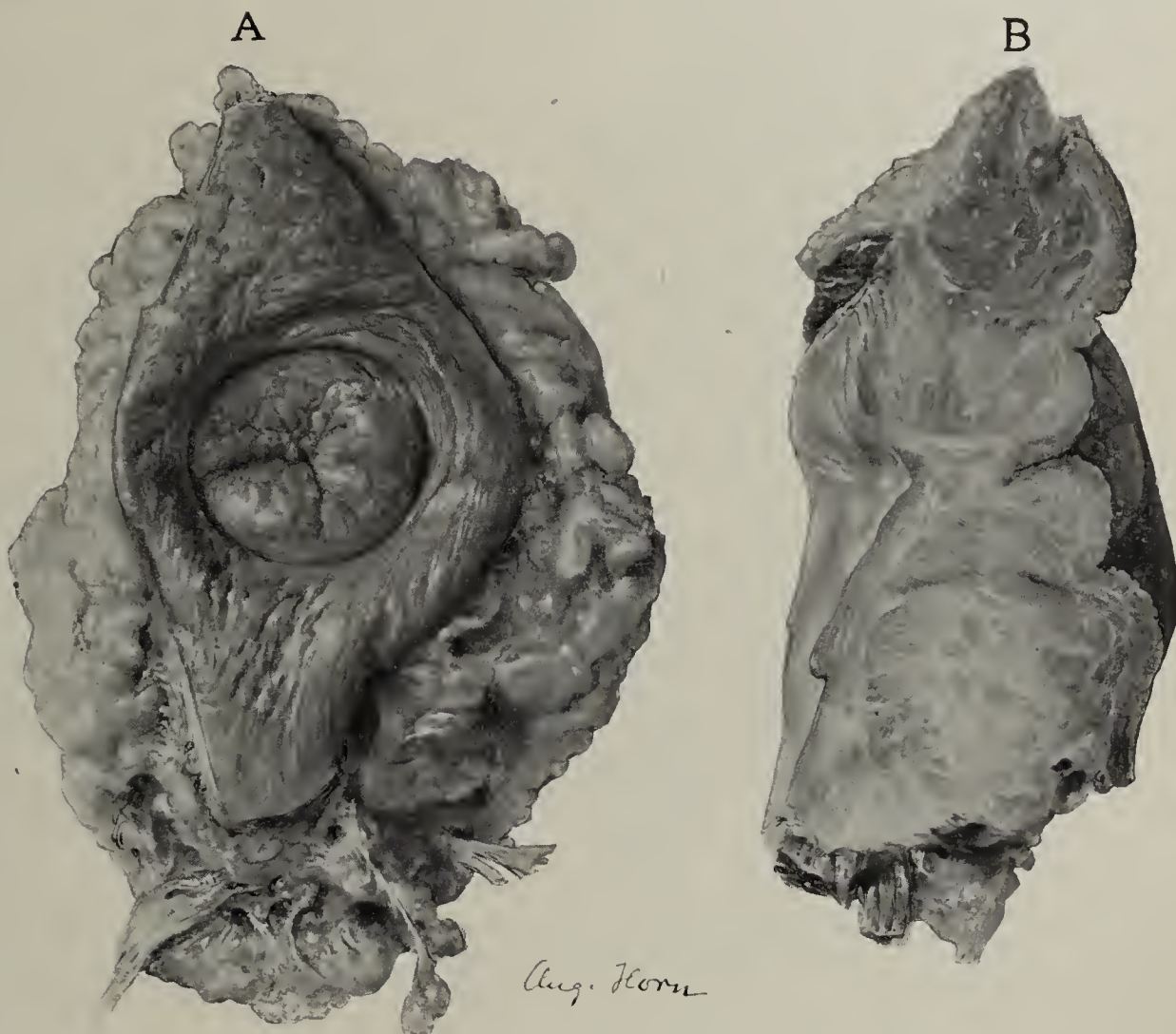


Fig. 3.—Secondary carcinoma of the umbilicus. Natural size. (Path. No. 15029. Specimen sent by Dr. Haggard of Nashville, Tenn., April, 1910.) The umbilical fold is much widened and the umbilicus is shallower than usual. It presents a somewhat uneven and nodular appearance, but is everywhere intact. To the right is a longitudinal section through the umbilicus. There is a deep cleft along the skin surface and the umbilical fold is deeper than usual. The fat in the depth has been replaced to a large extent by fibrous tissue, which is everywhere infiltrated by carcinoma. The peritoneal surface, which is to the left, is perfectly smooth; there is not the slightest evidence of any adhesions.

Leydhecker¹⁶ reported the case of a girl of 14, poorly nourished, who had a nodule at the umbilicus. This grew slowly until nine months before operation, when it suddenly became painful and rapidly became larger. At operation the tumor was found to be oval and the size of an orange. It was smooth and slightly pendulous. The skin over the tumor was very thin and bluish-red. Over the lower part of the tumor were ulcerated areas covered with blood and pus. The tumor lay on the superficial fascia. On section it was yellow,

15. Bonvoisin: D'épithélioma de l'ombilic. Thèse. Paris. 1891.

16. Leydhecker: Zur Diagnose der sarcomatösen Geschwulste, Giessen, 1856.

homogeneous and resembled pork. Histologically it proved to be a spindle-celled growth. It was probably a sarcoma. The subsequent history was not recorded.

Secondary Carcinoma of the Umbilicus.—From a clinical standpoint this is by far the most interesting and important pathologic change that may be encountered at the umbilicus. Without a doubt many members of this Section have had one or more patients come to them complaining of an uncomfortable sensation at the umbilicus. On examination some thickening was detected or possibly a small nodule. There was, however, no evidence of any inflammation and the patient was probably in good health.

Such patients frequently give a history of having had a blow on the abdomen or a sudden abdominal strain a few months before this thickening was noted. If a careful history be elicited, we shall learn that for several months they have had some indigestion or a little vomiting, although in some cases these symptoms may be

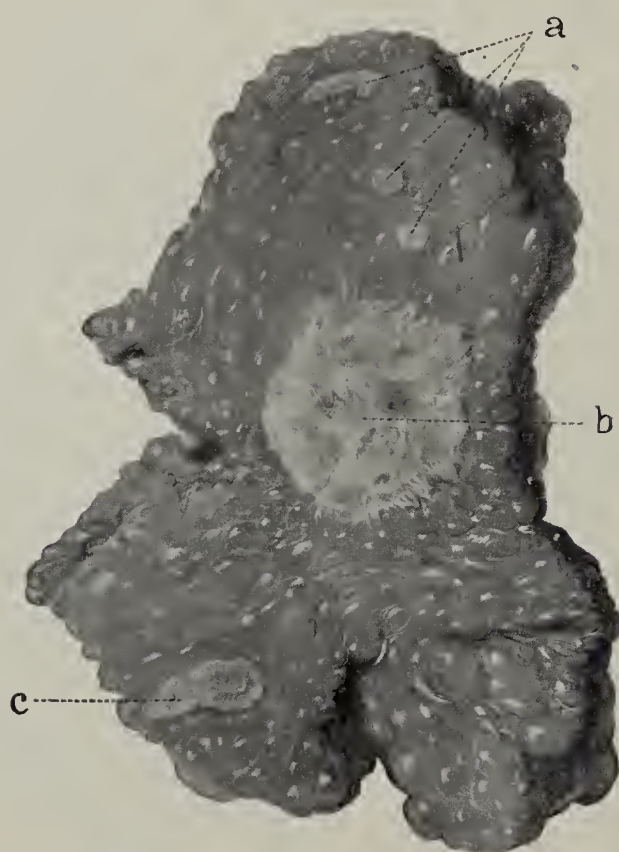


Fig. 4.—The section shows carcinoma of the right inguinal glands. Scattered throughout the adipose tissue are several solid areas. Those indicated by *a* are small lymph-glands. The lymph-gland at *b* is greatly enlarged, and everywhere infiltrated by carcinoma which is invading the surrounding tissue; *c* is also an area of carcinoma.

entirely wanting. In other cases the umbilical discomfort was the first thing that in any way inconvenienced the patient. Shortly after the nodule is detected signs of indigestion usually manifest themselves, and the patient loses weight and dies. The diagnosis may still be in doubt, but an autopsy will usually reveal a carcinoma of the stomach, which in many of the cases has been latent, and which occasionally has given rise to no local manifestations whatever.

In these cases the carcinoma has extended to the under surface of the liver either by the lymphatics or by continuity. It has then traveled along the suspensory ligament to the umbilicus. The umbilical growth, accordingly, lies extraperitoneally between the peritoneum and the fascia. From this point it gradually spreads through the surrounding fat as a rather diffuse growth. This growth on section reminds one more of dense fibrous tissue than of a carcinoma (Figs. 3, 5 and 6.) In the early stages there are no definite discrete foci that could

be recognized as carcinomatous. Their absence is due to the fact that the glands are so thoroughly scattered throughout the fibrous tissue. Rarely in the early stages is the peritoneum implicated. In each of the three illustrations the peritoneum was perfectly smooth.

After the umbilical nodule has been in existence for several months the lymph-glands may be implicated. The superficial lymphatics from the upper part of the umbilicus pass to the axillary glands; those from the lower portion to the inguinal glands. The deep lymphatics pass either to the retrosternal or iliac glands.

Cancer of the stomach may occasionally become adherent to the anterior abdominal wall and involve the umbilicus by continuity. While a gastric cancer is the most frequent cause of secondary growth at the umbilicus, cancer of the small or large intestine or of the uterus or ovaries may be followed by a secondary umbilical growth. In these cases the extension to the umbilicus may be by way of the lymphatics, by continuity or through secondary involvement of the omentum. In several cases the omentum has been caught in an umbilical hernia and the incarcerated nodule has involved the umbilical peritoneum. In one case at least the umbilical cancer was secondary to a malignant growth of the gall-bladder.

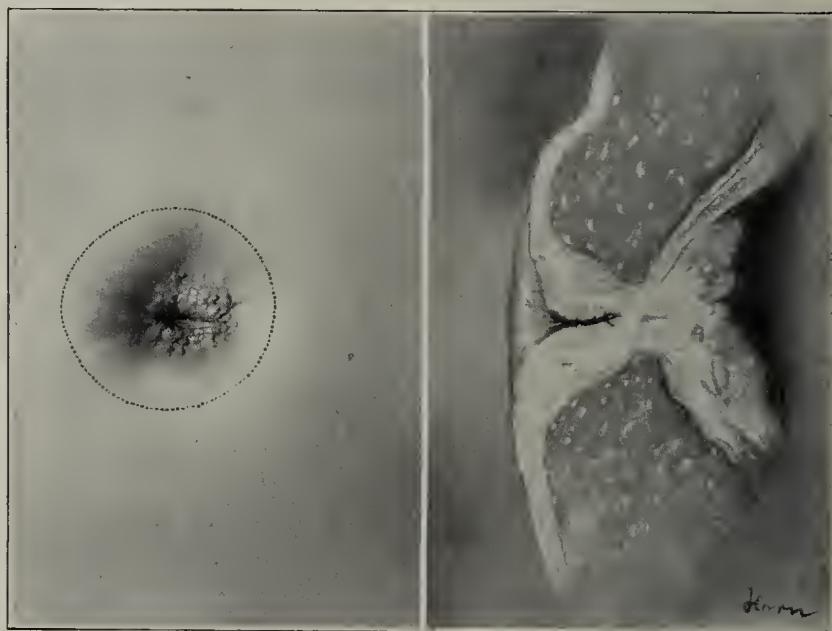


Fig. 5.—Adenocarcinoma of the umbilicus. The umbilicus looks very much like an inverted carcinomatous nipple. The margins present a fine nodular appearance. The dotted line indicates the limits of the induration. On the right is a longitudinal incision through the umbilicus. There is much thickening due to carcinomatous infiltration. The peritoneum beneath the umbilicus was free from adhesions.

Tisserand¹⁷ saw a woman, 54 years of age, who had been suffering from pain in the umbilical region for five months. The umbilicus was very red, slightly painful and indurated. An exploratory operation was performed and the patient died suddenly on the tenth day. Cancer of the gall-bladder was found. This viscus also contained gall-stones. The glands along the suspensory ligament to the umbilicus looked like beads. No trace of cancer was detected in any other organ.

In my last case the umbilical cancer was secondary to cancer of the gall-bladder.

In the cases in which the patient remains alive for a long period, or in which the abdominal growth is a rapid one, the gastric cancer may break through and an abscess develops usually between the liver, stomach, transverse colon and lateral abdominal wall. This abscess may find

17. Tisserand: A propos de deux cas de cancer secondaire de l'ombilic, La Loire méd., 1906. xxv. 131.

its way to the umbilical opening and form a permanent fistula. In those cases in which the stomach has become adherent to and involves the umbilicus by continuity the growth may be very rapid. There is first the thickening at the umbilicus and the overlying skin becomes fixed. Next there may be some reddening, fever, fluctuation and the physician or surgeon, thinking he is dealing with an abscess, opens it. A small amount of bloody serous fluid escapes; later particles of food may be detected. The growth occasionally wells up out of the fistulous tract, forming a cauliflower-like mass and the surrounding skin becomes markedly excoriated. Such a termination, however, is not common.

In the specimen sent me by Dr. Haggard, of Nashville, the umbilicus, apart from being much larger than usual and being markedly indurated, shows little change. The umbilicus in my first case was moist, and had little granular projections springing from it. In my second case

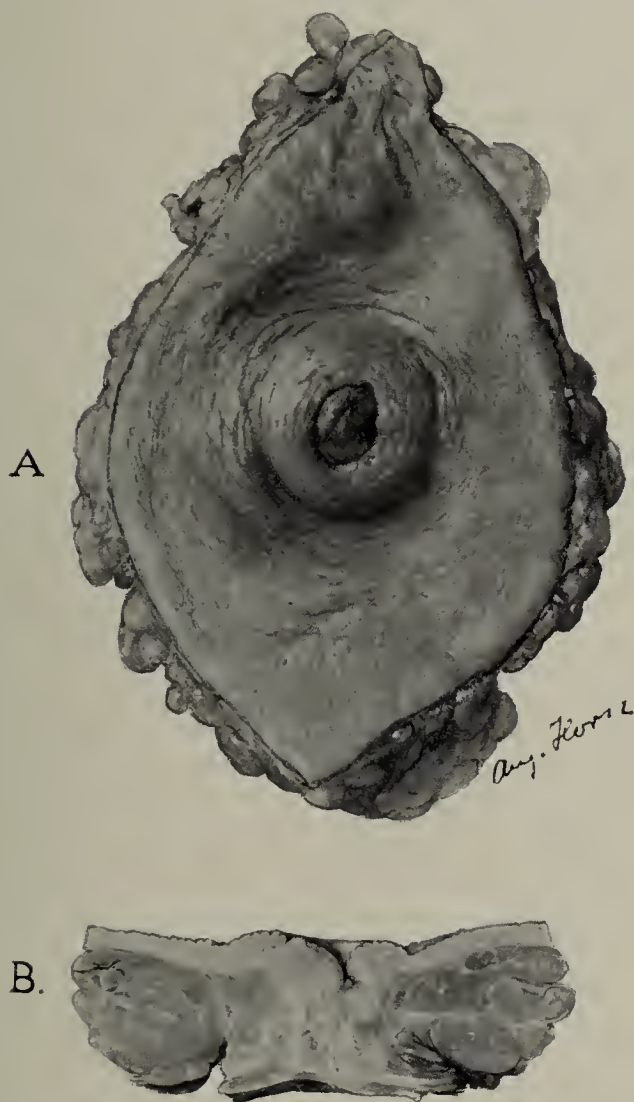


Fig. 6.—Appearance of the carcinomatous umbilicus after removal. Natural size. Path. No. 14968. A. The parts are slightly distorted from the action of the hardening fluid and the umbilicus comes out more prominently than it really did in the patient. There is, however, a slight unfolding of the umbilicus and one part seems somewhat raised. The umbilicus itself, however, was perfectly intact. B. A transverse section through the umbilicus. The half to the left is more prominent and represents the elevation noted in the umbilical depression. The surface, however, is intact. There is an increase in the amount of connective tissue, but no evidence of any definite nodule. Histologic examination showed that this area was everywhere infiltrated with carcinomatous glands.

the umbilicus was only slightly enlarged and the thickening could not be detected until the umbilicus was lifted up between the fingers. In my first case I removed the umbilicus thinking that it was the seat of a primary growth. In my second case it was removed on account of the severe pain experienced by the patient.

From what I have said, then, it is evident that there are two very important clinical factors to be considered. If an umbilical nodule be detected in a middle-aged per-

son, the condition of the abdominal organs must at once be most thoroughly investigated. If moderate or marked indigestion exists cancer of the stomach may be suspected. If frequent jaundice has been present the possibility of cancer of the gall-bladder following gall-stones may be thought of as the causative factor. Marked intestinal symptoms will naturally suggest a growth in the small or large intestine, and a pelvic examination will tend to exclude or confirm the probability that the uterus or ovaries may be responsible for the umbilical growth.

The last case came under my observation a few weeks ago after my attention had been especially directed to this subject. The typical history of gall-stones coupled with the non-inflammatory umbilical thickening at once suggested carcinoma and I made a provisional diagnosis of cancer of the stomach or gall-bladder associated with gall-stones and interpreted the umbilical growth as a secondary manifestation. At operation I found gall-stones, cancer of the gall-bladder with involvement of the periportal lymph glands, and small metastases in the lesser omentum; histologic examination also revealed the presence of a secondary adenocarcinomatous growth at the umbilicus.

The second point this study brings out strongly is the futility of removing the umbilicus when the primary growth is in the abdomen. If one can positively say that cancer of an abdominal organ exists, removal of the umbilical growth is of little value because the disease is already too wide-spread to permit of total eradication. On the other hand, in some of the cases the symptoms are so obscure that a diagnosis cannot be ventured until an exploratory operation has been performed; and again, in cases such as my last one the chief pain is referred to the navel region and removal of the umbilicus is followed temporarily by comfort.

SECONDARY ADENOCARCINOMA OF THE UMBILICUS; ILLUSTRATIVE CASES

CASE 1 (Path. No. 15,029).—The specimen sent me by Dr. Haggard of Nashville, Tenn., in April, 1910, consists of the umbilicus with a good deal of surrounding tissue. The entire specimen measures 10 cm. in length, 7 cm. in breadth. The umbilicus is 2.5 cm. across and is covered with skin. It presents a rather uneven, nodular surface, and is much more prominent than usual, having welled up in the center (Fig. 3). There is, however, no evidence of ulceration at any point. On section the distance between the umbilicus and the peritoneal surface is 2 cm. The tissues look fibrous and in the vicinity of the umbilicus show infiltration apparently with fibrous tissue. At one point is an area of what looks like localized fibrous thickening 2.5 cm. in diameter. The adipose tissue has been almost entirely replaced at this point.

Histologic Examination.—The squamous epithelium is intact and there is pigmentation in the deeper layers, suggesting that the specimen has come from a colored patient. The tissue immediately beneath the skin in some places is normal; at other points it shows some small, round-cell infiltration. Scattered everywhere throughout the thickened fibrous tissue are glands. Some of them are small and round, others elongated or tubular; others are dilated. The glands are lined with cylindrical or cuboidal epithelium which in most places is one layer in thickness. The nuclei of the epithelial cells are for the most part oval and stain uniformly. A few of the epithelial cells have very large and deeply staining nuclei. Where the glands are dilated the epithelium tends to become cuboidal. At other points the glands are exceedingly abundant, are undergoing disintegration and are filled with mucus. In some places the epithelium is several layers in thickness. Here and there gland epithelium has proliferated to such an extent that new glands are being formed. The growth is

undoubtedly a carcinoma of a glandular type and similar to that originating either in the stomach or intestine.

CASE 2.—Secondary carcinoma of the umbilicus; metastases in the right inguinal glands. Mr. G., 42 years of age, was seen in consultation Aug. 30, 1904. The patient was well nourished, and complained of a discharge from the umbilicus. Six weeks before he was struck in the abdomen with a shoe and the umbilicus commenced to discharge three weeks later. The umbilicus itself presented a granular appearance (Fig. 5) and the tissue surrounding it was indurated. The patient had had dyspepsia for years; also pain in the lower abdomen over the appendix. He was admitted to the Church Home. Under anesthesia the inguinal glands were carefully palpated. A definite enlargement was found in the right side. An incision 10 cm. in length was made and the inguinal glands removed, together with the surrounding fat. I then made a long elliptical incision around the umbilicus and removed the umbilical tumor, giving the hardened area a wide berth. The growth at the umbilicus closely resembled a retracted nipple. The patient took the anesthetic badly. Consequently I could not make as thorough an abdominal exploration as desired. With the finger carried in all directions I was unable to detect any thickening.

Histologic Examination (Path. No. 7729).—The umbilical growth proved to be a typical adenocarcinoma. The squamous epithelium in many places was normal, but along the edge of the growth it was impossible to distinguish between the cells of the adenocarcinoma and those of the squamous epithelium. There was as yet little breaking down. The growth in the inguinal glands macroscopically looked like cancer (Fig. 4). On histologic examination it presented exactly the same pattern as that noted at the umbilicus.

On Jan. 25, 1905, the patient was in fairly good health. He still had considerable constipation, however. He also had great difficulty in defecation. February 24, a firm globular mass fully 10 cm. in diameter occupied the middle of the abdomen and the left inguinal glands were considerably enlarged. The umbilical growth was undoubtedly secondary to the intestinal cancer. In May, 1905, I again saw the patient. His bowels had not moved for ten days and he was so emaciated that one would hardly recognize him. The abdominal nodules were everywhere palpable. He died a few days later.

CASE 3.—Adenocarcinoma of the umbilicus secondary to carcinoma of the gall-bladder. Mrs. B., aged 58, was seen in consultation with Dr. George L. Wilkins and admitted to the Church Home and Infirmary, April 24, 1910. The patient complained of an "umbilical nodule and of gall-stones." Her past history was negative. The menopause had occurred at 50. The patient had had five children. The first and last labors were instrumental.

The patient showed a slight bulging at the umbilicus on standing. This was painful when the clothes rubbed against it. It was noticed first in December, 1909, that is, about four months before examination. For some months the patient suffered at intervals with pain in the region of the gall-bladder and had been jaundiced. The pain radiated to the back and to the right shoulder. At the time of examination there was some tenderness in the gall-bladder region. She suffered from the presence of gas and from constipation. There had been no clay-colored stools. The heart and lungs were normal. The urine was practically normal.

From the history and general condition a provisional diagnosis was made of either cancer of the stomach or of the gall-bladder, associated with a secondary nodule at the umbilicus. On examination of the umbilicus there was just a slight rolling out, but nothing to suggest a nodule until one picked the umbilicus up between the fingers, when marked sensitiveness became apparent (Fig. 6).

Operation.—April 25, 1910, on making a right rectus incision I at once encountered little nodules in the lesser omentum. The gall-bladder contained numerous stones and also a new growth. The new growth was firm and had extended to the lymph-glands around the portal vein. One of these was over 3 cm. in diameter. We were dealing with a carcinoma of the gall-bladder, together with metastases in

the lesser omentum and the umbilicus. On account of the marked involvement of the lymph-glands complete removal of the primary growth was impossible. As the patient had had a great deal of pain in the umbilicus, this was removed. The inner or peritoneal surface of the umbilicus was free from adhesions. The patient made a good temporary recovery and was discharged May 9, 1910.

Pathologic Examination (Path. No. 14968).—The specimen consists of the umbilicus and surrounding skin. It is 7 cm. in length, 5 cm. in breadth. The umbilicus is slightly prominent. It is commencing to unfold a little as seen in Fig. 6. It was not quite so prominent, however, in the fresh state. The nodule could be readily felt on lifting the umbilicus up with the fingers. It appeared to be about 1 cm. or more in diameter. In the hardened specimen the tissue was contracted, bringing the effect out more prominently. The skin was everywhere intact. The peritoneal surface was slightly puckered, but was free from adhesions. On section of the umbilicus the tissue looked fibrous and in its middle portion was what appeared to be a little area of hemorrhage about 2 mm. in diameter. At first sight one would not for a moment suspect the presence of carcinoma.

Histologic Examination.—The squamous epithelium is intact and immediately beneath it in a few places are some sweat-glands. Approaching the peritoneum colonies of glands are found closely packed together with very little connective tissue between them. The gland epithelium is for the most part one layer in thickness. In some places it is cuboidal, at other points cylindrical, and there are very minute glands. The nuclei of the epithelial cells stain uniformly, but vary considerably in size. In some places the epithelial cells seem to have a tendency to be arranged in single rows. The growth is without doubt a carcinoma. The small metastatic nodules found in the lesser omentum in the neighborhood of the gall-bladder present a precisely similar appearance. We are undoubtedly dealing with a primary carcinoma of the gall-bladder, involving the lymphatics around the portal vein. There have been metastases in the lesser omentum and also involvement of the umbilicus.

3 West Preston Street.

ABSTRACT OF DISCUSSION

DR. W. D. HAGGARD, Nashville, Tenn.: The specimen which I sent to Dr. Cullen was removed in 1903. Histologic examination proved it to be a case of primary carcinoma of the umbilicus. The man, 56 years old, had a hard mass at the umbilicus, for which I advised excision. He delayed the operation; acute symptoms of cholelithiasis set in, which he interpreted as coming from the umbilicus; he then asked for an operation. I excised the umbilicus circularly and met with considerable difficulty in closing the wound, because it pulled widely apart in all directions. I was obliged to use Bartlett's wire filigree to effect closure. At the time of operation the gall-bladder contained stones, which were removed, and, as we had so much difficulty in closing the opening, we drained the gall-bladder through the same incision. After five or six months the man had considerable jaundice, which I attributed to the contraction of the scar making traction on the gall-bladder and partially occluding the ducts. He died after seven months from cholemia. The necropsy failed to disclose any other malignant growth in the abdomen.

I had hoped that Dr. Cullen would be able to take up the other pathologic conditions of the umbilicus besides carcinoma. I have had two cases of protrusion of the umbilicus in generalized peritonitis, with simple incision of the umbilicus, for drainage, with cure. One of the patients was a woman, who had had a ruptured appendix, and whom I saw on the eighteenth day. She manifested symptoms of a general peritonitis, with free fluid of the abdomen. The umbilicus presented a pouched-out protrusion. The skin was reddened and thinned. I incised the umbilicus without an anesthetic, evacuated several quarts of fluid, and the patient recovered, which was rather noteworthy because of the very severe general peritonitis. She would not have stood a formal operation. I do not believe there was anything else to do than simply incise the

point which Nature had indicated for drainage. This experience was repeated in the second case, the patient being a girl, 13 years of age, who, in the second week of an attack of appendicitis, had a red protrusion of the umbilicus, with signs of free fluid, somewhat as in the first case. We incised the umbilicus, evacuated two quarts of fluid, and she recovered.

DR. THOMAS S. CULLEN, Baltimore: Dr. Haggard recently sent me a report of a case in which the purulent peritoneal fluid had escaped through the umbilicus. In reviewing the literature on diseases of the umbilicus I was particularly interested to see the large number of cases reported in which a purulent peritonitis had been evacuated spontaneously through the umbilicus. This was frequently the case in children. In adults, however, it is rare for the umbilicus to give way.

In the short time at my disposal it has been impossible to deal with the subject in full and I have only discussed it from two standpoints. Dermoid cysts of the umbilicus have, from time to time, been reported, but on carefully reading the detailed histories of these cases it seems perfectly clear that in the majority of instances the author was not dealing with a dermoid cyst, but with an umbilical concretion. On picking these concretions apart small pieces of wool or hair and occasionally particles of stone have been detected. The substance in a large measure depends on the occupation of the patient. The outer surface of the concretion in the majority of cases has presented a pearly appearance. This was due to a covering with various layers of exfoliated squamous epithelium. When as a result of irritation by the concretions the umbilicus becomes inflamed, the umbilical opening becomes smaller and smaller, on account of the surrounding inflammation; finally nothing but a pin-point opening remains and later often there is an escape of pus. With the application of poultices or following an incision and escape of the concretion the inflammatory condition disappears.

In some cases in which the omphalomesenteric duct has remained open and is recognized as a very small fistulous tract, roundworms may escape. In several cases from forty to fifty of these worms have come away, and occasionally a tapeworm has made its appearance on the abdomen.

Several other interesting cases are reported in which gallstones have been evacuated through the umbilical opening and in a few instances small hydatid cysts have escaped in this way. Dr. Alexander Hugh Ferguson, Chicago, told me of such a case that came under his observation.

In cases of primary carcinoma of the stomach the growth may travel toward the under surface of the liver, pass along the lymphatics of the suspensory ligament and reach the umbilicus. The umbilical growth consequently lies extraperitoneal between the peritoneum and fascia.

found it necessary to operate in two stages. After the first operation the common bile-duct was cut off and implanted into the duodenum well below the opening of the pancreatic duct. This was done by direct implantation, using a method similar to one described by Dr. W. J. Mayo some years ago. Gastrojejunostomy was done at this time, also resection of the stomach.

At the second operation, the duodenum and the head of the pancreas were removed and the remaining tail was planted into a loop of intestine. The second stage of the operation was done from two to three weeks after the first. At the second operation it was invariably found that the common bile-duct, which had been implanted at the previous operation, was now distended to the size of a man's finger and in some cases even larger, and the bile was dammed back at low pressure. The common bile-duct and the two hepatic ducts presented the appearance of being simple extensions of the gall-bladder. In the first case observed it was taken for granted that stenosis had occurred. When the second case was observed I cut open the duodenum, exposing the opening of the implanted duct, when it was found that the opening was large enough to admit a lead-pencil easily and that the bile was simply dammed back in the duct by the intra-intestinal pressure. As our experiments went on we observed that this condition was constant and present in every case. Five dogs with such a condition were observed later for varying periods and the specimens finally removed and preserved. One of the best specimens shows the bile-duct as large as a man's little finger and with walls almost as thick as an intestine. After observing these things it seemed quite probable that the bile-tract being permanently dilated in this manner might later prove to be a very serious thing as regards the future integrity of the liver. The only conclusions to be reached from the study of these cases, and from the specimens, was that the normal intra-intestinal pressure, when brought to bear directly within the end of the implanted duct, proved more than the strength of the frail bile-duct could withstand; consequently they kept dilating until Nature's law of compensation came to the rescue with a thickened duct wall, and prevented further distention, but not until the distention was sufficient practically to make an intestinal diverticulum of the bile-duct, thus exposing the liver to infection.

This seemed to me a most serious matter, so I set about to devise a plan which would prevent the intra-intestinal pressure being brought to bear directly from within the duct. The first step was to dissect the duodenum and see how Nature had planned this matter. I found that the common bile-duct first penetrated the serous and muscular coats of the duodenum and then passed just under the mucous membrane for approximately three-quarters of an inch before it penetrated the mucous membrane. I found also that the ureters entered the bladder in just such a way. It was readily seen that in these organs the intra-intestinal and intravesical pressure, instead of being brought to bear from within the duct, was brought to bear in a much larger area on the side of the duct, thus making a perfect valve. The next question that arose was: Is it possible to duplicate this artificially? It was found not practicable to pass forceps between the layers of the intestine for the purpose of drawing the duct through. After thinking the problem over for some time, I remembered that during the course of a gastro-enterostomy when the serous and muscular coats are cut and the submucous

PHYSIOLOGIC IMPLANTATION OF THE SEVERED URETER OR COMMON BILE-DUCT INTO THE INTESTINE *

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PORTLAND, ORE.

At the 1909 meeting of the Southern Surgical and Gynecological Association at Hot Springs, Va., I reported a series of experiments on dogs in which various sections of the pancreas had been made and the remaining pancreas had been implanted into the intestine.

In the operation for the removal of the head of the pancreas, it was found necessary to transplant the common bile-duct into the intestine lower down, also to connect the stomach with the intestine lower down; and later the pancreatic implantation was done. In these operations of pancreatectomy and duodenectomy we

* Read in the Section on Surgery of the American Medical Association at the Sixty-First Annual Session, at St. Louis, June, 1910.

coat dissected, the mucous membrane pouts out between the cut edges of the wound, making of it a hernia. The following method was therefore devised.

METHOD OF PROCEDURE

First, the duct is located and ligated with linen or silk. It is then cut in two above the ligature and the edges caught and held with mosquito forceps while one wall of the duct is split down with a pair of scissors, as shown in Fig. 1, *a*. A linen suture is now passed through the split end of the duct so as to include about one-half of



Fig. 1.—Preparing the duct for implantation into the intestine; *a*, splitting the duct to provide for drainage and tying the suture around half of the duct; *b*, tying suture around split duct; *c*, split duct ready for insertion.

it, and tied (Fig. 1, *a*). The linen thread is then thrown around the other half and tied (Fig. 1, *b*). The loose ends are then threaded into two needles. By this method the full strength of the duct is retained for traction, while the opening is maintained by the split (Fig. 1, *c*). The end of the duct is now wrapped with gauze while the intestine is prepared for its reception, which is done as follows:

The part of the intestine desired is picked up and an incision made down through the peritoneal and muscular coats, including submucous tissue until the mucous membrane pouts out through the incision (Fig. 2). This incision should be about one inch long or more. Second, five or six sutures are passed which pick up the peritoneal and muscular coats on each side of the incision. The suture at the upper end of the incision is tied as a control suture. The intermediate intestinal sutures are lifted up on the flat handle of an instrument as they cross the incision. Now the intestine is brought down close to the end of the split duct and the two needles carrying the threads (traction sutures) on the end of the duct are passed beneath the four or five intestinal sutures and through the stab wound in the mucous membrane into the intestinal lumen and out through the intestinal wall three-quarters of an inch farther along the intestine, and one-eighth to one-quarter inch apart. By making tension on these threads and at the same time pushing the intestine toward the duct, the duct is drawn beneath the intestinal sutures through the stab wound into the intestinal lumen, when the two ends of the threads on the duct are tied on the outside, thus anchoring the end of the duct on the inside of the intestine at this point (Fig. 3). The intestinal sutures are then tied,

producing the result shown in Figure 4. After this operation the duct lies just beneath the mucous membrane, which has been loosened for approximately three-quarters of an inch of its course, so that it slides easily in its new channel. It is therefore necessary to tack the ureter to the peritoneum of the intestine near its point of entrance by two or three fine linen or silk sutures. Care should be used to take only the outer coat of the ureter in the bite of these sutures. Thus practically all the steps of the operation are completed before the intestinal mucosa is penetrated and no sutures penetrate the lumen of ureter. The traction suture at the end of the ureter within the intestine and the two or three anchor sutures fastening the duct to the intestinal peritoneum are the only means of retaining the duct in place. The same intra-intestinal force which later prevents regurgitation into the ureter now prevents the intestinal contents from leaking back by the loosely implanted ureter.

To prove the mechanical correctness of the theory of this operation, make a hole in the side of a rubber bag; insert a rubber tube and cement it; cement a flap of thin rubber over the end of the tube (Fig. 5, *a*); connect a fountain syringe filled with fluid with the tube and fill the bag (Fig. 5). If the syringe is now disconnected it will be found that no leakage from the tube takes place (Fig. 6).

While the theory of this operation is in harmony with Nature's method of the implantation of ducts, and while we are able to prove it mechanically, the physiologic and reparative processes found in surgery are so complex that we can never be certain of results from a given procedure until it has been proven experimentally and clinically. Experiments have therefore been made by the direct and indirect methods of transplanting both the bile-duct and ureters as follows:

PHYSIOLOGIC IMPLANTATION OF THE BILE-DUCT

After having incidentally made the observations noted above, namely, that the bile-duct always dilates as a



Fig. 2.—Incising peritoneal and muscular coats of intestine and freeing the mucous membrane from the muscular coat.

result of intra-intestinal pressure after it has been implanted into the intestine by the direct method, four operations were performed on dogs by the method just described in which nothing was done but implantation of the common bile-duct. The results in this series were as follows:

One dog was killed with chloroform on the fourteenth day and one on the fifteenth day after operation. Both showed perfect valve action. The ducts were possibly a

little more distended than normal, owing to swelling from the traumatism of the operation, which had not yet entirely subsided. One dog was killed on the sixtieth day and another on the sixty-first day after operation. In both cases perfect results were found. There was no distention of the ducts above and a ridge in the mucous membrane plainly marked the site of the reimplanted duct in almost the exact manner seen in the duodenum where Nature has implanted the common duct.

After the last specimen of this kind had been removed and the marked difference between the physiologic and the direct method of implantation had been observed, the idea presented itself that the same thing should be applicable in the implantation of the ureter. On December 4 my assistants and I implanted the ureter in a dog by the above method minus the peritoneal sutures which attach the ureters to the outer surface of the intestine. On December 30 we performed a similar operation on another dog. On December 31 we implanted the opposite ureter of Dog 1. On January 1 and 2 we operated on four other dogs. On the evening of the 2d very cold weather set in and as we had no facilities for heating our rooms all of our dogs except the one operated on December 30 died of cold, including the one in which we implanted the second ureter. On this subject we did a necropsy with the following results: There was no enlargement of the kidney. The ureter was slightly dilated with some stenosis of the opening into the intestine. While this narrowing of the ureteral opening had not reached the point of obstruction or hydronephrosis, the indications were that these conditions would have ensued and the probable cause seemed to be that by not placing the peritoneal anchor sutures the ureter had slipped and drawn back somewhat into the submucous canal. The recently implanted kidney was in a perfectly healthy state, as were the kidneys of all the other dogs which died from the effects of cold weather. Late in February, when the weather was more favorable, we

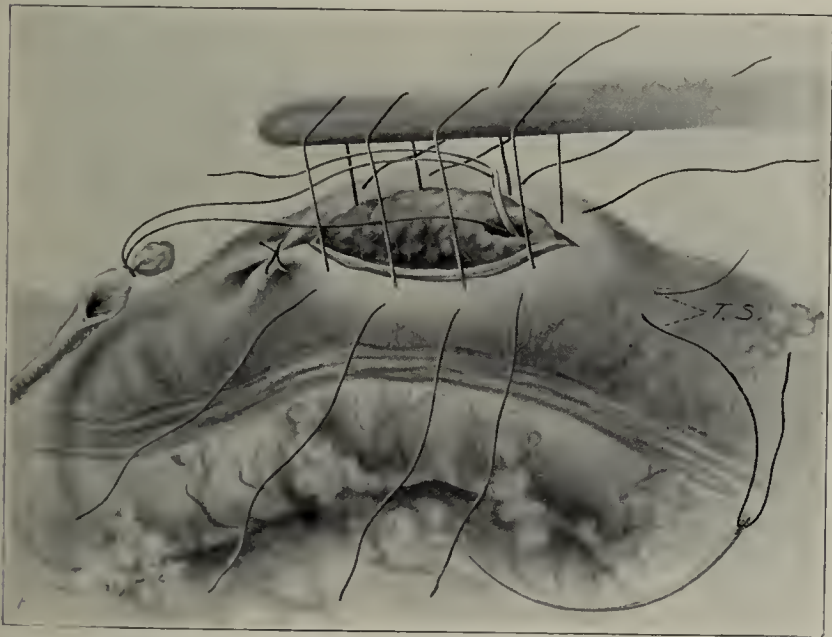


Fig. 3.—Sutures have been passed and duct is being drawn under the intestinal sutures through the stab wound in the mucous membrane.

took up our experimental work again, which I now report.

PHYSIOLOGIC IMPLANTATION OF THE URETER INTO THE LARGE INTESTINE OF THE DOG

Dog 1. Preoperative condition good. Operated on Dec. 30, 1909. Right ureter implanted into large intestine about 2 inches above ileocecal valve. Uninterrupted recovery. Diarrhea constantly present. Dog was killed with chloroform

May 16, 1910 (169 days after operation). Necropsy showed kidney normal. No dilatation of ureter or pelvis. Valve perfect. Kidney same size as other which had not been implanted.

Dog 2. Preoperative condition good. One ounce castor oil twenty-four hours previous to operation. Operated on Feb. 24, 1910. Left ureter implanted in colon about 8 inches above anus. Refused to eat for about a week after operation, then took food and steadily improved. Diarrhea constantly present. Dog was killed May 16 (eighty-one days after operation). Necropsy showed kidney of the implanted ureter decidedly smaller than the other and having an indurated point at its upper pole. A like point of induration was found in the other kidney. The intestine was clamped above and below

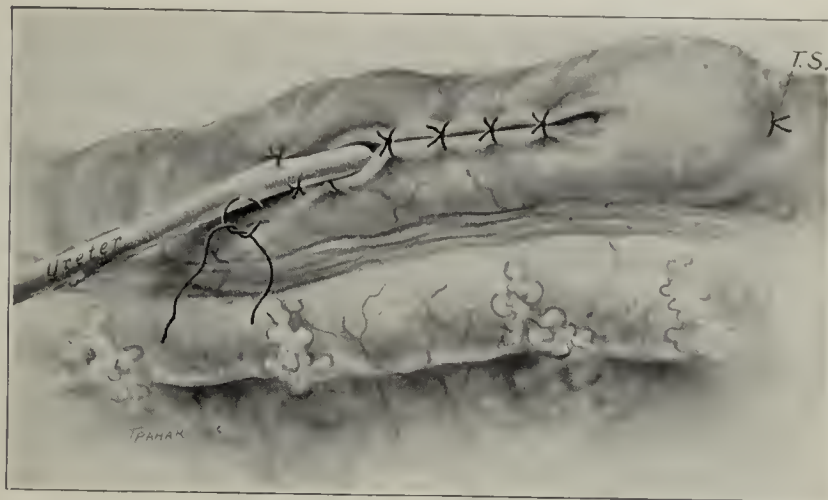


Fig. 4.—Duct has been implanted and anchored at its end inside intestine by tying traction suture T.S. Peritoneal sutures have been tied. Anchor sutures being placed to fasten duct to peritoneum.

the ureteral implantation, an incision was made in the ureter and fluid introduced into the intestine until it was dilated under pressure (Fig. 7). The nozzle was removed and no fluid returned through the ureter (Fig. 8). (Test used to prove efficiency of valve in other cases.) Pressure was made on intestine with the hand, and still not a drop of fluid returned through the ureter, showing that the valve acted perfectly. Both kidneys were split, exposing the pelves. The small kidney appeared as healthy as the other and its cortical substance as thick. There was no distention of the pelvis or of the ureter. A good-sized probe passed easily from the intestine up the ureter. We are at a loss to know whether this kidney was normally smaller than the other or whether this dog during the first week after operation when he refused to eat had a slight infection which he overcame. The perfection of the valve, the healthy kidney substance and the absence of dilatation led us to believe that it was a normally smaller kidney.

Dog 3. Preoperative condition good. One ounce castor oil twenty-four hours previous to operation. Operated on Feb. 24, 1910. Left ureter implanted into the large intestine about 8 inches above anus. Dog died March 3. Necropsy showed general peritonitis probably due to infection from faulty aseptic technique at operation. Specimen showed implantation perfect, no evidence of leakage, no obstruction and no distention of ureter.

Dog 4. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Operated on Feb. 25, 1910. Left ureter implanted into the rectum about 8 inches above the anus. Perfect recovery, with no clinical signs of trouble. Diarrhea constantly present. Dog was killed with chloroform on May 16 (80 days after operation). Necropsy showed the bladder firmly attached to the site of operation and to ureter for some distance out. These adhesions drew the ureter into a sharp kink, causing hydronephrosis with marked dilatation of the pelvis of the kidney. Urine clear and healthy. On opening the intestine and cutting the bladder adhesions the urine was squeezed out of the kidney and ureter in a distinct stream. The valve was perfect and a good-sized probe easily passed from the intestine up the ureter. Hydronephrosis had no relation to implantation, but seemed to have been caused by adhesion to the bladder.

Dog 5. Old dog, fat, condition poor. Two ounces castor oil twenty-four hours previous to operation. Operated on Feb. 25, 1910. A great deal of extraperitoneal fat was present, making it difficult to find ureter. Planted left ureter into the rectum about 8 inches above anus. Dog died March 10 (13 days after operation). Diarrhea had been constant up to time of death. Necropsy showed no dilatation of the implanted ureter. The valve was perfect. A probe passed easily from the intestine into the ureter. Kidney normal. There was no evidence of peritonitis and no cause could be assigned for the dog's death except his age and condition at the time of operation.



Fig. 5.—Filling with fluid rubber bag, in which pocket valve has been made; *a*, pocket valve. Arrows indicate direction of pressure.

Dog 6. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Operated on March 1, 1910. Left ureter implanted into the rectum about 8 inches above anus. Uninterrupted recovery. Diarrhea constantly present. Right ureter implanted on May 3. The anchor-stitches were forgotten. Uninterrupted recovery from operation. Appetite began to fail May 14 and dog looked sick, so he was killed with chloroform. On opening the abdomen a number of loops of intestine were found adherent around the point of the last implantation. On separating these loops from the rectum a space was found which connected directly with the intestine by a fistula and into which the ureter was emptying. The ureter had evidently been partially pulled out and the intestines had come to the rescue by covering in the leak. This kidney, the right one, was much congested, larger than the other and its ureter somewhat dilated and thickened. When the kidney was split the pelvis was found to be filled with pus. The left kidney, the ureter of which was implanted March 1 (seventy-five days before) was normal. Only a slight omental adhesion was present at the site of implantation and the ureter opened freely into the intestine, and was protected by a membranous valve. This case demonstrates the importance of placing the anchor sutures outside of the intestine.

Dog 7. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Operated on March 1. Left ureter implanted in rectum about 8 inches above anus. Dog died March 5. Necropsy showed that dog had pulled out stitches with his teeth and opened abdominal wound. Kidney and ureter normal. Probe passed easily into the intestine from the ureter. The end of the ureter which hung within the lumen of the intestine was dead but not

sloughed. Dog had died of peritonitis following the opening of the abdominal wound by his teeth.

Dog 8. Preoperative condition fair. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 2. Rectum was still filled with fecal matter. Left ureter implanted about 8 inches above anus. Dog made uninterrupted recovery. Diarrhea constantly present. Dog was killed with chloroform May 14 (72 days after operation). Necropsy showed slight omental adhesions at site of implantation of left ureter. Right and left kidney presented the same appearance. Both healthy. Implanted ureter the same size as normal one, with no distention. A decided ridge on the mucous membrane of the intestine marked the underlying ureter (Fig. 10). A small child's urethral catheter was easily inserted in the orifice and up the ureter. The valve action was perfect, the ureter running for more than one-half inch under the mucous membrane.

Dog 9. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 10. Left ureter implanted into the rectum about 8 inches above anus. Dog died March 13. General peritonitis. Necropsy showed kidney and ureter normal. Ureter open. No evidence of leakage at point of anastomosis. Probably death was due to a flaw in aseptic technic.

DIRECT IMPLANTATION OF THE URETER INTO THE LARGE INTESTINE OF THE DOG

Dog 10. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 10. Implanted right ureter into rectum about 8 inches above anus. Dog ate a little meat March 15 and had some appetite until March 20, when he refused food and died March 22. Necropsy showed general and extensive peritonitis. Kidney infected. Duet enlarged to some extent. No specimen removed, as tissues were very much infected.



Fig. 6.—Rubber bag filled. Fountain syringe disconnected. Valve closed by pressure of the fluid as indicated by arrows.

Dog 11. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 11. Right ureter implanted in rectum about 8 inches above anus. Dog died March 13. Necropsy showed general peritonitis. Kidney enlarged and contained pus. Ureter dilated to some extent. Condition at site of implantation seemed to indicate leakage.

Dog 12. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Implanted right ureter into rectum about 8 inches above anus. Dog died March 13. Necropsy showed general peritonitis. Ureter was

found pulled out, whether in manipulating the intestine at autopsy could not be determined.

Dog 13. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 16. Right ureter implanted into rectum about 8 inches above anus. Technic good. Dog ate a little meat March 18 and 19. March 20, condition not so good. Dog very dull for about a week, then condition improved and he made a slow recovery. Dog killed May 16 with chloroform (sixty-one day after operation). The dog was not in so good condition as when first operated on, and not in so good condition as the dogs which had recovered from the physiologic implantation. It was noticeable that this dog had no diarrhea after fourteen days. Necropsy showed month of implanted ureter wide open and ureter slightly distended. Kidney was atrophied to the size of a black walnut and the cortical substance had entirely disappeared, leaving nothing but the pyramids and the capsule. Dog had apparently recovered from the infection, but the secreting portion of the kidney had been destroyed, hence the absence of diarrhea after fourteen days. Peterson noticed this contracted kidney in subjects which had recovered from infection.

Dog 14. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 16. Right ureter implanted into rectum about 8 inches above anus. Technic good. Died March 20. Necropsy showed general peritonitis; duct was pulled out of intestine. Abdominal cavity filled with pus.

Dog 15. Preoperative condition good. Two ounces castor oil twenty-four hours previous to operation. Dog operated on March 17. Right ureter implanted into rectum about 8 inches above anus. Dog died March 20. Necropsy showed general peritonitis. Abdominal cavity filled with pus.

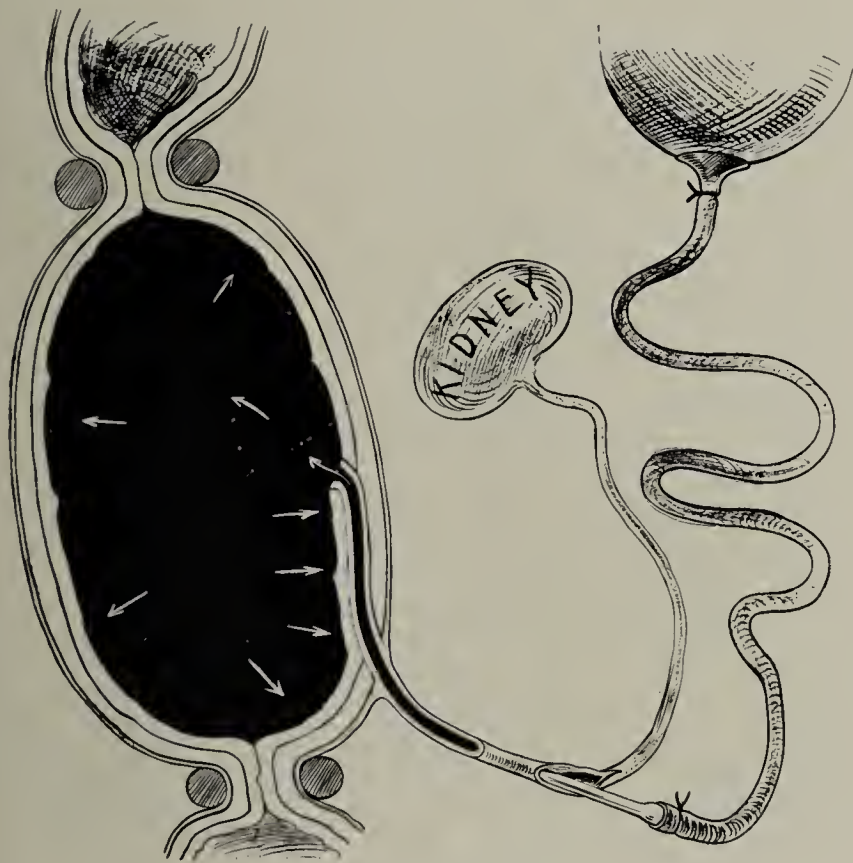


Fig. 7.—Filling with fluid a clamped section of intestine into which a ureter has been implanted by the physiologic method.

A SUMMARY OF EXPERIMENTS

In five dogs in which direct implantation of the bile-duct was done, all specimens showed marked dilatation of the duct without obstruction at the point of passage through the intestinal wall. Of four dogs in which the common bile-duct was implanted by the physiologic method, none showed dilatation of the duct. Of nine dogs in which physiologic implantation of the ureter into the large intestine was done, five recovered and were in good health 169 days, eighty-one days, eighty days, sev-

enty-five days and seventy-two days after operation, when they were killed with chloroform. One dog died on the thirteenth day without discoverable cause, the implantation being found perfect. One died of peritonitis due to the opening of his own wound with his teeth. Two died of general peritonitis which apparently resulted from faulty aseptic technic. Of these nine dogs, a second ureter was implanted in one, at which time the peritoneal anchor sutures were forgotten, with the result that the ureter partially drew out, made an abscess, but still connected with the intestine by a fistula. In this case

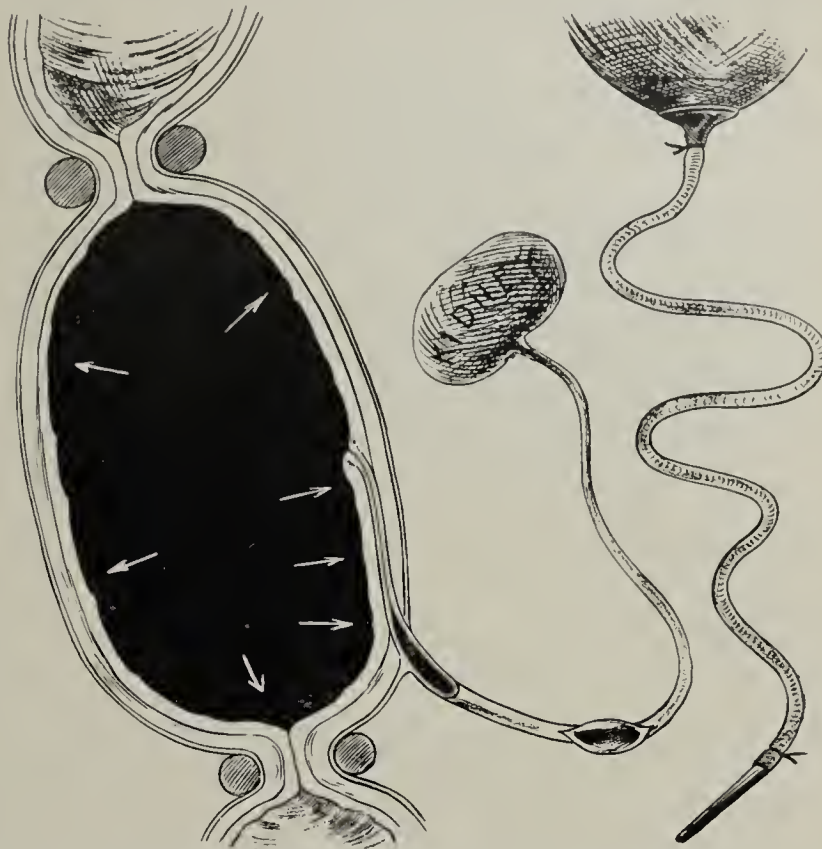


Fig. 8.—Physiologic valve closed by the withdrawal of the nozzle, entirely preventing regurgitation of fluid into the ureter.

the ureter was dilated and the pelvis of the kidney filled with pus, indicating the seriousness of omission of the anchor sutures. In one case the ureter in crossing through the peritoneal cavity to the intestine had been caught by an adhesion which kinked the ureter and produced hydronephrosis and distention of the ureter above this point. No distention existed below this point, and when the adhesion was broken the urine from the hydronephrotic kidney was easily forced out through the ureter into the intestine in a stream. The mechanical test shown in Figs. 7 and 8 proved that this valve was perfect, and the fact that the urine in the kidney and ureter was clear proved there had been no ascending infection. Therefore, in not one of the nine cases in which the complete operation as described in this paper was performed did ascending infection take place.

Of the six dogs which were operated on under exactly the same conditions but in which direct implantation of the ureter was done, five died within a few days after the operation from either peritonitis or ascending infection. The surviving dog was fairly healthy after the lapse of sixty-one days, when it was found that all of the secreting portion of the kidney had been destroyed, leaving nothing but a shrunken bunch of connective tissue and the pyramids, notwithstanding the fact that the ureter, as it entered the intestine, was patulous. This last series of direct implantations compare favorably with all of the other experiments which have been made, as will be shown by the statistics which will be given later.

We must admit that the mortality rate, even of the physiologic implantation, is much too large as applied

to patients; but when our work is compared with the work which has been done by other methods there is much encouragement in this report. After we were fairly launched into the work, we secured a complete bibliography and abstract of the principal articles. The literature of this subject is voluminous. More than two hundred and forty articles have been written on the subject. Many methods have been used. The literature has been repeatedly summarized and reviewed; consequently we will not review it in this paper except to quote the conclusions of a few of our predecessors, and will not describe any of the methods. Few subjects have

occurred in some of the above-mentioned cases. However, it has been shown that for routine usage, the present methods for simple ureteral implantation are inadequate and the operation is not likely to become popular.

The Maydl operation is attended with much better success. Peterson collected reports of thirty-six operations performed on patients by the Maydl method, which uses a part of the bladder with the ureter. Five deaths occurred, making a Maydl mortality of 14 per cent. Of those recovering from the immediate effects of the operation, two died within fifteen months of pyelonephritis, bringing the mortality up to 19 per cent. The sphincteric control of the ureter over the urine was mentioned as satisfactory in twenty-four out of twenty-nine cases, and Peterson concludes that of all the operations yet devised the Maydl method is the most satisfactory. Steinke also reviewed the work which had been done on the dog. After summing up the experiments which had been done on dogs, giving them in more or less detail, he says that the literature reports 134 bilateral and 77 unilateral implantations. Of the unilateral type there were 26 recoveries and 51 deaths, thus giving a mortality of 66 per cent. Most of the deaths were from peritonitis or a complication of peritonitis and pyelonephritis. A number of the surviving dogs were killed later and in every instance pyelonephritis or its results were found. Of the bilateral cases there were 117 deaths out of 134, or a mortality of over 87 per cent. Nine of the seventeen successful cases showed pyelonephritis later on (one or both sides), from which the animals would probably have died, and thereby raised the percentage of mortality still higher, if they had not been killed earlier. The faults in most instances were from peritonitis, pyelonephritis or an association of the two. Other causes of death were hydronephrosis, uremia, and hemorrhage. Most of the dogs did not live long enough to develop stenosis of the ureteral orifice. If those animals which recovered had been examined later, stenosis of the ureteral orifice with hydroureter and hydronephrosis or pyelonephritis would probably have been found. Martin's thirty-four cases are not included in

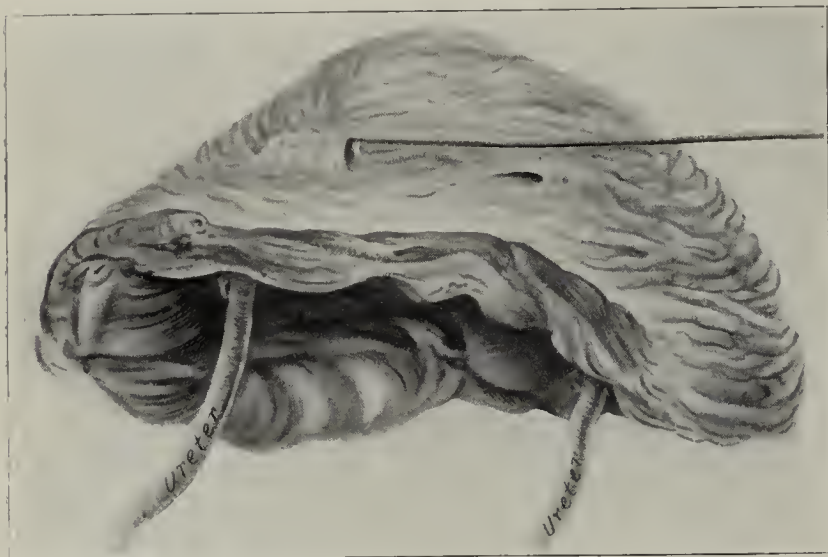


Fig. 9.—Probe in membranous valve at the mouth of the ureter in a fresh specimen of a dog's bladder.

called out more experimental work and there is no field which has been more baffling and discouraging. This is especially true of the experimental work on dogs; in fact, most reviewers have reached the conclusion that all implantations of the ureter into the large intestine in dogs, if not followed immediately by sepsis or pyelonephrosis, later develop ascending infection or stenosis. Operations on patients have been much more successful, if we are to accept the records of the literature. This is especially true of those cases in which the Maydl operation of transplanting a portion of the bladder with the ureter has been performed, but as this operation is not often applicable where we need it most, namely, in carcinoma of the bladder, we must look still farther for a successful method of implantation.

Carl Steinke,¹ in an article written in 1909, has given the most complete summary of all the literature concerning operations on patients up to that time. His conclusions are as follows:

Of the thirty-five cases recorded above [in his article], two have no statement as to whether the patient lived after the operation. However, fifteen are reported as recovering and eighteen resulted fatally, making a general mortality of about 54.5 per cent. Two cases died of tuberculosis of other organs, thus making the mortality from the operation and its effects 55 per cent. Of the fifteen cases reported as living, two are unilateral implantations and the unilateral cases are really no test, as there still remains one good kidney to carry on the function. This leaves thirteen of the twenty-seven bilateral cases reported as living after four weeks or more, making a mortality of 55.5 per cent. These results show that under certain conditions the ureter may be transplanted successfully. The ultimate results are, however, uncertain, and fatality is apt to occur under the best circumstances.

Experiments on dogs have proved that it is possible for the kidney to recover from the pyelitis, and this may have

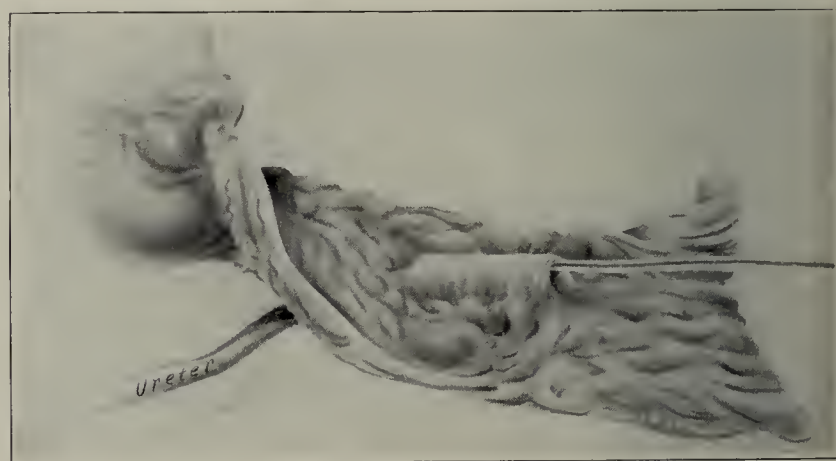


Fig. 10.—Probe inserted into the membranous valve protecting the mouth of a ureter which has been implanted into the large intestine of a dog seventy-two days.

the above summary, as he did not state in each case whether the unilateral or bilateral method was employed. There were thirty-one deaths, the cause being about the same as in the other experiments. These, if added, would raise the mortality still higher. In contrasting the results on human beings with those on dogs, it has been proved that the difficulties to be met are much greater in the case of dogs and the mortality is much higher. Steinke's reasons for this are: (1) the dog's ureter is much smaller; (2) the large bowel of the dog

1. Steinke, Carl: Univ. Penn. Med. Bull., 1909, xxii, 110.

is more rigid and the musculature greater, thus causing the stitches to pull out; (3) asepsis is more difficult to obtain; (4) the bacteria of the dog's intestine may be more virulent, thus causing more severe peritonitis. Steinke concludes this article as follows:

In view of the generally discouraging results from the records of the operations on human beings and from the records of experimental work, we feel that specific conclusions are difficult to draw and would be of doubtful value. We would emphasize again the particular nature of the problem and the fact that so many difficulties must be met in every attempt. A careful consideration of the summary of surgical work on the anastomosis of the ureter with the intestine leads, we think, to the conclusion that the problem is one of physiologic and surgical mechanics, and as such should remain open to solution.

Dr. Reuben Peterson of Ann Arbor, who has probably done more experimental work along this line than any other man, in an article written in 1900, after reviewing the literature and making statistics similar to those given by Steinke, reaches the conclusion that the best technic is that requiring the least amount of suturing of the ureters themselves. Connell, who has done a great deal along this line, believes that all cases of ureteral implantations into the rectum in dogs ends with death either immediately or later of ascending infection.

CONCLUSION

After going over all the literature which has been written, I find that the patients who have had the ureters transplanted by direct methods have shown 55 per cent. mortality. Dogs operated on by the same method have shown a mortality varying from 66 per cent. to 100 per cent. The former usually represents immediate operative mortality. A large percentage of this mortality, both in patients and in dogs, has been due to ascending infection. The mortality is very much greater in dogs than in human beings and some who have investigated the subject are of the opinion that all animals in which the ureter has been transplanted sooner or later develop ascending infection and other complications. Our experiments with the direct implantation are in exact accord with all those who have preceded us. The experience with physiologic implantation is much better. Ascending infection seems to be nearly eliminated as a danger, and if the physiologic method should prove to be as much better than the direct method in patients as it has in dogs it seems safe to assume that the mortality in the human being should be reduced to a point which would make the operation justifiable and would thereby save the lives of many patients suffering from carcinoma of the bladder who now die for want of proper methods of dealing with the ureter.

667 Gilsan Street.

ABSTRACT OF DISCUSSION

DR. ARTHUR G. SULLIVAN, Madison, Wis.: I have been carrying on similar work for a year or eighteen months. While Dr. Coffey's work has dealt with both the ureter and the bile-duct, mine has had to do chiefly with the bile-duct. Ureteral work is a matter of present endeavor. Dr. Coffey's aim was to make a physiologic implantation of the ureter or bile-duct. My work had the same thing in view, but also took in the reconstruction of these passages after artificial destruction. Dogs were used for my experiments, and the technic employed was about as follows: The common duct was ligated high up and cut across. A cholecystectomy was almost invariably done at the same time. A rubber tube was then inserted into the ductus hepaticus and brought down on the gastrohepatic ligament on its anterior surface. At the level

of the ampulla of Vater, a slight incision was made in the duodenum, and the tube was pushed in, so that it projected into the lumen of the intestine for two inches. At the point where the rubber tube penetrated the bowel wall, the intestine was repaired, so that the incision closely encircled the rubber tube. A suitable area of omentum was traumatized lightly with a dry sponge. After the omentum has been approximated, it was sutured so as to form a roof over the tube. About three weeks later, I opened the dog's duodenum, grasped the tube with thumb forceps and drew it out. The case with which the tube slipped out suggested that the peristaltic action of the intestine could well supplant the second operative procedure. Commonly a small sponge was attached to the end of the tube and the same technic was employed, so that the peristaltic tug withdrew the tube as soon as the restraining ligatures were absorbed. Seven or eight operations like this were done, using tubes and sponges, and the animals all did very well. I killed all the animals—the oldest four and one-half months, and the youngest four weeks after the operation, and the results in all were good. On analyzing the steps of the operation, it is at once apparent that the surgical details are all more or less accepted. In one dog I inserted a rubber tube, with the idea of keeping it there permanently, and consequently the tube did not have a sponge-tipped end. I had to operate because of a strangulated hernia fourteen months later, and I found that the tube had been passed and that the bile was discharging through the intra-abdominal sinus as expected.

DR. J. W. D. MAURY, New York City: We have done a great deal of this work at Columbia, always using animals. Probably not all members of this Section have been able to follow the attacks on animal experimentation that have been made in New York; were it not for the activity of two or three members of the profession in that state, a bill would recently have passed the legislature which would have made it impossible for us to do any more of this work except under the strictest and most annoying restrictions. I would ask physicians of other states to use their utmost vigilance not to allow any antivivisection bill of whatever nature to be presented to the legislatures without immediate protest. Those of seemingly mildest form are most dangerous. The efforts of the well-meaning persons who are opposed to this work will be centered in some state where there is not very great medical activity; therefore, I hope that physicians will not fail to watch the legislatures.

DR. R. C. COFFEY, Portland, Ore.: In all our work on animals, we have invariably given one and one-half grains of morphin before beginning to operate, so that there was no struggling even while giving the anesthetic. Every animal is anesthetized, so that there is no trouble whatever. The police visited our laboratory and found nothing wrong with it. We have a good, healthy climate in Oregon, and we do not know anything about these neurasthenics who usually constitute the class of agitators known as antivivisectionists. I appreciate Dr. Sullivan's work. If there is a field for something new, it is right here. It is most embarrassing for the surgeon to be confronted by a bile-duct which has been destroyed, and to see all the bile pouring out of the abdominal cavity. It means certain death. I shall try Dr. Sullivan's method at the very first opportunity, preferring, of course, to try it out on animals as he has done.

Characteristics of *Spirochæta Pallida*.—The study of some of the characteristics of *Spirochæta pallida* is very interesting. In new and untreated cases the spirochetes are very active, never ceasing for a moment to keep up some kind of movement, and though, as a rule, their position in the field is unchanged, should some foreign material come in contact with them, they will get a purchase on it and run it down its length or cast the substance away, or very gradually, in a snake-like manner, pass on. This may be the means by which they reach the surface of a lesion. The movement of the spirochetes, as time elapses, will get less and less vigorous, never ceasing, however, until their death, when it terminates with the spasmodic jerk before referred to.—L. T. Price, in *Old Dominion Journal of Medicine and Surgery*.

CARCINOMA OF THE CECUM

JACOB FRANK, M.D.

Attending Surgeon, Columbus Hospital; Consulting Surgeon,
Michael Reese Hospital

CHICAGO

History.—Mr. B., a retired farmer, aged 62, presented himself at my office complaining of pain in the abdomen, and alternate attacks of constipation and diarrhea. The personal and family history was negative. The patient had always been well, with the exception of having been confined to his bed for a few days, some years ago, on account of having been kicked in the abdomen by a horse. Examination of the abdomen revealed a mass about the size of an orange in the cecal region. The patient had observed the occurrence of ribbon stools.

Operation.—April 29, 1910, at the German Hospital, I did a laparotomy and found an extensive involvement of the cecum, appendix and adjacent glands. A macroscopic diagnosis of carcinoma was made and the following operation performed: The ileum was clamped and divided three inches from the ileocecal junction. The cut proximal end was closed and

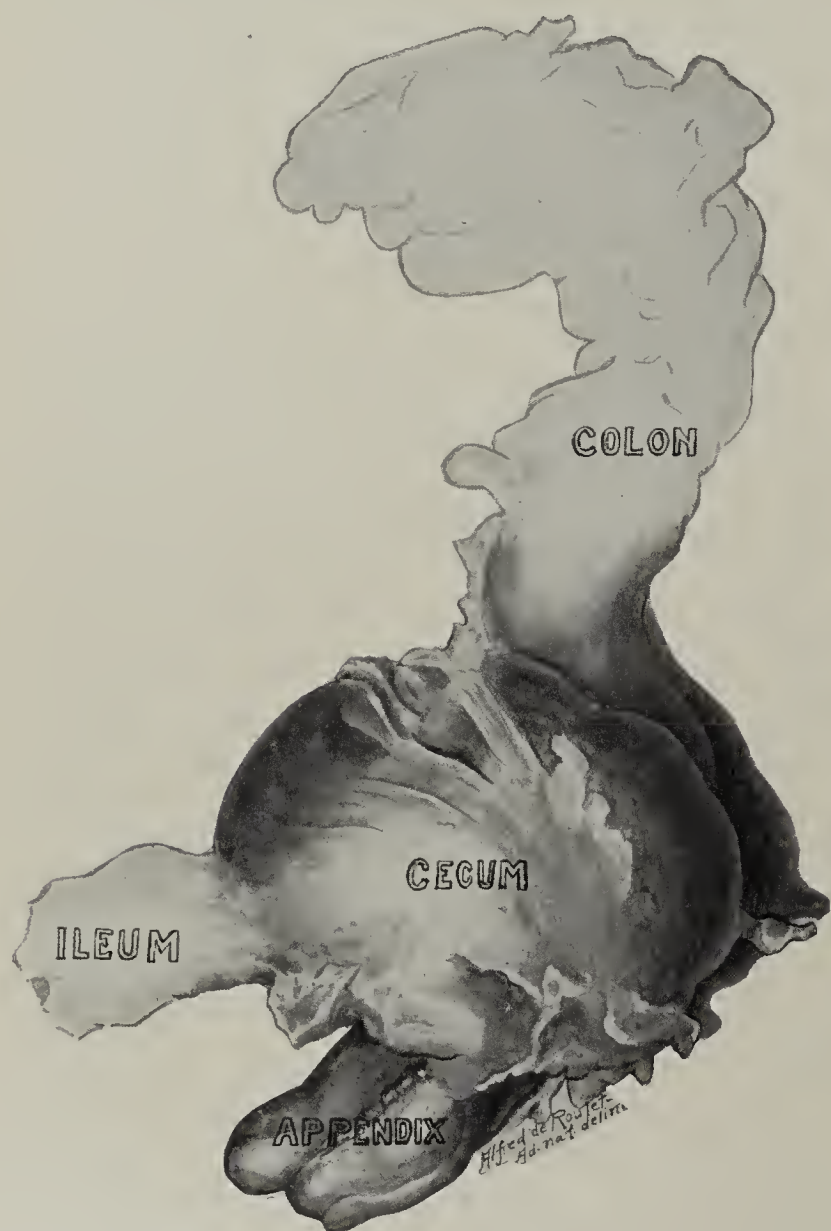


Fig. 1.—External appearance of tumor and surrounding structures in case of adenocarcinoma of the cecum.

inverted like the stump of an appendix. The field was carefully cleared of a large number of diseased glands. The cecal mass was dissected away, and removed with some six inches of the ascending colon. The cut end of the colon was closed in the same manner as the divided ileum. A side-to-side anastomosis between the ileum and colon was then made. The wound was drained with gauze and gutta-percha.

Postoperative History.—The temperature never rose above 100 F., nor the pulse above 90. The patient reacted from the

operation without shock. Liquid nourishment was given on the second day; the patient had a formed bowel movement on the sixth and was allowed solid food on the twelfth. A fecal fistula developed from the inverted ileum on the tenth day after the operation, but closed at the end of the fourth week. With this exception the recovery and convalescence were uneventful. Six weeks after the operation the patient

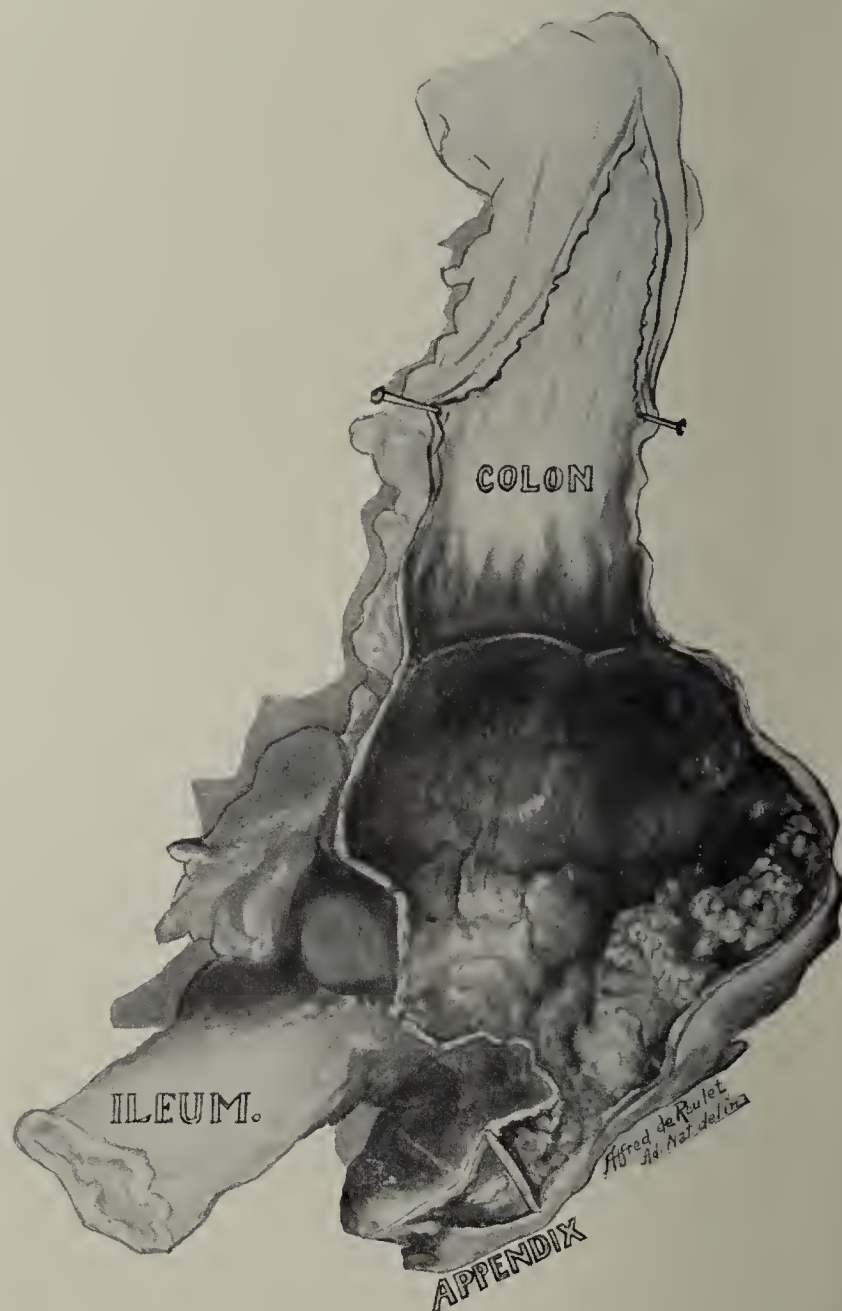


Fig. 2.—Appearance of inside of bowel in case of adenocarcinoma of the cecum.

left the hospital apparently well, and remained well up to the time of writing this report.

Microscopic examination showed the growth to be an adenocarcinoma. It is not possible to say whether or not the growth is of appendicular or cecal origin.

100 State Street.

A HOME-MADE ELECTRIC CENTRIFUGE

A. S. BRUMBAUGH, M.D.

ALTOONA, PA.

An ordinary electric fan can be converted into a satisfactory centrifuge in the following manner: The fan and guard are detached from the motor and the latter is firmly screwed to a solid board about a foot square. A set of bevel gears is obtained from the head of an old sewing-machine—the old-style Singer for example; or if no machine is at hand on which an autopsy is permitted, the gears can be obtained at small cost from the factory. One of these gears is attached by a set-screw to the motor-shaft; the other is attached to a steel rod

$\frac{3}{8}$ -inch in diameter and 16 inches long. This rod is securely held in a perpendicular position in front of the motor by two brass bearings; the lower or end bearing is simply a brass block with a $\frac{3}{8}$ -inch hole drilled part way through the center and is screwed to the board on which the motor rests. A $\frac{3}{8}$ -inch ball bearing is dropped in the hole in the bearing, and the lower end of the steel rod is slightly concaved so that it will rotate smoothly. The upper bearing is a brass cylinder one inch in



A home-made electric centrifuge.

diameter and an inch or more long, with a $\frac{3}{8}$ -inch hole through its center. This bearing is held in place by a V-shaped brace, made of a strip of iron $\frac{1}{32}$ -inch thick and about an inch wide, the apex of the V being rounded to fit around the bearing; this brace is fastened to the motor frame by two screws, one at each end of the V (the screws which attach the fan guard may be used for this purpose), and the bearing is fastened in the rounded apex of the brace with two small screws.

A sewing-machine balance wheel is attached to the upright rod between the two bearings and the arm carrying the sedimentation tubes is attached to the top of the rod. The arm and tubes of a hand centrifuge may be used. To eliminate vibration it is necessary to have the balance wheel centered perfectly on the rod and to have the bearings neatly fitted, and the bevel gears not meshed too closely. The bearings should be oiled frequently.

The entire cost of labor and material in thus converting my fan into a centrifuge was \$3.50.

No doubt many physicians have electric fans in their offices which stand idle except for a few weeks in summer and could be profitably used the remainder of the year as centrifuges.

1405 Tenth Street.

Breast-Feeding of Infants.—Those who stop to think will realize that even partial breast-feeding favors an undisturbed digestion in the infant and a safer and more continuous development. Yet many a mother whose milk could readily be made to assist in the early nutrition of her infant is ignorantly advised or allowed to discard it for the greater uncertainties of total bottle-feeding.—T. S. Southworth, in *Am. Jour. Obst. and Dis. Women and Children*.

SYPHILIS IN CHILDREN

MY EXPERIENCE WITH SALVARSAN: IMMEDIATE RESULTS AND LATER TOXIC MANIFESTATIONS

LOUIS FISCHER, M.D.

Attending Physician to the Children's Wards of the Sydenham Hospital, and Attending Physician to the Willard Parker and Riverside Hospitals

NEW YORK

In order to study the true value of salvarsan, I have selected three common types of syphilitic lesions most usually encountered in children.

1. A boy having syphilitic lesions in knee-joint, with infiltration, swelling, and pain on extension or flexion of joint. He was castrated for gumma of left testicle, several years ago.

2. A child with congenital syphilis having lesions (a gumma and condylomata) on vulva, around the anus. This patient was photographed before and one week after treatment, to illustrate the apparent benefit.

3. A girl with congenital syphilis, showing all evidence of malnutrition, having an enormous spleen palpable two fingers below the umbilicus, swollen glands in various parts of the body, a very large liver and icterus.

No patient was subjected to this treatment until a positive Wassermann and a positive Noguchi reaction were obtained. It was not easy, in Case 1, to demonstrate the spirochetes, although diligent search was made for them by Dr. Fred. Sondern.

In Case 2, the *Spirochæta refringens*, not the *pallida*, was found. For all Wassermann and Noguchi examinations, I am indebted to the courtesy of Dr. D. M. Kaplan, Director of the Laboratory of the Neurological Institute.



Fig. 1.—Margaret K., 18 months old, with congenital syphilis, before injection of salvarsan.

The blood was examined before and after the injection, and showed a slight increase in the polymorphonuclear leukocytes, also a slightly increasing leukocytosis.

In one case, in addition to a positive Wassermann, a positive cutaneous tuberculin reaction (Von Pirquet), by inoculating human tuberculin, was found, showing a notable though frequent association of tuberculosis with syphilis.

Clinical details were carefully studied by Dr. M. Freund, house physician of hospital, to whom I am indebted for painstaking supervision, in addition to

Dr. Heller, for additional clinical notes. The blood examinations were made by Dr. Gunzburg of the resident house staff.

The immediate result in all cases seen by me was a marked improvement. By improvement is meant the effect on visible gummata and condylomata. There was a general brightening up, and to all appearances a sudden change had taken place. In one case which I report the joint swelling improved rapidly, and the child was discharged greatly benefited after fourteen days treatment at the hospital. One injection was given, and no after-treatment. The patient reported to me weekly; and six weeks after the improvement above mentioned, I note an apparent change for the better.



Fig. 2.—Appearance of lesions before injection in same child.

REPORT OF CASES

The following cases have been attended by me in the babies' ward of the Sydenham hospital:

CASE 1.—B. L., 6 years old, was a former patient of Dr. Tuniek. The mother had an innocent infection. The boy was born with lues, affecting various parts of the body. He had a gumma of testicle for which he was castrated. At present he has a swelling of the left knee-joint, which is thicker than the right joint. The superficial veins are very prominent, and the joint is immovable; evidently gumma-periostitis. The Wassermann reaction is positive, likewise the Noguchi. I am indebted to Dr. D. M. Kaplan for the serologic examinations. An injection of 0.3 Ehrlich-Hata given in a neutral solution, in the left buttock, with aseptic precautions, was not followed by local reaction. Marked benefit followed within forty-eight hours.

Repeated examinations of the urine showed no evidence of any abnormality.

TABLE 1.—EXAMINATION OF BLOOD BEFORE AND AFTER THE INJECTION (CASE 1)

Date.	W. B. C.	Polynuc.	Lymph.
10/26	12,200	80	20
10/29	15,400	78	22
11/ 1	16,200	75	25
11/ 5	16,000	78	22

CASE 2.—Margaret K., 18 months old, a breast-fed child, was referred to my hospital service through the courtesy of Dr. Henry Whitehouse, whose diagnosis was syphilis. The child was backward in development; could not walk but could stand; said only "mamma" and "papa." Falling of hair, enlarged superficial veins of scalp, marked pallor of skin, and hemic murmur of the heart, also heard in the carotids, were present. The child had snuffles. The epitrochlear glands were easily palpable.

On admission to hospital a diagnosis of gumma on the vulva, and condylomata on the vulva and anus was made. Wassermann reaction was positive, also the Noguchi. A smear taken from the surface of gumma was carefully examined by Dr. Fred. Sondern, who reported the presence of *Spirochæta refringens* but not the *Spirochæta pallida*.

The diagnosis being positive, an injection of 0.3 gm. salvarsan was given in the left buttock. Within twenty-four hours the swelling of the vulva and the gumma began to melt away, the swelling of other parts decreased and marked benefit followed.

A severe local infiltration followed with marked febrile reaction and swelling which subsided by local antiphlogistic treatment. It is almost impossible to credit sufficiently the immediate benefit noticed in the lesions, by those who saw the case from day to day.

This condition of improvement was suddenly changed to one of visible loss of power. This was more marked on the left side. At the site of injection, an induration was palpable and from a slight fistulous opening we expressed a yellowish-green mass resembling unabsorbed concentrated Ehrlich-Hata preparation. In addition thereto yellowish coagula resembling necrotic tissue was expressed. There was no Herxheimer¹ reaction present.

Toxic Manifestations.—In this case the visible lesions covering the vulva and labia disappeared and did not return. The muscles of the legs suddenly lost their tone; they were limp and flaccid. Marked trophic changes were noted as early as two weeks after the injection. On the left side the plantar reflex was absent and the patellar reflex was lost. There was progressive atrophy of the extensor and flexor group of muscles of the thigh, calf and leg. The infant seemed to have lost all strength. The sphincters of the bladder and rectum functioned properly. There was a slight drop-foot.

On the right side we had trophic changes involving the thigh and leg. There was also a soft flaccid condition of the muscles and progressive emaciation. The

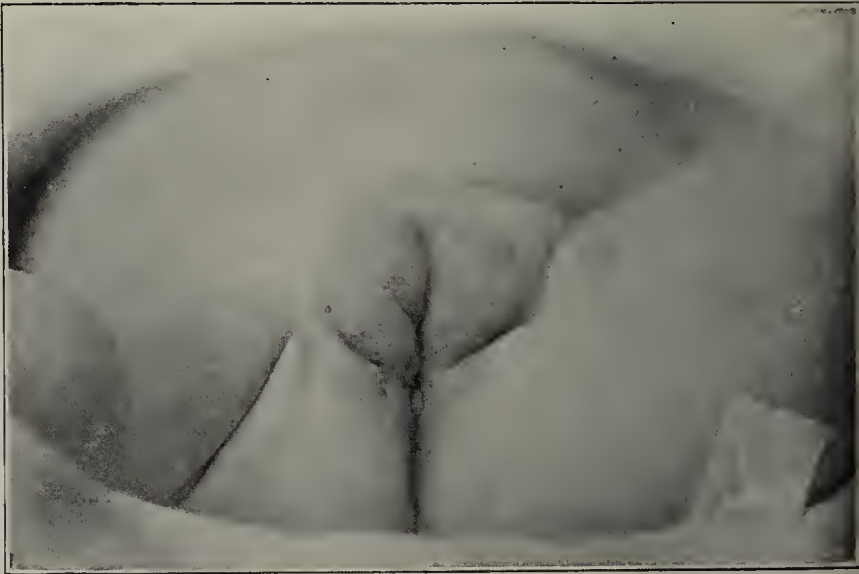


Fig. 3.—Appearance of lesions in same child one week after injection.

patellar reflex was lost, but the plantar reflex was present. The infant appeared absolutely helpless. The pulse was small and feeble, and the infant showed all the evidence of toxicity. We were certainly dealing with a toxic neuritis due to the injection of this remedy.

Such were the visible evidences of the toxemia. The heart-sounds were feeble and muffled, and a faint murmur was heard at the apex. The child was unable to hold its head up. There was marked anorexia. Owing to the cardiac weakness I ordered

1. The Herxheimer reaction consists in an increase of any and all exanthemata after an injection of 606, similar to mercurial treatment. Ehrlich believes that when this reaction occurs the parasites, instead of being killed, are simply being irritated and produce an increased quantity of toxin. This reaction is usually found when an insufficient dose has been given.

cafein, sodium benzoate, and hot salines to stimulate the circulation, in addition to concentrated food, such as yolk of egg with milk, and broth, and malt soup feedings. Massage and general faradization have been used almost one month with but slight improvement. There is a slight increase in weight, due no doubt to improved metabolism. The child appears sick, is listless, and also has excessive diaphoresis. The prognosis is dubious. She is still in the hospital for further observation.

TABLE 2.—EXAMINATION OF BLOOD BEFORE AND AFTER THE INJECTION (CASE 2)

Date.	W. C. B.	Polynuc.	Lymph.	Mononuc.
10/18	13,000	73	24	3
10/20	16,600	82	17	1
10/22	12,400	78	22	..
10/24	13,200	79	21	..
10/27	12,000	78	22	..
10/28	12,000	78	20	2
10/29	12,000	76	23	1
10/30	12,400	73	27	..
10/31	12,000	77	23	..
11/ 1	12,800	78	21	1
11/ 2	12,600	76	24	..
11/ 4	13,000	78	21	1
11/ 5	13,200	77	23	..
11/ 7	13,800	76	24	..
11/ 9	13,600	77	22	1

A comparison of the blood reports in Cases 1 and 2 shows a decided leukocytosis soon after the injection. This leukocytosis remained about two weeks in Case 1, until the patient was discharged.

In Case 2, still under observation, the apparent leukocytosis was soon lost, and the leukocyte count of 13,000 on admission to the hospital is now gradually reappearing. When the neuritis was at its worst the leukocyte count was at its lowest, 12,000, and with improved nutrition the leukocytes rose as high as 13,800. The urine showed the presence of albumin on several examinations.

CASE 3.—Helen K., 8 years old, has been under treatment for syphilis for two years. The epitrochlear and inguinal glands are swollen, the liver is very large and the spleen enlarged, extending to below the level of the umbilicus. The patient has various eruptions and nodules on tibia and radius, and cervical glands always enlarged. At present there is some icterus. The patient has been operated on for enlarged tonsils and adenoids by Dr. Freudenthal, and incised for various abscesses by myself. She has frequent ear discharge, and vaginal catarrh; has never been healthy. Wassermann and Noguchi reactions are positive. An injection of 0.3 gm. salvarsan was given in the left buttock with aseptic precaution. The condition of the child is excellent, although the liver and spleen are not noticeably reduced in size. The appetite is good.

It is four weeks since the treatment was begun in this case. There is still a local infiltration and an induration of the buttock which has not become inflamed but is still a reminder of the injection given.

In each of the three cases a single injection was given. This preliminary report is submitted as an unbiased clinical study, and the patients are still under observation. One of them, Margaret K., is still in the hospital, six weeks after the injection.

CONCLUSIONS

From a study of the foregoing experience the following deductions are justified:

First, the toxicity may be due to a hypersensitive body, possibly an idiosyncrasy.

Second, the dose of the drug (0.3 gm.) is too large for children and hereafter I shall advise no more than 0.1 of the Ehrlich-Hata preparation, the dose not to be repeated for at least several weeks, or until we are justified in assuming that there are no systemic symptoms associated with the first dose.

From my present experience I would strongly advise against the injection of ambulant patients, but would require the injection to be given either in the hospital or in a sanitarium, where proper medical supervision and competent nurses can supervise details, and note toxic symptoms as early as possible.

162 West Eighty-seventh Street.

LIFE AND HEALTH AS NATIONAL ASSETS *

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Director, Laboratory Division, Minnesota State
Board of Health

MINNEAPOLIS

Short-sighted humanity fails to appreciate Nature's gifts until threatened with their loss. This is true of even the greatest of her gifts, life itself. Although belated in our realization of the threatened overdraft on Nature's storehouse, a compensatory and irresistible enthusiasm has developed within the last two years which augurs well for the retention by our country of that international leadership so manifestly foreordained by Nature's bountiful equipment.

It is significant of our failure to value health, which above all other considerations makes life worth the living, that the first meeting of the governors of states failed to provide for the study of health problems. The omission was noted and in the National Conservation Commission's Report of Jan. 11, 1909, in the general schedule, special consideration was given to life and health. The report itself deals with five different phases of conservation, namely, minerals, lands, forests, waters, and finally, national efficiency, or health. Only four sections, however, were created. Health was not provided with a special section or officers.

In the North American Conservation Congress called by President Roosevelt Dec. 24, 1908, in addition to the conservation of the national resources already mentioned, the protection of game received attention. This was an international commission representing our own country, Canada and Mexico, which reported from Washington, Feb. 23, 1909. Among the commissioners representing the various countries there was seemingly no one whose training and paramount interest lay in the field of public health.

While it is apparent that the initial oversight has been in part repaired, it remains to be seen what progress will result from the Second National Conservation Congress, in relation to this, the people's most important natural asset.

The inclusion in the program of a paper entitled "Life and Health as National Assets" must not be taken as evidence that there is any doubt as to the real and assessable value of life and health. Rather are we called on at this time to realize that they constitute national or public resources furnished by Nature and are not to be regarded as strictly personal or private possessions. The individual life has its economic and commercial value to the community and the nation by virtue of the contribution it may be expected to make to society. This view may perhaps be novel to some. Our ideas concerning conservation of our other natural resources, however, have undergone such rapid evolution in the recent past, that we may easily orient ourselves to the

* Read before the second National Conservation Congress, St. Paul, Sept. 8, 1910.

viewpoint exhibited by the officers of this congress, that the individual in matters of health as of other resources, must respect the rights of other individuals and of his municipality, state and government. The health aspect of conservation, which is its most important aspect, cannot and will not be neglected, although it has not been the first to which the attention of the nation has been directed.

Nor can we dissociate health conservation from the other aspects of the movement even if we would. The history of man's progress in knowledge of the natural sciences bears out this statement. Even though we ourselves have broken faith with Nature, we are able to-day to make her fulfil her promises in forestry, agriculture and other economic matters by the application of our knowledge of those very sciences which may be said to owe their birth to man's search for perpetual life and youth.

One can easily imagine that the medieval conservation commission comprised two sections, one on health and the other on minerals. In the former, which undoubtedly was basic and dominated all other considerations, the papers presented dealt with "elixir of life" and the touchstone, while in the latter the chief interest was displayed in the transmutation of metals.

At this stage the studies of health and of the control of man's so-called material assets were carried on hand in hand, and if we are logical they always will be.

In any event man's health depends on the success of his effort to adapt his environment to his needs more than in adapting himself to his environment. Health interests are fused with social and economic development, but should undoubtedly dominate rather than be dominated by them.

OBSTACLES TO PROGRESS IN CONSERVATION OF HEALTH

Our lack of interest in matters of health is more apparent than real. It is characteristic of many of us that where our most vital interests are involved we betray the least public concern. In nothing is this better exemplified than in our matters of personal and public health, except, perhaps, it be in matters of religious belief and practice. Nor should we deem it strange that a similar attitude of mind obtains in matters of health and religion.

In ancient times the priest and the physician were one. At the present day aboriginal tribes combine religion and health, and to too great an extent perhaps do our civilized nations fail to discriminate between the two. Particularly is this exhibited in man's cowardly attempt to shift his responsibility for disease and death to Providence.

One of the greatest causes of lethargy in the conservation of personal and public health is the failure on the part of many to differentiate clearly and sharply between disease and death. The former is really a manifestation of life and vital force and is capable of modification, prevention or cure by human agency, since man has shown himself quite able to solve Nature's other secrets for the benefit of his comfort or convenience. We conserve health by the application of the same sciences which enable us to conserve our other better recognized but less material natural resources. Disease yields to man's mastery while death remains man's mystery. Even death may, however, be postponed, and Prof. Irving Fisher has estimated that over 600,000 deaths occur each year in our country which could be postponed by systematic application of scientific knowledge already available. For those who think more

easily in terms of dollars and cents he has estimated this appalling annual national loss at over one billion of dollars which can and should be prevented.

We must not be lulled into a sense of well-being by such statistics. There is no royal road to such a goal. Our very success in the eradication of one disease or insanitary condition may lead to undue optimism in regard to other problems which later may be found to be dependent on altogether different causes and to require very different methods of prevention or cure. Failure to realize the complexities of modern social activity and economic development in their relation to health and at the same time to recognize the immense number of variable factors and agencies which are involved in health protective measures cannot but lead to disappointment. The individual whose enthusiasm is too easily aroused by the discovery of some hitherto unknown cause of disease or some new method or theory of cure or prevention is a source of danger to the commonwealth. The faddist, whether in the matter of such things as food, clothing, fresh air, baths, exercise or other therapeutic agent, is to be feared, as well as the individual who thinks that he has discovered the one cause of all diseases.

Our chief difficulty lies in coordinating the various forces and agencies which are essential to success in the eradication of sickness. There is no blanket method of preventing all diseases. Quarantine and fumigation are now found to have a more limited application. Vaccination, which is practically an absolute and the only reliable protection against small-pox, cannot be applied to such diseases as malaria, yellow fever and diphtheria. The use of antitoxin which prevents annually many thousands of deaths from diphtheria does not help us in many other diseases. Our knowledge of mosquito-borne disease which has reorganized life in Cuba, Panama and the Philippines is not of much practical use in our northern states. As there is no single cause, there can be no single method either of cure or prevention.

These considerations should not discourage us. They show us, however, the need of further study and the imperative demand for employing the services of trained physicians, biologists, chemists, engineers, statisticians, sociologists, educators and other experts, and of coordinating all their efforts. We must steer a middle course, avoiding on the one hand the Scylla on which those run who become discouraged in what they believe to be the face of the unknowable, and, on the other hand, the Charybdis of that fateful tendency to minimize the actual complexities of the present-day health problem. Fatalist and faddist are equally dangerous. It is fair to count on the same progress in the adaptation of physical, chemical, biologic, social and other sciences to the diagnosis, cure and prevention of disease as in their application to man's comfort, convenience and economic development.

It is clear that the efforts of all the various workers in the different fields must be coordinated and the difficulties of coordination are at once apparent. The forces and agencies may be roughly divided into international, national, state, county, municipal and institutional. Each one of these is capable of being subdivided still further into two classes, one of which is official or governmental and the other is voluntary. Improvement in public health requires cooperation and coordination of all of these. Successful public health administration consists largely in making individuals do what they do

not wish to do, or that of which they do not appreciate the necessity, for the good of themselves and others.

This brings us naturally to the consideration of another national weakness. We encounter some of the same difficulties in public health work that we meet in the exercise of our other public functions. Rampant individualism is of even greater danger in matters of health conservation than in other affairs of public concern, largely on account of the fact that health is too often regarded as a purely personal rather than our most important public asset. The individualist objects to authority in matters of health control. Consequently he resents dictation as to his personal action and fails to recognize the need for special training in health administration as in other branches of public service. We deliberately handicap ourselves by failing to recognize the necessity for employing those who have fitted themselves by special training, and by our unwillingness to maintain a proper relation between compensation and responsibility. Most of those who are engaged in public health service have no way of gaining experience except at the expense of the public and are too frequently removed by political change or semi-starvation just as they have succeeded in equipping themselves to be of the greatest possible value to their fellow citizens.

Public service of many kinds and particularly that which relates to the conservation of health in our country is all too often delegated to voluntary agencies which are thus forced to fulfil the functions which in other countries devolve on official and governmental agencies. This duty is nobly discharged. Their main function should be, however, to afford to the general public an object-lesson of what is needed and of how progress can be made. In this they rarely fail, although they labor under tremendous difficulty imposed by lack of authority. Funds which are furnished from private sources are frequently insufficient to permit of the employment of experts of the highest order. Public apathy, on the one hand, and the development of an abnormal interest on the part of voluntary workers on the other, frequently lead to their continuance long after they have ceased to be useful, with the result either that the public delays in the establishment of an official organization, or, if such an organization be established, there is conflict between the official and voluntary forces. If municipal health departments, hospital services, police departments, water, school, poor and park boards and other official servants and representatives of the people were supported by the people and were quick to see their opportunities, there would be less need of associated charities, visiting nurses, pure water and milk commissions, tuberculosis camps, playgrounds associations and other such voluntary organizations.

Had we found time apart from personal affairs, to consider and provide for public needs our federal and state authorities would have protected the people by the fixation of standards of preliminary and medical education and of medical licensure. This neglect of a plain public duty threw on the American Medical Association, the Association of American Medical Colleges and the Carnegie Foundation for the Advancement of Teaching the task of investigation and report on conditions in medical education which are now being improved through the force of public opinion rather than by law.

Is it not humiliating that public lethargy made it necessary for Mr. Rockefeller to provide funds for the investigation and eradication of hookworm disease?

In Germany, the government, through its public health service and universities, provides for medical and other research, so that the nation has become a leader of the world in scientific health protection and scientific economic development.

In America those institutions which are best able to carry on medical research derive their financial support from private sources. We are gratified, however, to see the increasing tendency in our country to provide efficient scientific laboratories for the federal and state governments and in our state universities.

ARE AMERICANS ABLE TO PROVIDE ADEQUATE PROTECTION TO THE NATIONAL LIFE AND HEALTH?

Having seen some of the difficulties which stand in the way of satisfactory conservation of the public health we might perhaps ask ourselves what proof of the possibility of conserving this asset is available. If, at this day and time, the American public is unconvinced of the need and possibility of conserving public health, it is undeserving of the respect of other nations, or even of self-respect. The daily and weekly press, our magazines, and governmental and other publications have overflowed with information. Our attention was particularly called to the possibility of preserving the health of men in the field by Japan's experience in the recent war with Russia. Our life-insurance companies have been quick to see the practical possibilities of prolonging the lives of their insured and of thus increasing the earnings of the stockholders.

The report on "National Vitality, its Wastes and Conservation," which was issued by the American Association for the Advancement of Science, is a masterpiece. It was prepared and presented by Prof. Irving Fisher, of Yale University. The publications of the various committees of the American Medical Association, the speech of Senator Owen in the *Congressional Record* of March 24, 1910, as well as federal, state, municipal and other health reports afford examples of what can be done.

Those who may be skeptical in regard to the ability of our people to compete with the older nations in the prevention of disease should note what has been done by Americans under the greatest of difficulties. In Cuba our nation overturned the existing order of affairs and the scientific discoveries made and applied to sanitation by Americans afforded a lesson to the world. There has been no greater factor in winning the world-wide confidence of other nations than the production of the existing sanitary state of affairs in the Canal Zone by our own citizens. Our work in Cuba, Panama and the Philippines has served to bring about hygienic conditions in supposedly pestilential regions which are vastly superior to those which obtain at home.

What Americans have done for others they have failed to do for themselves, owing largely to the lack of provision of adequate official and governmental agencies and failure to coordinate those which exist. Two Americans in Porto Rico showed the possibility of stamping out hookworm disease. The brains were furnished by the United States and the money by the island. We have the brains at home but refuse to pay the bills.

It is manifest that a full and complete discussion of life and health as national assets is impossible within the limits of a single paper. No attempt need be made to present a complete basis either of comparison or differentiation of health conservation from the other aspects of the national movement. It must be clear to

all that in the conservation of lands, minerals, waters and forests, effort is made to prevent the individual from taking that which belongs to the public. In the conservation of public health, our effort must be directed to preventing the individual from giving to the public something which neither he nor it desires. This is particularly true of infectious diseases.

There are many other phases of public health than those which relate to infectious disease, but they cannot be discussed at this time.

I have the honor to be a delegate to this congress from both the American Medical Association and the American Public Health Association, which represent factors in the conservation of human life and health concerning which the public needs more information than it possesses, and with your permission I shall briefly mention a few important matters.

THE MEDICAL PROFESSION IN ITS RELATION TO PUBLIC HEALTH

In the past, individual physicians and local medical associations and societies have brought a scattering fire to bear on the inactivity and ignorance of the general public in matters which pertain to public health. The public fails to believe in the urgency of health needs when presented by individual or groups of physicians because of its inability to appreciate the motive which leads the physician to urge the establishment of machinery and the special education of officials as also the provision of laws and funds to carry on work, which to the casual observer would mean a diminution of the individual physician's work and income.

Physicians who have qualified by postgraduate training in bacteriology, pathology, epidemiology and in public health, hospital, school and institutional administration must be drafted into the direct and official service of the people. This need is increasingly apparent. Others are required who can present evidence of special scientific training in chemistry, engineering, statistical, sociologic, charity and other work.

At present, great as is the actual need, the demand on the part of the public and the remuneration offered are so small and the possibility of employment so uncertain that universities, technical schools and other institutions which offer special courses fail to attract students. The public seems to prefer as yet to jeopardize its most valuable asset by employing untrained public health servants who develop efficiency after instead of before their appointment. This means a payment in life and health instead of dollars.

The average individual seems willing to pay and pay well for a cure when he is sick. Communities pay the cost of epidemics and will even pay for engineering services in relation to public utilities, such as water-supply and sewage disposal, but this is usually done only under the stimulus of some recent or threatened disaster. They, like the individual, want a cure, not a protection. Clinical experts, life-insurance examiners, and consulting and commercial engineers are all sure of a good livelihood because they can help the individual or community out of difficulties. Sanitarians and municipal engineers are usually left to semi-starvation because their function is to prevent the same difficulties, without, however, having either available public sentiment or funds to enable them to do it.

Physicians are naturally skeptical of the scientific training and possession of proper ideals on the part of those who have not been especially trained in medicine and who may have failed to develop the "disease point of

view." That they are, however, of a receptive frame of mind can be shown in many ways. The American Medical Association has a number of standing committees, including a Council on Medical Education. This Council, in the endeavor to raise the standard of medical teaching throughout the United States, has prepared a standard schedule of minimal requirements, through the agency of ten committees, each of which consists of ten representative men. One of these ten committees which had to deal with hygiene, medical jurisprudence and medical economics contained in its membership university and college professors of chemistry, physiologic chemistry, political economy, pathology, bacteriology and hygiene. There were also executive officers of state and municipal boards of health and representatives of the federal health service; while among the collaborators were engineers and many university professors. Bear in mind that this was a committee of the so-called "medical trust," the American Medical Association.

Through oversight for which no one is responsible, this second National Conservation Congress and the American Public Health Association are meeting on exactly the same dates, September 5-9, we in St. Paul and the Public Health Association in Milwaukee. This association consists of some physicians who are in practice, but more particularly of medical men who are trained as federal, state, municipal, and institutional administrative officers, as also of laboratory, statistical, engineering and other technical workers. The membership includes representatives from all of the leading universities and medical and technical colleges. It has three sections, namely, laboratory, vital statistics and municipal health officer sections and is organizing a sociological section. You are familiar with the work of many of its officers and members. Colonel Gorgas, who was responsible for the administrative health work in Cuba and who has made possible the building of the Panama Canal without undue loss of life, is a member. The late Dr. Walter Reed, who eliminated yellow fever from civilized communities, was vice-president. It is an international association in which Canada, Mexico and Cuba participate, and much can be learned by attendance at these annual meetings. One of its chief benefits has been the formulation of standard methods of scientific procedure applicable to the suppression of disease in various districts of the different countries.

We are compelled to admit that our neighbors from the north and south have much in the way of advantage which is denied to our own workers. In our sister countries, the tenure of office depends more on the fitness and training of the incumbent. As a rule, the compensation for public service is relatively higher and the official organizations are better provided with an authority which is commensurate with their responsibility than is the case in our own country.

Time will not permit of an extended discussion of these conditions, but the annual opportunity to compare notes, tell each other of our successes as also of our failures and to help in the formulation of new methods, and in an effort toward a higher standard of efficiency, is of untold value. This is, however, a purely voluntary organization maintained for over thirty years at the personal expense of its members in the face of public apathy. This will be realized if I ask "How many of you knew that we have such an association?" and "Did you know that it is now in session?"

There yet remain a few matters of which a general understanding would bring about yet greater coopera-

tion between the physician and the general public. The medical profession has realized for a number of years that its members must become teachers of personal hygiene to their patients and families, as also to schools and the general public. It is a new viewpoint and involves the assumption of new responsibilities. The doctor has guarded himself against publicity except through his professional societies and journals and to his students, though ever eager to furnish details of his own discoveries and to recount his failures as also his successes to those who could understand and sympathize. This kind of publicity has been regarded, however, by the lay public as a sort of soliloquy carried on in an unknown tongue, and intended for the mystification of that same poor public.

Why there should be any failure of the medical profession as a whole to be understood by the general public it is difficult to see. The general public is composed of individuals each of whom has a feeling of trust, affection and possibly of veneration for one or more members of the medical profession. Why then does the public, an aggregation of individuals, allow itself to become suspicious of the medical profession, an aggregation of physicians? Why does the public abhor and obstruct the physician in his study of anatomy, dissection and in autopsy on the human body? Why is there so much suspicion of the motives and work as well as denial of the benefits which accrue to humanity from animal experimentation, when it must be apparent to any right-thinking individual that the extension of a physician's knowledge is only possible by such means? Why must physicians from time to time be themselves forced to urge the necessity of making every hospital a teaching and research institution? A moment's thought would convince any one that if this be not done, and if medical knowledge be allowed to die out with this generation, there will be no skilled men available for the hospitals and patients of the future to which our children and children's children must look for protection. It must also be patent to all that the patients of the present day cannot possibly receive such effective care in a hospital in which medical research and teaching are not fostered.

Why should the burden of maintaining a high standard of entrance to the profession and of preventing dishonest, incompetent, ignorant, and untrained persons from assuming the responsibility of physicians be placed entirely on the medical profession when the object to be attained is the protection of private citizens and public health?

Physicians of the United States are now thoroughly organized. The public should rejoice in this, since it is an attempt to neutralize the narrowing effect of isolation and to foster an exchange of information which physicians offer freely to each other and publish broadcast to the world. County and state associations are affiliated with the American Medical Association, which numbers in its membership over seventy thousand physicians. Just as the individual physician's chief concern is the care of his patient, so that of the organized medical profession is public health and welfare. The medical profession is as a rule underpaid, but members spend their hard-earned money and a large portion of their time in efforts to benefit humanity, individually and *en masse*. It is the people's concern to demand a broad education and thorough scientific training of all students and practitioners of medicine, public and private. It is to their interest to see that every possible facility is afforded for teaching and that a rigid stand-

ard of teaching, examination, degree conference and licensure is maintained. Nothing is more exasperating for the physician of high ideals, whose length and breadth of sacrifice is known to none, than to hear the sneer directed at his profession for its effort to protect the public. The time has come when the medical profession is in a position to demand that the people exercise discrimination and protect themselves.

NATIONAL HEALTH DEPARTMENT

One of the first steps toward the betterment of our public health conditions is the coordination of the existing federal agencies in Washington, of which we are all so proud. When no logical reasons can be advanced in explanation of further delay, it is very discouraging to realize that this important matter again has been postponed.

At the Sixty-First Congress, various bills were introduced, including that of Senator Owen. In support of these bills appeared those who by special training and long experience are recognized at home and abroad as the highest authorities on public health. The whole nation is waiting to see what action her representatives will take to protect her most precious asset.

I should like to cite some sixteen reasons why the people of the United States should have a Department of Health, which were published by the Committee of One Hundred of the American Association for the Advancement of Science:

1. To stop the spread of typhoid fever through drinking sewage-polluted water of interstate streams.
2. To enforce adequate quarantine regulations so as to keep out of the country plague and other similar pestilence.
3. To supervise interstate common carriers, in so far as without such supervision they prove a menace to the health of the traveling public.
4. To have a central organization of such dignity and importance that departments of health of states and cities will seek its cooperation and will pay heed to its advice.
5. To influence health authorities, state and municipal, to enact reform legislation in relation to health matters.
6. To act as a clearing-house of state and local health regulations and to codify such regulations.
7. To draw up a model scheme of sanitary legislation for the assistance of state and municipal health officers.
8. To gather accurate data on all questions of sanitation throughout the United States.
9. To establish the chief causes of preventable disease and unnecessary ill health.
10. To study conditions and causes of disease recurring in different parts of the United States.
11. To correlate and assist investigations carried on in many separate and unrelated biologic and pathologic federal, state and private laboratories.
12. To consolidate and coordinate the many separate government bureaus now engaged in independent health work.
13. To effect economies in the administration of these bureaus.
14. To publish and distribute throughout the country bulletins in relation to human health.
15. To apply our existing knowledge of hygiene to our living conditions.
16. To reduce the death-rate.

In 1912 there will meet in Washington on the invitation of the President and the Congress of the United States, the International Congress of Hygiene and Demography. This congress meets triennially in the capitals of the world and brings together the leaders in health conservation who are officially delegated by the governments of all civilized countries.

We have many things to show them of which we can be justly proud. Our federal, state, municipal and other official health organizations, however, leave much to be desired, and it behooves us, in the few months still at our disposal, to prepare to show the visiting nations our methods and successes.

We need many other things, but due recognition and coordination of our federal health mechanisms is the first step, which, if we have taken it before the meeting of this international congress, will best enable us to profit by the experience of the world's experts there assembled.

Nature has been prodigal in her gifts to our nation. In no respect has she been kinder than in opportunities for health and efficiency. Her very prodigality has rendered us careless and extravagant.

It is high time that Americans do as well for themselves in health protection at home as they have done for themselves and others in Cuba, the Canal Zone, Porto Rico and the Philippines.

This demands the creation and maintenance of official organizations to amplify, extend and ultimately replace the work of our voluntary organizations whose lack of authority prevents complete success and whose continuance beyond the demonstrational stage or for other purposes than as a stimulus is an admission of American official incompetence which amounts almost to a repudiation of our belief in our own form of government.

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PICRIC ACID AND ITS SURGICAL APPLICATIONS*

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HISTORICAL REVIEW

Hausmann, in 1788, treating indigo with nitric acid, happened on a bitter yellow substance. Welter (1799) found a similar substance produced by the action of nitric acid on silk. Fourcroy and Vauquelin (1806) concluded that the two were identical, and Liebig (1827) and Wöhler (1828) established them as a definite chemical, calling it *Kohlenstickstoffsäure* (in French *acide carbazotique*). Laurent (1841) demonstrated it to be a derivative of phenol (carbolic acid).

The toxic properties of this chemical, later called "picric acid" from the Greek adjective "bitter," were investigated by Rapp and Föhr on dogs (1827). Bracconot (1830) introduced it into therapeutics in the treatment of intermittent fever. Dr. Bell of Manchester reintroduced it for the same purpose twenty years later, and it had for a time wide acceptance as a substitute for quinin, based on the clinical observations of Aspland. It came into general use in France, as well as in Germany, where it was also used and recommended as an anthelmintic. In America it was extolled by certain of the homeopathic school.

Its surgical application was suggested to Chéron (1876) by its power of coagulating albumin. Curie and Vigier (1877) recommended it for the treatment of wounds, but the drug was never properly appreciated

until Thiéry, ten years later, worked out by a protracted series of observations, the advantages of the saturated aqueous solution. He had many followers, who have spread its fame to other countries, and into other branches of medicine. His critics insisted on the danger of poisoning from absorption, but to this he had the answer that if properly used there was no danger of toxic symptoms developing, and that it had never been known to cause death even when taken internally, although five attempts at suicide by its use have been recorded.

CHEMICAL PROPERTIES

Picric acid ($C_6H_2(NO_2)_3O H$) is a trinitrophenol, and may be made by dissolving phenol crystals in strong sulphuric acid and adding nitric acid. Its crystals are small scales or elongated plates or needles, pale yellow, odorless, intensely bitter. They melt and sublime if warmed gradually, but if heated rapidly or rubbed briskly they detonate. The potassium and sodium salts are explosive.

It is soluble in alcohol (10 per cent.) and ether (20 per cent.), but only slightly in water (1.2 per cent. at room temperature). It may be purified by precipitation from a boiling solution. Its watery solution is deep yellow, having a marked affinity for animal tissues and fabrics, which gives origin to its use as a dye. Stained surgical dressings may be burned without danger of explosion. It is cheap.

Absorbed in sufficient quantity, it causes a yellow discoloration of the skin, simulating icterus, as well as of the internal organs. Large doses (dogs) cause destruction of the red corpuscles, and hemorrhage and inflammation of the kidneys and gastric and intestinal mucous membrane. It is excreted chiefly in the urine as picramic acid. About 15 grains internally will induce a yellow coloration of skin, conjunctivæ and urine in man. If it is continued the urine becomes black and there is headache, vomiting and epigastric distress. Aspland gave 1 to 4 grains three times daily for as long as nine weeks, without distressing symptoms. The discoloration disappears in two weeks after the dose is discontinued.

ANTISEPTIC PROPERTIES

Concerning its antiseptic properties I have been able to find in the literature no definite information. It has been generally recognized as a mild antiseptic; it has been recommended internally for the purpose of arresting decomposition of urine in cystitis, and it has been advocated as a disinfectant of fecal and putrid albuminous matter; being without odor, it does not mask the odors of decomposition. In order to determine at first hand its bactericidal power, the following experiments were undertaken.¹

EXPERIMENTS

The so-called rod-method was selected as being the best means of estimating the antiseptic strength of solutions used in surgical dressing. In this method the solution is tested out on bacteria which have been dried in air, in contradistinction to the drop-method, which tests the solution against bacteria in thin fluid suspension. The rod-method gives, therefore, an estimate of the power of penetration possessed by the solution, and as between the two methods it gives the slower reading.

1. The experiments were carried out at the bacteriologic laboratory of the Boston Board of Health, to the director of which I hereby express my extreme obligations. The experiments were performed with the aid and under the supervision of Dr. C. L. Overlander, instructor in theory and practice, Harvard Medical School, assistant in clinical pathology, Boston City Hospital, to whom I wish here to give grateful recognition.

* A bibliography of the subject, omitted here for lack of space, is given in the author's reprints.

A sterile saturated solution of picric acid at room temperature was employed. To serve as a control, as well as to give a basis of comparison with a commonly used antiseptic of known value, a solution of phenol in sterile water of analogous strength, namely, 1 per cent., was also employed.

As objects of the experimentation, fresh virulent cultures of *Staphylococcus aureus* and of *Bacillus pyocyaneus* were used, the staphylococcus representing the most resistant of the pus-producing organisms which the surgeon has to meet, and the pyocyaneus representing the milder secondary and saprophytic wound-infecting agents. The culture of *Staphylococcus aureus* was taken from a freshly opened breast abscess, and in order to increase its virulence was passed successively through three guinea-pigs, the last of which it killed in forty-eight hours. The pyocyaneus was taken in pure culture from an abscess in a horse, and was passed through two guinea-pigs, the second of which it killed in thirty-six hours.

The mode of procedure was as follows: Long glass rods were sterilized in test-tubes. To a twenty-four-hour growth of each of the cultures on agar a half dram of sterile water was added, and into this the growth was rubbed by a sterile platinum loop. Into these bacterial suspensions a sufficient number of the rods were dipped and placed in a frame to dry in the air at room temperature. After drying one hour, the rods were inserted into the tubes already prepared containing each about 10 c.c. of one of the sterile antiseptic solutions. After being immersed for the measured length of time, each rod was removed, rinsed off in a tube of sterile broth to wash away the excess of antiseptic, and planted on an agar slant. The broth and agar were both incubated ten days, when the final reading was taken. In case of doubt as to the identity of the growth, transfers were made to study cultural characteristics, as in this method there is considerable opportunity for contaminating organisms to enter. To guard further against error, the experiments were performed twice under identical conditions.

The accompanying table shows graphically the result of the experimentation. From it we conclude that a saturated aqueous solution of picric acid (1.2 per cent.) kills bacteria from a fresh virulent culture of *B. pyocyaneus* which have been exposed to the air for one hour, in a half minute, and bacteria from a fresh virulent culture of *Staphylococcus pyogenes aureus* in about two minutes, whereas a 1 per cent. solution of phenol under the same conditions takes about twenty minutes to kill *B. pyocyaneus*, and ninety or one hundred minutes to kill *Staphylococcus aureus*. That is to say, the picric solution may be considered about fifty times more active as an antiseptic than the 1 per cent. phenol.

CLINICAL

My first surgical application of picric acid was made five years ago as house officer in the Boston City Hospital, at the suggestion of Dr. Frederic J. Cotton. Since that time I have employed it on about 300 patients, ambulatory and bed cases, and in private practice. Never, either in infants or in adults, have I seen sufficient absorption to show in coloration of the skin or urine. I have used it with satisfaction in first, second and third-degree burns, and in fresh lacerated and granulating wounds and ulcers. It is my purpose here to describe the technic of its use, and the results of my observation of its effect, particularly in burns.

I have used practically throughout a saturated aqueous solution of the C. P. crystallized picric acid. The stronger solutions sometimes recommended in alcohol and water are momentarily extremely painful on large raw surfaces, and are of course more liable to be followed by symptoms of absorption. They have a place only in limited areas of first-degree burns and in dermatologic affections in which the skin is not broken.

The surgical employment of the acid in the form of an ointment is illogical, in so much as its so-called keratoplastic properties are interfered with by the fatty base, and the powdered crystals also should not be used because of the grave danger of absorption, and because the characteristic action is produced only by the solution.

A convenient method of preparing a sterile saturated solution is as follows:

Boil water in a flask sufficiently long to insure the sterility of the water and of the interior of the flask. While still boiling add the estimated quantity of pure picric acid crystals (12 gm. to the liter, or 1½ drams to the pint), stopper with absorbent cotton and allow to cool. Any excess of the acid will settle as a precipitate on the bottom of the flask. The contents can be kept sterile indefinitely.

MINUTES EXPOSURE	FIRST EXPERIMENT								SECOND EXPERIMENT							
	10 DAYS INCUBATION								10 DAYS INCUBATION							
	PICRIC 1.2%				CARBOLIC 1%				PICRIC 1.2%				CARBOLIC 1%			
	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH	PYO. BROTH	STAPH. BROTH
½			+	+	+	+	+	+			+	+	+	+	+	+
1			+	+	+	+	+	+			+	+	+	+	+	+
1½			+	+	+	+	+	+			+	+	+	+	+	+
2			+	+	+	+	+	+			+	+	+	+	+	+
2½			+	+	+	+	+	+			+	+	+	+	+	+
5			+	+	+	+	+	+			+	+	+	+	+	+
7½			+	+	+	+	+	+			+	+	+	+	+	+
10			+	+	+	+	+	+			+	+	+	+	+	+
12½			+	+	+	+	+	+			+	+	+	+	+	+
15			+	+	+	+	+	+			+	+	+	+	+	+
17½			+	+	+	+	+	+			+	+	+	+	+	+
20			+	+	+	+	+	+			+	+	+	+	+	+
22½			+	+	+	+	+	+			+	+	+	+	+	+
25			+	+	+	+	+	+			+	+	+	+	+	+
27½			+	+	+	+	+	+			+	+	+	+	+	+
30			+	+	+	+	+	+			+	+	+	+	+	+
35			+	+	+	+	+	+			+	+	+	+	+	+
40			+	+	+	+	+	+			+	+	+	+	+	+
45			+	+	+	+	+	+			+	+	+	+	+	+
50			+	+	+	+	+	+			+	+	+	+	+	+
55			+	+	+	+	+	+			+	+	+	+	+	+
60			+	+	+	+	+	+			+	+	+	+	+	+
70			+	+	+	+	+	+			+	+	+	+	+	+
80			+	+	+	+	+	+			+	+	+	+	+	+
90			+	+	+	+	+	+			+	+	+	+	+	+
100			+	+	+	+	+	+			+	+	+	+	+	+

Table showing comparative antiseptic strength of a saturated aqueous solution of picric acid and of a solution of phenol of analogous dilution. The picric acid solution kills *B. pyocyaneus* and *Staphylococcus aureus* in approximately one-fiftieth the time required by the phenol.

The solution should be applied on gauze. In case of a superficial burn of hand or foot, the part may be completely immersed in the solution for some minutes and the gauze dressing then applied, covered with sheet wadding and bandaged. Waxed paper or other material to prevent evaporation and render the dressing occlusive is of no advantage except to prevent the solution from soaking through and discoloring the bandage. To avoid staining the fingers, the wet gauze may be handled with forceps, or the hands may be protected by

rubber gloves or petrolatum. Sometimes it is cleaner to apply the gauze about the part and then to moisten it by pouring the solution on the gauze directly from the bottle. Ordinarily, scrubbing the hands in soap and water immediately after contact, with or without a preceding soak in alcohol or ammonia water, readily removes all but the faintest traces of yellow discoloration.

In fresh burns of the first and second degree, or superficial lacerated wounds, no preparation is necessary if the parts are tolerably clean. If the skin is dirty it should be gently washed clean with a gauze sponge dipped in soap and water, and then rinsed off with sterile water or a weak antiseptic solution. Any blebs which have formed may be opened aseptically at their most dependent point, and the contents expressed. One dressing usually suffices in these cases, unless the lesion is extensive. If a burn has received previous treatment with ointments, or a carron oil or other emergency application, this should be carefully wiped away, so as not to interfere with the action of the picric acid.

In burns of mixed degree the same principles are to be followed, except that wherever the subcutaneous tissue is exposed, more particular care should be exercised in rendering the lesion aseptic. If a small area of third-degree burn is well cleaned up at the start and is dressed aseptically, it will granulate without pus formation and dermatize rapidly. Third-degree burns covering an extensive area should not be treated by picric acid. Ordinarily one or two dressings will suffice to heal the first and second degree elements of a mixed burn, and after that the granulating areas can receive attention.

The treatment of granulating areas, whether fresh or chronic, by picric acid is successful only in proportion as the exudation of pus can be controlled. Areas of third-degree burn may be made to heal aseptically under picric acid with an even granulating surface without exuberance or purulent discharge, which dermatizes rapidly with a smooth and supple cicatrix and very slight scar contraction, and forms an ideal base for a Reverdin graft.

A chronic ulcer may, under proper circumstances, be cleaned up and freshened so as to respond similarly to picric acid treatment. If the lack of healing depends on interference with circulation, as in varicose ulcers, the patient should be kept in bed with the part elevated. The limb and ulcer should be scrubbed with soap and water and washed off with ether and 60 per cent. alcohol; exuberant granulations should be trimmed down, and the marginal epithelium, if callous, should be lightly curetted and an aseptic picric acid dressing applied. The dressing should be changed daily, with a repetition of the cleansing, until the purulent discharge has ceased. After this, the ulcer will dermatize rapidly under dressings every three to six days.

For superficial lacerated and incised wounds and abrasions the solution acts well. Such lesions, if not too extensive, after being cleaned up with some antiseptic, may be expected to heal under one or two dressings in four to six days. Septic blebs, such as frequently occur on the hands, in paronychia, from pin-pricks, following burns and scalds which have not been attended to, and on the feet from chafing and bruising, respond readily to picric acid. If the tops are trimmed off, the pus wiped away with a cresol-soap solution and dried, one application of picric acid will usually suffice to form a new and substantial horny layer over the

denuded epithelium—unless the basal layer has been destroyed and the subcutaneous tissue exposed.

The local action of picric acid solution has been the subject of considerable speculation. Its essential action may be referred to its power of coagulating albumin. Over any clean denuded surface it forms a protective, aseptic scab, by coagulation of the secreted serum, which seals up ruptured lymph-spaces, protects exposed nerve-endings, and splints the wound in such fashion that epithelial proliferation may proceed rapidly beneath, simulating Nature's method. This artificial scab protects against infection from external sources and promotes rapid and painless epidermatization.

In burns of the first and second degree, and other superficial lesions, the original dressing may be removed after three or four days and the wound will be found healed into a flat, pliant scar. If the gauze adheres to the scab it should be moistened with picric acid to avoid pulling away the scab, which may be softened with boric ointment and removed, or allowed to remain until it comes off—unless there is suspicion that pus is imprisoned beneath. If there still remain unhealed portions the dressing should be renewed.

It is essential that the wound be clean and aseptic at the time of the first application. Pus may become confined beneath a scab, or, in a lesion of considerable size, the gauze may become adherent at the edges by inspissation of the secretion and the pus collect under tension. In either case the lesion is likely to become converted into an ulcer. In third-degree burns, when doubt exists as to the sepsis or asepsis of the lesion, it is wise to inspect the original dressing within forty-eight hours.

In comparison with other commonly used dressings for lesions of this nature, picric acid solution stands out in marked relief as the only agent actually encouraging epidermatization. Oils and greases usually employed in burns are ordinarily far from aseptic, and they tend to macerate the tissues with which they come in contact and prepare it as a suitable medium for the multiplication of the bacteria which they themselves supply. Other solutions employed for their antiseptic properties, such as phenol, corrosive sublimate and cresol-soap solution, oppose epithelial growth in proportion to their antiseptic power, by their chemical action. Picric acid, on the other hand, is distinctly keratoplastic—it is bland, unirritating, definitely antiseptic, if properly used is non-toxic, and at the same time it promotes so rapidly the formation of epidermis from the basal layers that it has been said "with it one can create epidermis at will."

Pain, which has been noted with the stronger alcoholic solutions, is rarely present when the watery solution is used. Sometimes over an area of a third-degree burn of considerable size, smarting is felt on the first application, but this is momentary and not severe, and is followed by a complete and permanent analgesia.

CONCLUSIONS

The saturated aqueous solution of picric acid is incontestably superior to any other antiseptic surgical dressing at our disposal for the treatment of superficial wounds and lesions in which the rete Malpighii of the skin is not completely destroyed—particularly in first and second degree burns. It is cheap and simple in application and induces rapid regeneration of the skin without pain or irritation. Deeper lesions may be made to heal by the formation of a smooth, level, non-secreting granu-

lating surface, over which dermatization will proceed rapidly, or which will serve as an ideal base for the reception of Reverdin or Thiersch grafts. The mild toxic symptoms which have been reported as occasionally occurring will never be seen if reasonable care is exercised.

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COLITIS *

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That there should be such a conflict of professional opinion regarding the nature and concept of colitis is perhaps not surprising when we consider its protean characteristics.

The more experience one has in dealing with these cases the more likely is he to be convinced of the futility of attributing to them either a common origin or a constant pathology. The term "colitis," as here used, is intended, therefore, to include both conditions associated with catarrhal inflammation and those in which the disturbance in colonic function is dependent on a secretory neurosis. I have excluded, however, cases of gastro-enteritis, enterocolitis, and all conditions in which the colonic involvement seemed of secondary importance, as also the acute forms of colitis.

The statistics given are based on a series of 625 cases observed during my four years' residence at French Lick Springs. All have one feature in common, *viz.*, an excess of mucus and, with few exceptions, pain and tenderness along the course of the colon. I have not attempted a further classification under the headings of colica mucosa and intestinal catarrh, for the reason that while I believe that a certain proportion of such cases, as clinically observed, may be readily recognized as belonging to one or the other of these forms, there still remains a considerable number which, either for the lack of sufficient data or because of the coexistence of certain features supposedly characteristic of each of these types, cannot be thus differentiated with certainty.

ETIOLOGY

From the standpoint of etiology, neurotic influences, both hereditary and acquired, undoubtedly play an important rôle, for, with few exceptions, the evidences of a neurosis are present, yet I am by no means convinced that such influences are necessarily primary. Not a few of these cases have apparently had their origin in an intestinal catarrh occurring in early childhood, although the symptoms present have exactly corresponded to the classic descriptions of colica-mucosa. On the other hand, I believe that there are many which in their inception are simple secretory neuroses, are at a later period complicated by a catarrhal inflammation, the result either of fecal retention or of measures employed for its relief.

Of the patients whose cases are included in this report, forty-four were under 20 years of age, the youngest 3. Fifty-six were over 50, the oldest 78. The greatest number were between the ages of 30 and 40 years. The duration of the disease has varied from three months to twenty years, usually from two to six years.

SYMPTOMS

In 87 per cent. the symptoms first observed were those of a disturbance of digestive function; in some it was attributed to the stomach, more often to the intestinal tract, particularly the colon. Fifty-four per cent. gave a history of constipation; in a majority of the cases, of the spastic variety. In 15 per cent. diarrhea was present more or less constantly, the number of stools varying, as a rule, from two to five daily. Frequently constipation alternated with diarrhea; in a few the stools were apparently normal.

Mucus, as has been stated, was present in all cases in appreciable amounts. In 36 per cent. it existed in the form of casts or tenacious inspissated shreds, showing evidences of pressure and retention. In the remainder, it was found in the form of small flakes more or less mixed with fecal deposit or in gelatinous masses sometimes passed alone. The appearance of the mucus was, however, most variable, not only in different cases, but in the same case at different times, so that very often it was without special diagnostic significance.

Colic was a prominent feature. In only 15 per cent. was this symptom entirely absent. In 35 per cent. it was described as slight or moderate in degree and in the remainder as at times severe. Neurotic tendencies, sometimes of the most manifold nature, were exceedingly common, as were also autotoxic symptoms.

Physical examination showed gastropnoia in 17 per cent. of the cases and enteropnoia in 24 per cent. The right kidney was palpable in eighty-four cases, the left alone in nine, and both kidneys in fourteen. Tenderness over the course of some portion of the colon was present in about 90 per cent. of the cases. Most commonly it was over the sigmoid flexure. Next in point of frequency was the cecum and then the transverse colon. Very often it included both the ascending and descending colon and in about 15 per cent. it was quite general.

Urinalysis showed indican in excess in 34 per cent. and urates in 27 per cent. Oxaluria was present in 10 per cent. and phosphaturia in 23. Other abnormalities of renal function were probably not more common than might be expected in a like number of cases of other diseases.

Among the other symptoms observed, that which was most frequently complained of was a disagreeable sensation in the abdomen, hardly amounting to actual pain and usually referred to the region of the descending colon or sigmoid. Gastric distention, eructations, burning, regurgitation, coated tongue, and a bad taste were common symptoms; nausea less so. Cardiac palpitation, arrhythmia, intermittence of the pulse and precordial distress were often a source of much anxiety to the patient, as were also vertigo, and unusual fatigue. Insomnia, migraine, and general neuralgic pains still further added to their discomfort. Mental depression of some degree was a very constant feature, in some instances amounting almost to hypochondriasis.

Many of these phenomena were probably merely the evidences of the underlying neurosis, but most of them, I believe, were the result of auto-intoxication, as they usually disappeared or were much mitigated as soon as the disturbance of digestion was relieved.

DIAGNOSIS

The diagnosis in typical cases of colitis is not difficult, although mistakes are common, and its significance is often overlooked, even when its existence is recognized. I am sure that this is true in a considerable number of

* Read before the American Gastro-Enterological Association, St. Louis, June, 1910.

the cases I have seen, a majority of which have been referred by other physicians. Many of these patients have come with a diagnosis of appendicitis or gall-stones, some of them postoperative, yet the symptoms present were apparently the same as those which had existed from the beginning of the illness.

I am confident that operations of this kind would be undertaken much less frequently if every colitis patient were properly treated from the incipency of the case, and that the results of these operations, when indicated, would be far better if more attention was given to the after-treatment of the colon.

Fecal examinations are an important part of the investigation of these cases and in those reported such examinations have been the rule. Most frequently, they have been macroscopic only, but in a considerable number, microscopic and chemical as well.

It is easy to determine, so far as the individual case is concerned, whether the difficulty in digestion has to do chiefly with the fats, proteids or carbohydrates, when the patient is on his ordinary diet, and the information thus obtained is sometimes more valuable than when a systematized diet is employed.

While a very cursory inspection will suffice to determine the existence of mucus, its character and amount, the color and consistency of the stools, presence of intestinal sand, blood, worms, and the grosser evidences of undigested food-products, to form an accurate opinion of the digestive function, a microscopic examination should also be made and in many cases it is desirable to employ a test diet such as has been recommended by Schmidt.

While attaching much importance to the results of examinations of this kind, I would also emphasize the point that the results, to be of practical value, must, as in all laboratory investigations, be considered in connection with the clinical history and physical signs.

COMPLICATIONS

Among the various conditions complicating colitis, gastric disorders were decidedly the most common. In only 18 per cent. of the cases was there an absence of such symptoms, although very often they were comparatively slight. Examinations of the stomach contents were made in most of the cases in which such features were at all prominent, as I believe they are not only of value from the standpoint of diagnosis, but more especially for the information they afford as regards the diet. Of these cases, gastritis was present in 15 per cent. and hyperchlorhydria in 28 per cent. Sixteen cases showed achylia gastrica. In many of the remaining cases, no particular abnormality was apparent. Appendicitis was, or had been, present in seventy-eight cases; in thirty-four it was postoperative. Symptoms of cholelithiasis existed in forty-two cases, in nine of which operation had been performed. Gouty manifestations were of very frequent occurrence, usually of an atypical form. Cutaneous eruptions, such as eczema, urticaria, acne and psoriasis were comparatively common also.

TREATMENT

The treatment will, of necessity, vary with the indications present. Patients differ so radically in the prominence of different symptoms, in the state of nutrition, in their response to psychic impressions and in the manifestation of idiosyncrasies towards certain kinds of food, to say nothing of the innumerable influences of environment and habits of life, that one must be guided largely by general principles.

Whether we take the view that the indications are to be sought solely from the side of the neurosis or that we should take some cognizance of the digestive symptoms, more than to stimulate intestinal peristalsis, one thing is certain and that is that we shall not succeed by medication alone. I do not hesitate even to say that on the whole medicines are likely to do more harm than good.

Here, as in other diseases, the important thing is a recognition of the influences that have caused it. Our patient has not been living correctly or the condition would not exist, and we should be just as painstaking in our investigation of questions pertaining to his environment, his diet, and his habits of life generally, as we are in obtaining data on which to base a diagnosis.

If the case is brought to us at a time when the only evidences of the trouble are the presence of mucus and pain, plus certain neurotic disturbances common to other functional neuroses, the treatment would not differ materially from that which would be applicable to neurasthenia without special intestinal involvement.

So far as my own experience goes, however, such uncomplicated cases as these are the exception and not the rule, for even though there may have been a simple neurosis in the beginning, evidences of other disturbances of digestive function and not infrequently changes in the organs themselves are likely to follow in more or less rapid succession.

Ordinary hygienic measures, such as fresh air, exercise, rest, baths, etc., are always applicable and if, as is generally the case, the nutrition is below par, we must see that the diet is sufficient in quantity to meet these requirements; but to accomplish this it is necessary that it be of a quality that will not overtax the digestive capacity.

While I am confident that much harm is often done by concentrating the patient's attention on dietetic details, and that the prolonged and frequent use of enemas and other local treatments may act unfavorably in the same way, I am equally positive that when judiciously employed, such measures are distinctly beneficial.

There is no scheme of diet that is applicable to all cases. If we can exclude any catarrhal condition, a coarse regimen, rich in cellulose, such as is recommended by Von Noorden, will often succeed admirably, but the change, I believe, should be made gradually and not abruptly. If pain is a prominent feature, if there is much tenderness over any part of the colon, great distention or marked evidences of undigested starch granules in the stools, it will only aggravate these symptoms. Hyperchlorhydria and gastroptosis are often contraindications and one or the other of these conditions is not infrequently to be found in cases which afford the most typical examples of the secretory form of this disease.

The best diet in such cases is one that is small in bulk, that is easily digested and that leaves a small residue. It may not relieve the constipation, but it will lessen the patient's discomfort. As improvement is observed in the secretory and sensory disturbances, we can, by a diminution of proteids and the substitution of fats and carbohydrates, promote a better motor function. Fruits, honey, butter, olive oil, the coarser breadstuffs and vegetables all act to increase the volume of alimentary residue and to stimulate peristalsis. If diarrhea is present, or if experience has shown that this condition is readily precipitated, only the blandest articles of food should be permitted. In dealing with constipation, diarrhea and other attendant local phenomena, I believe that the milder mineral waters of the alkaline-saline

group are among our most useful remedies. This opinion I have often heard expressed also by physicians practicing in Carlsbad, Kissingen, Homburg and other European resorts where the waters are of this type.

I have used the French Lick waters in all of the cases here reported and, after making due allowance for such favorable extraneous influences as resorts of this character afford, I am confident that much benefit has been obtained from their use.

I have not, however, even in the cases in which constipation was most obstinate, prescribed the water in large quantities nor have I relied wholly on the drinking of the water but have employed it locally as well. The greatest benefit to be derived from its use is, I believe, in its influence on secretion, and for this purpose large quantities are not advisable. Warm enemata of olive oil are often of the greatest service in the cure of the attendant constipation. Tonic baths, conjoined with local and general massage, have been largely used both for their effect on the circulation and the relief of intestinal atony. Warm fomentations over the abdomen are very grateful if there is much pain or tenderness.

The indications for abdominal massage are much the same as for the coarser forms of diet. It should never be employed when it produces pain. In many cases I have found that vibratory massage acted even better than when manually performed.

Exercises, particularly such as bring into use the abdominal muscles, are most beneficial in promoting peristalsis, and in fact outdoor exercises generally, provided they are not carried to the point of undue fatigue, serve an excellent purpose. The greater the diversion and interest they afford, the better will be the results obtained.

There are few conditions in which the psychical element enters more largely into causation than it does in colitis, and we are justified, I think, in availing ourselves of the same influence in treatment; in some cases its importance is to be placed before that of any other measure. Optimism on the part of the physician and his ability to obtain the confidence of the patient count for much in the relief of mental depression, a common feature of these cases, and like influences are to be obtained from change of scene and cheerful surroundings.

SURGICAL TREATMENT

As regards the operations of appendicostomy and cecostomy recently exploited with some enthusiasm by certain surgeons in the treatment of colitis, chronic constipation and other intestinal conditions hitherto regarded as within the scope of medical art, I can only say that I believe it is possible to reach any part of the colon by lavage through the rectum and the advantages to be gained in providing an artificial opening through which to apply local treatments are more than offset by the depressing effect of the operation and the presence of a fistulous tract which must later be closed. As Richardson has recently observed:

Operations on the neurasthenic return nothing to the patient. Her last state is worse than her first and is often pitiable. The best rule is to forbid surgery until every medical and palliative measure has proved useless.

PROGNOSIS

The prognosis is, as a rule, favorable, although improvement is often tedious. It is impossible to give any statistical data on this point regarding the cases here referred to, as most of them have been lost sight of

after leaving the springs. The immediate results have been most gratifying, and in a large proportion of those cases in which I have been able to follow the subsequent history, the improvement has been of a more or less permanent character. A considerable number have been cured.

A CASE OF EXTENSIVE LEUKEMIC INFILTRATION OF THE MAMMARY GLAND AND SKIN *

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This case is reported because it exhibits some rare features, as lymphatic infiltration of the lips, nose and pinna, and a most remarkable involvement of the mammary glands, which I have been unable to find described in the literature.

History.—Mrs. S., Austrian, aged 47, came to the Rush medical clinic complaining of shortness of breath, hoarseness, swollen lips and nose, and pain on swallowing. There was nothing of any moment in the family history. The patient had always enjoyed good health, and had had four children; no miscarriages. Her teeth, however, had been in a bad condition for years without receiving proper care. Her present trouble began about nine months before she came to the clinic with redness and itching of the nose, which was soon followed by swelling of the nose and lips. During this time she had been treated by various physicians for "cold" and eczema, and in the course of the treatment all her teeth were extracted.

Examination.—The patient was a medium-sized woman, fairly well nourished, skin clear; there was no jaundice or abnormal pigmentation. The lower eyelids were edematous; the pupils reacted to light and accommodation, and were rather contracted; the eye muscles worked well. The retinae showed spots of a grayish exudate; the margins of both disks were somewhat indistinct and striated on the nasal side, but the sight was not appreciably impaired. There was no exophthalmos.

The nose appeared symmetrically enlarged, reddish in color, firm and indurated on palpation. Breathing through the nose with mouth closed was difficult and brought out a marked stridor.

The lips were considerably swollen, the upper somewhat more than the lower one; the mucosa was tense and shiny, the tissue hard and indurated. The patient complained frequently of a severe burning and itching sensation of the lips and to a less degree of the nose. The oral cavity was without teeth; the gum margins were ulcerated and bleeding, the palate was abnormally arched, and posteriorly there was a diffuse swelling which extended on both sides into the pharynx. Tonsils, palate and postpharyngeal wall, all seemed involved in this swelling. The voice was very hoarse or whispering. The dyspnea was at times associated with distinct stridor and marked inspiratory descent of the trachea. Periodically there appeared a violent, brassy cough.

The pinna of the right ear was enlarged to almost double its normal size and was of a reddish color, the tissue being firm and infiltrated. The left pinna was normal. Both drums were retracted and opaque in color. The hearing power was not diminished to an appreciable extent.

All superficial lymph-glands of the body were enlarged to a various extent. The least enlargement was in the glands of the neck, especially in those of the posterior triangle, although even these were easily palpable. There was no fusion of the glands and no fixation of the overlying skin. The largest superficial glands were those of the axillae.

The mammae appeared symmetrically enlarged, firm and infiltrated. The glands were somewhat movable; the skin over them was tense, shiny, but not fixed; the nipples were not

* From the Medical Clinic of Rush Medical College and the Department of Pathology of the University of Chicago.

retracted. No separate nodules could be felt in the glands. No connection between the mammae and the large lymph-glands of the axillae could be made out. The apex-beat was in the fifth space, inside the nipple-line and somewhat heaving. Extension of the heart to the right of the sternum could not be established by percussion. There was no thrill. The first sound in the mitral area was loud and short, ending in a distinct murmur. At irregular intervals an extra-systole was thrown in, and later a distinct gallop-rhythm developed. In the pulmonic area there was a rough, grating, systolic murmur, at times distinctly purring, so that pulmonic obstruction was suspected. (At autopsy, however, the valves as well as the aorta and pulmonic artery were found to be normal.)

Percussion note over the right lung was slightly dull, especially over the anterior aspect. Breath sounds were somewhat distinct, more so over the right lung. There were no râles.

The abdomen was full, and in the left hypochondrium a tumor mass was readily felt, which issued from beneath the left costal arch and extended beyond the umbilicus. The tumor was somewhat movable, descended with respiration, was slightly tender, of hard consistency, notched on the median surface. Slight percussion over the tumor brought out a flat note. The lower margin of the liver descended to about 2 inches below the costal arch in the mammary line; its consistency was not much increased; its surface was smooth. No glandular masses could be palpated in the abdomen. The umbilicus was freely movable and not retracted.

At the time of admission to the clinic a skin tumor as large as a small walnut was noticed in the posterior axillary line of the right side. This tumor disappeared later. The deep reflexes were normal.

The blood-count showed 110,000 white cells, 82 per cent. small and 6 per cent. large lymphocytes, and a moderate secondary anemia.

Transient skin-rashes (areas of hyperemia) were observed at different times.

The urine contained traces of albumin and a few casts; gravity 1.020.

Course of Disease.—The patient was under observation about three weeks. During this time the dyspnea was increasing and caused much discomfort to the patient. Tracheotomy was considered, but the general condition of the patient seemed to exclude such an operation. Venesection gave temporary relief. Toward the end there was marked cardiac insufficiency with gallop-rhythm, very irregular pulse and pulmonary edema.

According to the statement of the patient the disease began with redness and itching of the skin of the nose, that was soon followed by swelling of the nose and lips. She was treated for months for eczema by various physicians, and it seems likely that at this time the general swelling of the lymph-glands was not apparent. It is therefore reasonable to assume that the skin lesion was the earliest manifestation of the disease.

The most remarkable feature in this case was found in the condition of the mammary gland, a condition which I have failed to find described in the literature, although in a very few cases lymphomata have been reported in the lacrimal, parotid and maxillary glands in association with lymphomata outside the glands.¹

An autopsy was performed by Dr. H. Gideon Wells, and the histologic study of the tissues was made by Dr. B. F. Davis, and an abstract of their report follows:

There were found the usual lymphatic hyperplasias of chronic lymphatic leukemia, lymphoid infiltration of the viscera, and in addition lymphoid infiltration of the skin

of the nose and lips. The mammary glands were found replaced by a mass of lymphoid tissue of uniform consistence, resembling in its gross appearances sarcomatous tissue, the mass of new tissue when dissected away from the skin and adjacent fat tissue from one breast measuring 12 by 12 by 4 cm., and weighing 350 gm. Microscopically the normal tissue of the mammary gland was found to have disappeared almost entirely, the remains of an isolated gland tubule or duct being found only rarely in the mass of large and small round cells which make up the growth. These cells infiltrate the connective tissues in the nipple and areolae up to, but not into the epithelium, accounting for the swollen condition of the areolae. (A full report of the anatomic findings will be published in the *Transactions of the Chicago Pathological Society*.)

A NEW STAIN FOR BACTERIAL CAPSULES WITH SPECIAL REFERENCE TO PNEUMOCOCCI *

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After much experimentation the following method for staining bacterial capsules has been devised. It has proved of such value in a study of autolysis of pneumococci, in their identification in culture and exudates as well as in staining the capsule of *Streptococcus mucosus* and, with a slight modification, the capsule of the *Bacillus mucosus* also, that a brief report seems desirable at this time.

DIRECTIONS

Make a thin smear on a perfectly clean slide or cover-glass. If the material, such as sputum, is too thick, add enough distilled water so that it can be spread evenly by means of a piece of fine tissue or cigarette paper. In case of cultures (blood-agar, serum, glucose or Loeffler's blood-serum being preferable), remove a small amount of the growth from the surface of the medium and at once mix thoroughly with a loopful of serum on the slide, or, better still, make a rather dense suspension in a few drops of distilled water and then mix an equal quantity of this suspension with serum, and spread by means of tissue-paper. As the smear becomes nearly dry cover for ten to twenty seconds with 5 to 10 per cent. aqueous solution of tannic acid; wash in water and blot; stain with carbol [saturated alcoholic solution gentian violet (Grübler) 1 pt., 5 per cent. phenol in water, 4 pts.] or anilin gentian violet, half a minute to a minute, heat over flame but do not boil; wash in water again; Gram's iodine solution for half a minute to a minute; decolorize in alcohol (95 per cent.); stain for from two to ten seconds, depending on the thickness of smears, with saturated alcoholic (60 per cent.) solution of Grübler's eosin; wash in water and blot finally, clear in xylol and mount in balsam, or examine directly. (If the organism, like the *Bacillus mucosus*, is Gram-negative, the bacillus may be stained with Loeffler's or aqueous methylene blue.)

The pneumococci are stained deeply brownish black, sharply differentiated from the capsule, which is stained pink. Beautiful results are also obtained with the *Streptococcus mucosus*. In the thickest part of the smear the space occupied by the capsule may be perfectly clear; elsewhere in the smear, if properly made, where the conditions are suitable for absorption of eosin, the capsule is stained deeply pink; not rarely a clear retraction zone (often mistaken for the capsule in former methods) may be seen peripherally to a distinctly stained, often large capsule.

In case of sputum in which the cocci are embedded in a more or less tenacious mucus the capsules, at times, are not rendered stainable by the above method. In that case it is well to fix and stain simultaneously with the 2 per cent. aqueous tannic acid, 4 parts, and saturated solution of gentian

1. Pinkus: Ueber die Hautveränderungen bei lymphatischer Leukämie und Pseudo-Leukämie, Arch. f. Dermat. u. Syph., 1899, I, Nos. 1, 2.

Nekam: Leukämie der Haut, Monatschr. f. pract. Dermat., 1899, Ergänzungsheft.

Kaposi: Pathologie und Therapie der Hautkrankheiten, Vienna.

Kreibich: Ein Fall von leukämischen Tumoren der Haut, Arch. f. Dermat. u. Syph., 1899, xlvii, 185.

Kümmel: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1897, ii, 111.

* From the Memorial Institute for Infectious Diseases. For a more complete report see Jour. Infect. Dis., 1911, viii.

violet, 1 part. This modification often gives beautiful results. The cocci, however, decolorize easily and the tannic acid-gentian-violet may be followed by carbol-gentian-violet and then the usual procedure. Ordinary carbol-fuchsin, diluted 5 to 10 times and aqueous eosin (50 per cent. sat.) may also be used to stain the capsule, although the saturated alcoholic (60 per cent.) eosin has given the best results. Decolorization after the modified Gram procedure of tannic acid-fixed smears is more rapid than in the case of heat-fixed smears, which should be borne in mind.

By the use of this method it has been determined that the capsule of the pneumococcus and allied organisms is not difficult to preserve or readily soluble in water, as is generally believed. To stain the capsule is a problem of rendering it stainable rather than one of preservation. The reactions which render the capsule stainable appear to be colloidal reactions.

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A PROBABLE CASE OF ANAPHYLAXIS

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PHILADELPHIA

In view of the present experimental investigations into the nature and occurrence of the reaction of anaphylaxis, and of the importance of the question to human serotherapy, it is important that clinical record be made of all observations bearing on the phenomenon. The following case of illness, not clearly understood at the time of its occurrence, now appears clearly to have been an instance of anaphylaxis, and is therefore reported.

The subject of the condition, a physician in San Francisco, in the winter of 1900-1 performed an autopsy on a case of bubonic plague. The body was that of a white man, and the history and location of the house in which the illness occurred led to no suspicion as to the nature of the disease. It was, in fact, the first death of a Caucasian that occurred in California from bubonic plague. No precautions were taken in the performance of the necropsy, and when on its completion the appearance of the organs and the microscopic findings of bacilli definitely determined to correspond in all morphologic features to the plague bacillus led to the diagnosis of plague, it was felt that the degree of exposure had been so great as to warrant the use of the Yersin serum. This was accordingly injected, 30 c.c. being used. Infection with plague did not occur, and in the course of time the incident was quite forgotten.

Nearly five years later the same physician was hunting deer in the mountains of California, in company with another man, the men having with them two horses. One of the horses, being green to the chase, resisted the efforts of the hunters to strap a dead buck on its back, and a lively tussle took place, during the course of which the physician had his forearms and hands badly scratched and lacerated by the metal parts of the bridle of the horse. On his return to the city a few days later, as he did not feel satisfied with the condition of the wounds, which had not been properly cleansed of the horse hairs and dirt from the horse, and which had not been treated with an antiseptic at all, these were all thoroughly cleansed, disinfected, and 20 c.c. of antitetanic serum injected as a prophylactic.

For a number of hours after the injection of the tetanus antitoxin, nothing was noted. Then suddenly the man was stricken with a universal, giant urticaria, with profound prostration. The attack lasted in its acute phases four days, the symptoms and signs being as follows:

1. *Giant Urticaria*.—This was very marked, the body being at times swollen almost past recognition. Three times the condition receded in part, only to recur with renewed violence. Following the acute attack, the skin did not reach its normal

condition for ten days. The usual symptoms of this condition were present in great intensity, itching being almost intolerable.

2. *Tachycardia*.—With a normal temperature, the pulse during the attack ranged about 130 per minute. Physical examination of the heart elicited no abnormal signs other than the excessive rate.

3. *Diarrhea*.—A diarrhea of choleraic violence occurred, accompanied by the passage of large exfoliations or membranous casts of the intestine. This condition lasted for three days.

4. *Neuritis*.—On the night of the third day, a sudden sharp pain was felt in the right deltoid region, the skin over which soon gave evidence of anesthesia. Palsy in the muscles supplied by the circumflex nerve rapidly developed with the regular signs of a circumflex neuritis. The muscles wasted, gave typical reactions of degeneration, which, with the cutaneous anesthesia, persisted for months. Recovery, which finally occurred, was not complete, and there exists still some functional disability in the use of the deltoid and of the muscles lying between the deltoid and the spine of the scapula. Whether the neuritis was confined to the circumflex or extended to other branches of the plexus, does not concern the present report.

5. *Prostration of the Neuromuscular System*.—This may have been due, in part at least, to the diarrhea. Following recovery, however, the man was for a number of weeks profoundly asthenic.

The subject of this attack has never had any difficulties with asthma, nor has he ever been in the least "sensitive" to horses. The probable interpretation of the attack as an instance of anaphylaxis is based on the history of the two injections of horse serum with an interval of five years, and of the resemblance of the attack to the features of experimental anaphylaxis. It would be of great importance to determine whether now, after a further interval of five years, the individual is still "sensitized." Instructive as the results of an injection of horse serum at this date would be, the subject declines the experiment.

4522 Locust Street.

A CASE OF AIR EMBOLUS OCCURRING DURING OPERATION UNDER AIR-INFLATION URETHROSCOPY

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Some years ago I introduced to the profession my air-inflation urethroscope, and since that time I have been consistent in my advocacy of this instrument for both diagnostic and operative purposes. Within the past year, however, I have observed certain phenomena which have led me to question the wisdom of intra-urethral operations carried on under air-inflation. I have, therefore, taken advantage of this opportunity to sound a note of warning to users of this method.

Fenwick, in urethroscoping under air-inflation a stricture complicated by recent false passages, noted an emphysematous condition following, and speculated on the possibility of serious associated conditions. His description, quoted by William R. Fox,¹ is as follows:

I examined with inflation a patient who had had profuse bleeding from attempts at catheterism some few hours before applying to me for relief. I was able to find the opening of the false passage with ease. It lay just below the pin-point orifice of the strictured part of the urethra, and it appeared as a bloody-edged, ragged slit. But the patient called out almost immediately that something was running down the

1. The Urethroscope: Its Development and Its Use. Australasian Med. Gaz., Oct. 20, 1906.

inside of his thighs, and I then became aware that air was passing freely through the opening of the "false passage" and escaping into the tissues of the perineum. There was no doubt but that the false passage was very extensive. No ill results ensued, but it is easily conceivable that damage of a grave description can be inflicted by unfiltered air passing over an inflamed surface and opening up extensive cellular planes in the thighs, perineum and pelvis.

Within the past year, while opening up infected follicles in the anterior urethra, I have observed two cases in which localized emphysema in the cellular tissue of the pendulous urethra occurred as a result of the air-inflation used during the operation. In neither of these cases was the local condition marked, nor were there any generalized symptoms. In both cases the emphysematous condition gradually disappeared within a few days without giving rise to any untoward symptoms.

In the following case, which forms the basis for this report, the emphysematous condition was so extensive, and the immediate symptoms so alarming in character, that a fatal issue seemed unavoidable. The possibility of similar complications arising in other cases of a like character has led me to the belief that extreme caution should be used in all intra-urethral or intravesical operations performed under air-inflation.

F. H. B., Douglas, Arizona, aged 35, married, family history negative, gave a history of intermittent urethritis for the previous fifteen years. The patient was first seen on Oct. 3, 1910.

Examination showed typical chronic urethritis of the antero-posterior type. Urethroscopy disclosed diffuse infiltration, a few infected urethral follicles tending to become cystic, and a band-like stricture on the floor of the urethra just anterior to the peno-scrotal junction.

After preliminary treatment, the air-inflation urethroscope was introduced October 12, and preparations were made for dividing the stricture through the urethroscope. The strictured area was cocaineized by the application of a 2 per cent. solution, and after a few minutes the urethra was inflated with air and the stricture divided. An emphysematous condition of the cellular tissue in the neighborhood of the stricture was noted and almost immediately the patient complained of pains in the epigastrium and began to cough. He became rapidly cyanotic and the radial pulse became imperceptible. Auscultation over the cardiac area revealed the "whirr" of what was apparently considerable quantities of air passing through the heart. The heart-sound rapidly became feeble and then could not be detected. Respiration quickly ceased, not suddenly but progressively, as in the dying. The pupils were fully dilated and the eyes were fixed; in fact, the whole appearance of the patient was that of a cadaver.

Artificial respiration was employed and whisky administered hypodermatically. Within a short time feeble signs of returning life were noticed and the patient gradually recovered consciousness, though some air could still be heard whirring through the heart. The patient still complained of a feeling of oppression in the epigastrium and this feeling was noticeable in a gradually diminishing degree for a period of about one week.

The local emphysema was not marked and seemed to involve only the cellular tissue of the pendulous urethra. There was no emphysema of the scrotal tissues.

On the following day the patient complained of tenderness in the hypogastrium, especially marked on the left side. Examination revealed a fairly extensive emphysema of the abdominal wall, which slowly disappeared in about one week. No other symptoms of an untoward nature were noted.

There can be no question but that the causative factor of the serious symptoms in this case was air embolus. It is, however, astonishing what an amount of air was forced into the circulation without a fatal issue. This case cannot be regarded as merely an "accident" occurring during operative urethroscopy under air-inflation,

though like symptoms have never been noted in my experience in similar operative work, which covers several hundred cases. Like "accidents" appeal to me as being ever-present possibilities in such work, and I would urge extreme caution in the employment of air-inflation urethroscopy for operative purposes.

707 Gloyd Building.

THE CAUSE AND TREATMENT OF DEFECTIVE MUTATION OF THE VOICE

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The change of the voice at puberty sometimes goes on improperly, and the young man acquires a high, falsetto tone instead of the regular tenor or base. The condition is very troublesome to the business man, and is particularly obnoxious in public speakers, clergymen, lawyers and military officers.

An examination of the larynx in such a condition shows the vocal cords to be excessively shiny and white, and apparently very tightly stretched. An external examination shows that in speaking or singing the larynx is pulled high up under the tongue and often rather forward toward the chin. The condition is evidently due to overcontraction of both the intrinsic and the extrinsic muscles of the larynx, whereby the vocal cords are stretched too tightly. The overcontraction is found only during singing and speaking. It is a purely nervous habit.

The treatment begins by teaching the person to sing on very low tones. At first the tones will be harsh and rattling, but they will gradually become natural. The pitch of the song is gradually raised until the patient sings over the normal range of voice. Another exercise consists of chanting sentences on a single low tone, which is gradually raised in pitch in successive exercises. A third exercise consists in singing the first word or two of a sentence on a low tone and finishing it by speaking. In a fourth line of work, exercises in singing and speaking are used while the patient presses the larynx down and backward by putting his fingers on the hyoid bone and on the notch at the front of the thyroid cartilage.

With such direct methods of treatment it is possible to eliminate the defect entirely, usually in a very short time. The cure is often completed in one or two weeks.

87 Madison Avenue.

Therapeutics

DRUGS USED TO ACT ON THE CIRCULATION

No part of the body is more maltreated medicinally than the heart. Some of such mistaken treatment is due to carelessness, some to lack of proper diagnosis and understanding of the pathology of the condition, while at other times it is due to an entire misunderstanding or ignorance of the action of the drugs used. At still other times there may be the most careful discrimination and the best possible judgment combined with a thorough understanding of the condition of the heart and circulation of a given patient, and still a drug will be used that does harm instead of good, or used in too large amount, or in insufficient amount. In other words, with all the knowledge we can bring to bear, it is not always possible to decide exactly what a heart and cir-

ulation need. Many times, probably, it would be better to use no circulatory drug rather than to use a wrong one.

Better to understand when a drug should be used and which drug should be used, it may be well to classify circulatory drugs in a way that will better show what to expect of them. It is absurd to use a slow-acting drug like digitalis when a quick stimulation of a heart is desired. It is also wrong to believe that alcohol will cause any more than a momentary stimulation of the heart; in other words, in cardiac weakness which lasts more than a very short time alcohol for this purpose is contra-indicated. It is also generally inadvisable to give a drug that raises the blood-pressure when a heart is laboring against high pressure.

The drugs used to act on the circulation may be subdivided as follows:

1. Drugs to stimulate the heart: alcohol, ammonia, and camphor.

2. Drugs to depress the heart: aconite (*veratrum*).

3. Drugs to strengthen the heart: caffeine, digitalis, *strophanthus*, strychnin.

4. Drugs to contract the blood-vessels: atropin, ergot, epinephrin.

5. Drugs to dilate the blood-vessels: alcohol, nitrites.

As just stated, alcohol is a cardiac stimulant only for a short time and really acts for good in some abnormal circulatory conditions by dilating the blood-vessels.

Aconite is now rarely needed to depress the heart, as, if there is fever, a coal-tar product not only lowers the high temperature, but also depresses and quiets the heart.

Caffein and strychnin are both stimulants and tonics to the heart.

A cardiac stimulant may be defined as something that will stimulate the heart to greater activity but which, after its action is over, leaves the heart worse than it found it, unless the indication for such stimulation was a momentary one. In other words, such drugs are cardiac whips, and do not strengthen the heart.

A cardiac tonic may be defined as something that braces the heart and at the same time strengthens it; in other words, leaves it better than it found it. Such drugs are indicated in more or less continued cardiac weakness, and are not indicated in sudden emergencies.

As digitalis is one of the most important of the drugs above mentioned, and is a much misused drug, it seems well to describe its action first. The plan used in its description is the plan or scheme that seems the best for presenting the activities of a drug to the man who is to use the drug in actual practice, and the same scheme will be followed when other important drugs are described in this department.

DIGITALIS

Description.—Digitalis (genitive digitalis, Latin feminine noun, third declension). This drug was named by Fuchs, in 1542, after the German *Fingerhut*, a thimble. The United States Pharmacopeia recommends as official the dried leaves of *Digitalis purpurea*, the purple fox-glove, gathered during the second year of the growth of the plant while it is in flower. The *Digitalis purpurea* grows wild in Southern and Central Europe and England, and is cultivated in the United States, but the leaves of the cultivated plants are believed to have less medicinal value than those gathered from the wild plants. The so-called English leaves are preferable to the German leaves because they are cleaner and have

been separated from the stalks on which they grow. Digitalis has rather a disagreeable, bitterish taste, but the infusion, which is made with cinnamon water, is less unpleasant.

The first investigator to obtain a crystalline active principle from this drug was Nativelle, in 1871, but as yet no active or alkaloidal principle has been separated that is so efficient in its action as preparations made from the crude drug by reliable chemists.

The exact chemical constitution of digitalis is not definitely established, but from the leaves by extraction with water and alcohol have been obtained the following:

DIGITALIS: A crystalline glucosid which is often prepared from the seeds and may, therefore, be an impure product containing active principles not found in the leaves. There are probably on the market to-day about four different substances under the name of digitalin some of which contain digitoxin and are therefore much more active and poisonous. Hence a given preparation of digitalin should be carefully tested by small doses before large doses are given. It is fairly soluble in water.

DIGITALEIN: A glucosid obtained from the leaves.

DIGITONIN: A third glucosid obtained from the leaves.

DIGITOPHYLLIN: A fourth glucosid, resembling digitoxin, recently obtained by Kiliani.

DIGITOXIN: A toxic principle more actively poisonous than the above glucosids.

Besides these active principles there are a resin, an acid, and a fixed oil.

There has been a good deal of discussion and difference of opinion as to the relative physiologic activity of a watery preparation of the leaves (the official infusion) and an alcoholic preparation of the leaves (the official tincture). An infusion should represent pretty much the whole activity of the digitalis, as water seems to extract the digitoxin and digitophyllin in the presence of digitonin glucosids. On the other hand, an alcoholic preparation of the leaves represents the best active principles, except the digitonins. The digitalins offered are prepared mostly from the seeds of digitalis. These probably are rarely one glucosid, but represent both digitalin and digitalcin, with a small amount of digitoxin and probably some digitonins.

The most active part of digitalis is probably the digitoxin, and as these crystallin preparations represent less digitoxin than do the fluid preparations of the Pharmacopeia prepared from the leaves, these crystalline substances are not as active nor satisfactory medicaments.

Digitalis was first recommended to the medical profession by Dr. W. Withering, who wrote, in 1785, under the title of "An Account of the Fox-Glove," of the results of using this drug in two hundred cases of dropsy and allied conditions during the previous ten years. In this article he strongly advises the use of digitalis as a diuretic, and also noted that it had good action on the heart.

Local Action.—This drug has no action on the skin, but has a slightly irritant action on the mucous membranes and, hence, when swallowed in strong preparation, or undiluted, or on an empty stomach, or when large doses are long repeated, will cause loss of appetite, nausea, perhaps vomiting, and even diarrhea. Preparations that do not contain digitoxin would not irritate the stomach as much, but such preparations are not so valuable therapeutically. Preparations injected subcutaneously may cause considerable irritation and perhaps inflammation, and even abscesses, though the latter

are rare, but the preparations of digitalin will almost invariably cause some slight pain and slight local induration for a day or two.

The active principles of this drug are absorbed from both the stomach and the intestine, the rate of absorption depending, of course, on the preparation used, its concentration, solubility, and the condition of the stomach. Digitalis is ordinarily absorbed slowly unless there is some local irritating influence to make the absorption more rapid, hence the systemic effects of digitalis do not appear ordinarily for from six to twelve hours after the ingestion of the first dose.

Systemic Action.—The primary and chief constitutional effect of digitalis is on the *circulatory system*. The blood is not altered by digitalis except that it may become of lower specific gravity by a better circulation taking up more lymph. In non-poisonous doses the heart is slowed, its contraction is more energetic, and the blood-pressure is raised. The diastole is prolonged principally by the action of this drug on the pneumogastric center in the medulla, the stimulation of which tends to slow the heart. The contraction of the heart is more energetic on account of the irritation which this drug causes to the cardiac muscle, and this irritation and the resulting increased contraction is greatest on the part of the heart when there is the most muscular tissue, hence the effect is more pronounced on the ventricles than on the auricles, and more on the left ventricle than on the right. Under the action of digitalis the cardiac muscle improves in tone and hypertrophies because of the prolonged diastole giving much needed rest and hence causing muscle-recuperation, and the stimulation which the cardiac muscle receives acting like any other regulated gymnastic exercise to muscle tissue.

Three stages of the action of digitalis on the heart are recognized, the first stage being the one just stated, which is the desired therapeutic action. During this stage we believe that the cavities of the heart which physiologically do not completely empty themselves are absolutely emptied by the sturdy contraction. The papillary muscles tend to contract more completely as well as the other parts of the muscle walls of the ventricles and thus tend to diminish a valvular insufficiency. The prolonged diastole from the stimulation of the pneumogastric nerve tends to a more complete dilatation and therefore the blood more completely fills the cavities of the heart. This dilatation seems to be due to the inhibitory action on the pneumogastric center in the medulla, and also partially to the stimulation of the terminal endings of these nerves in the heart. The increased contraction of the heart, which also contains more blood than before the administration of the drug, expels more with each beat and under greater tension, and this results in raising the arterial blood-pressure.

To repeat, *with therapeutic doses* of digitalis the heart is slowed, the rhythm is normal, and the various parts of the heart contract more sturdily, the action on the auricles and ventricles being the same except that it is more marked where there is more muscle tissue.

With larger doses of this drug, or when the action is greater than therapeutics require, one of two conditions predominates: Either the stimulation of the pneumogastric or the stimulation of the cardiac muscle is too great, and generally the former predominates and the heart becomes very much slowed, and we have what is called the *second stage* of digitalis action. This inhibition acts more decidedly on the auricles than on the ventricles, the latter being more stimulated by the irritation of their greater amount of muscle tissue, and an

irregular cardiac rhythm is caused, the auricles and ventricles not beating harmoniously although both ventricles always contract synchronously. We then have a very slow pulse and an irregular rhythm.

This stage is the stage of danger and the beginning of the *third stage* is not far distant, which is not the stage in which the pneumogastriacs are paralyzed as has been stated, but in which the irritation of this drug on the cardiac muscle becomes so great as to cause the heart to beat very rapidly in spite of the inhibition. There may even be permanent contraction of the ventricles or a permanent systole of the whole heart and stoppage of the circulation. After such stoppage of the circulation the heart may dilate and remain dilated.

Digitalis is a *vasoconstrictor*, causing narrowing of the peripheral blood-vessels by stimulation primarily of the vasomotor center in the medulla oblongata, but it also stimulates the muscular coat of the arterioles. We have then an increased blood-pressure from three causes; from stimulation of the vasomotor center, from stimulation of the muscle-coat in the vessel walls, and from the increased amount of blood thrown into the aorta by the heart; hence the blood-flow in the capillaries is accelerated. The flow of blood through the arterioles and capillaries would, of course, be modified by the degree of the action of the digitalis on the heart. When the heart was toxically disturbed by digitalis the flow of blood in the arterioles would be decreased. Digitalis also increases the blood-flow in the pulmonary circulation as well as in the systemic.

Overaction of digitalis can cause irregular contraction of the blood-vessels so as to cause one or more extremities to feel cold and perhaps numb. Such overaction can also cause a feeling of constriction in the head, especially noticeable in the occipital region.

It is probable that when a heart is in normal condition the blood-pressure will not be much raised by the action of digitalis. If the heart, however, is defective, the blood-pressure is raised by its therapeutic use. In therapeutic dosage, however, it does not much contract the arterioles, although it has been claimed (Loeb) that the coronary arteries under the action of digitalis are lessened in caliber. This is probably not clinically the fact when digitalis is badly needed for a dilated heart, but may be the reason that, when there is supposed to be sclerosis of the coronary vessels with symptoms of angina pectoris, digitalis will generally add to the pain and increase the danger, and should not be used. Digitalis should never be used in internal hemorrhage, unless the hemorrhage is a capillary oozing or venous bleeding. Digitalis may therefore be of value in hemorrhage from the nostrils, in venous bleeding into the bronchial tubes, in venous bleeding from the kidneys, and in hemorrhoids.

An ordinary therapeutic dose of digitalis when the heart is in good condition affects the *nervous system* but little, but when the heart is in such condition as to require digitalis, by improving the circulation in the brain, it is a cerebral stimulant, and the mental condition of the patient is more active, and a drowsy or uncomfortable feeling of fulness in the head disappears. The medulla centers are all stimulated by digitalis.

Too large doses or cumulative doses of digitalis can overstimulate other centers in the medulla besides the cardiac inhibitory and vasoconstrictor, and may cause nausea and vomiting. Overaction of digitalis can also cause dilated pupils, blurred vision, irregular respiration, and finally convulsions.

In conditions of fever, digitalis does not seem readily to slow the heart though the temperature may at times be a little lowered. For some reason, the action of digitalis on the vagus or the inhibitory center does not work, hence if digitalis is given in feverish conditions, it should not be pushed, as any improvement of the vascular tone, or of the dyspnea, and an increase of the amount of urine and a diminution of the edema are signs of sufficient action, and it should not be attempted to push it to slowing of the heart. In fact, in conditions of prolonged fever, when the heart muscle has been weakened, digitalis should be given only in small doses. In mammals, digitalis probably never has any effect on the nerves or sensory organs except, as above stated, on the eyes.

The only effect of this drug on the muscular system is that of an increased and better blood-flow to the muscles. It has not been proved that smooth muscle-tissue other than those of the blood-vessel walls are much stimulated by digitalis, only such improvements as would occur from a bettered circulation.

The *glands* of the body are not affected except as improved circulation and nutrition increase their functional activity.

The *kidney* secretion or excretion is the only one affected, and here there is an increased flow of urine almost entirely due to an increase of the watery part.

Increase in the amount of urea in the urine under the action of digitalis varies with the condition of the patient. If the metabolism has been sluggish from poor circulation, the output of excretory products would be increased. If the circulation has been pretty normal the character of the urine is probably not much changed.

Whereas there may be slight stimulation of the kidney cells, the increased flow of urine seems to be almost entirely due to the increased blood-pressure and improved circulation. The increased circulation causes more lymph to be poured into the blood-vessels, this diluting the blood is one more reason for the increased action of the kidney.

Valuable as digitalis is in increasing the output of urine, in cardiac weakness, edema, effusions, etc., it is not good treatment to push digitalis to any extent, if used at all, when the kidneys are diseased.

This drug is largely but slowly *excreted* by the urine, one dose lasting for from twelve to twenty-four hours, or even longer, and we are probably almost never justified in giving a dose of digitalis oftener than twice in twenty-four hours. The heart and pulse may show the effect of the drug several days after it has been given continuously for a time. The active principles are mostly oxidized or broken up, and therefore cannot be found in any considerable amount in the urine.

Action of a Therapeutic Dose or the Primary Physiologic Action.—The action desired of digitalis used therapeutically is: to slow the heart; to increase arterial tension; to increase the output of urine; to improve all the results of circulatory weakness such as dyspnea, edema, and trophic disturbances due to poor circulation.

The heart should rarely be slowed by digitalis below sixty, or at most fifty beats a minute. If it is slowed beyond this point, or if there is a feeling of constriction in the head, or there are cold and numb sensations in one or more extremities, or there is a distinct reduction in the amount of urine passed in twenty-four hours, or the pulse becomes irregular, or there is nausea

or vomiting, *too much digitalis* is being given and it should be stopped. Any or all of these symptoms can develop during the administration of therapeutic doses, due to the so-called *cumulative action* of digitalis. This may be caused by some chemical condition in the gastro-intestinal canal causing more rapid absorption than usual of several doses, or the rate of excretion can be diminished by the kidneys not acting well, and the above symptoms of overaction can develop. Delirium and hallucinations occur as a symptom of cumulative or over-action of digitalis.

When giving digitalis in large doses it should be remembered that the full effects of a single dose may not appear for from twenty-four to even sixty hours. Consequently, when a result desired is not immediately obtained, large doses should not be repeated, and smaller doses should not be given too frequently.

Idiosyncrasy against this drug probably does not occur, but tolerance probably depends on the condition of the kidneys; the more perfect the kidney, the greater the tolerance. The parts of the drug longest tolerated without cumulative effects are probably digitoxin and digitalinum, while the whole drug, representing all the various active glucosids, in large doses too frequently repeated, owing to slow excretion, can readily cause the above undesired symptoms of cumulative action. When an unusual tolerance to the drug is shown, it is probable that the preparation is inactive, and the various records presented of the harmlessness of repeated large doses of digitalis are explainable by the inactivity of the drug or preparation used. When large doses are being administered to a patient, or he is thoroughly under the influence of digitalis, he should be frequently seen by the physician. Any sudden exertion by a patient when under the full influence of digitalis must be positively prohibited.

The *toxic symptoms* of digitalis are a rapid, irregular heart, the auricles not beating synchronously with the ventricles, cold hands and feet, nausea, vomiting, dizziness, disturbed respiration, lowered temperature, muscular weakness, and final collapse with delirium cordis or cardiac paralysis. The face may be pale, the sclerotics may be bluish, there may be diarrhea, there may be suppression of urine, and there may be delirium and convulsions.

Digitoxin is the most active poison of the digitalis active principles, although it is the most rapidly eliminated.

Treatment of Digitalis Poisoning.—There is no good physiologic antidote and no good chemical antidote, if the poison is in the stomach, except the physical treatment of removing it by emetics or by stomach washing. Tannic acid and tincture of the chlorid of iron are feeble chemical antidotes. The patient should be kept absolutely at rest. The body temperature should be kept up with dry heat applications. Artificial respiration may be advisable and necessary. Moist, hot applications to the lumbar region may be of advantage in aiding a relaxation of the kidney vessels, which will allow the drug which has been absorbed to be excreted gradually. Brandy and whisky and nitroglycerin to dilate the arterial system and cause more blood to reach the surface of the body and relieve the strain on the heart, are along the line of physiologic antidotes. After the stomach has been emptied, magnesium sulphate, or some other quickly acting saline cathartic, should be given in order to prevent absorption of any of the drug that may be in the intestines.

(To be continued)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, FEBRUARY 11, 1911

A NEW THEORY OF SHOCK

Notwithstanding the rapid advance made in some of the fundamental problems confronting the surgeon, such as infection and hemorrhage, shock has remained more or less of an enigma. Indeed, most of the large amount of investigative work which has been done in connection with this subject has served only to enrich our knowledge of the phenomena occurring in association with it; so that although we have at present a better understanding of its symptomatology, yet almost nothing has been done which convinces us of its fundamental nature. Thus Crile¹ and Romberg and Pässler² have independently observed that during shock the arterial pressure falls; and from this observation they concluded that this drop of pressure was the "essential phenomenon," and that shock was fundamentally due to a vasomotor failure.

Hardly had this conclusion been reached, however, when Seelig and Lyon and others disproved it by demonstrating conclusively that instead of a failure of the vasomotor system there is actually a great activity, at least up to the last stages of shock. So no sooner has one theory been advanced to explain it than further work has served to disprove or at least to minimize the importance of that theory.

During the past two years, however, a series of articles has appeared by Yandell Henderson, of New Haven,³ dealing with an elaborate experimental investigation of shock from an entirely new basis. Briefly, Henderson believes that the condition primarily is due to a diminished amount of carbon dioxide in the blood and tissues of the body. This lack of the normal amount of carbon dioxide is termed acapnia. His experimental results are most interesting; and they are full of much practical suggestion to the surgeon because they seem to show that some of the technic, commonly practiced, is based on erroneous ideas. In a short summary of this kind necessarily only a few of the most interesting features of the work can be cited.

Henderson reviews the literature of carbon dioxide as a hormone, or chemical regulator, of respiration to

show that the failure of circulation and of the nervous system in shock and the cessation of respiration in true apnea must logically be referred to the same cause—acapnia.

Experiments on dogs, which were devised to bring about a sudden great diminution in the carbon dioxide content of arterial blood, resulted in an increase of the heart-rate up to the point of cardiac tetanus and death. Voluntarily forced breathing in man induces symptoms resembling shock, probably because the increased pulmonary ventilation results in an abnormally great exhalation of carbon dioxide. Pain, ether, excitement, sorrow, fear and other conditions inducing shock involve excessive respiration. Because a marked diminution in the amount of carbon dioxide in the arterial blood creates a lack of the normal stimulation of respiration, excessive artificial respiration in dogs for twenty-five to thirty minutes, by causing greatly increased pulmonary ventilation, is followed by a cessation of breathing so prolonged that the heart fails for lack of oxygen. During this anoxemia an acidosis occurs owing to an accumulation in the blood of products of incomplete tissue combustion. The administration of carbon dioxide gas during the period of cessation of respiration induces an immediate return of natural breathing; and the administration of oxygen affords ideal conditions for the prevention of the asphyxial acidosis. Anesthetics tend to prevent shock because they diminish the excessive respiration caused by pain. The respiratory excitement during the initial stages of anesthesia diminishes the carbon dioxide content of the blood, and thus tends to induce a subsequent failure of respiration. Similarly, ether, unless neutralized by morphin, often causes (in dogs) hyperpnea, acapnia and a consequent fatal apnea. Of particular interest in this connection are observations by W. D. Gateh⁴ in several hundred anesthetics during which patients were allowed to rebreathe some of their own carbon dioxide. In no instance was there any evidence of shock. These observations seem to confirm Henderson's theory to a greater or less degree; and they lend evidence to his statement that "skillful anesthesia consists in maintaining the threshold of the respiratory center for carbon dioxide at a nearly normal level, and in avoiding the development of either acapnia or hypercapnia."

The section of the work dealing more particularly with the relation of shock to abdominal operations is of special importance because of its bearing on many cases of hitherto inexplicable postoperative ileus. It is shown that the loss of tonus of the abdominal viscera during and after laparotomy is almost certainly due to the direct exhalation of carbon dioxide from the organs during the time of exposure. Indeed, Henderson states that the common practice among surgeons of wrapping viscera in moist hot compresses repeatedly changed is an effective means of producing shock instead of pre-

1. Surgical Shock, 1899.

2. Deutsch. Arch. f. klin. Med., 1899, lxxiv, 652.

3. Am. Jour. Phys.

4. THE JOURNAL, March 5, 1910, p. 775.

venting it, because by this means the exhalation of carbon dioxid from the viscera so treated is greatly facilitated. He emphasizes his assertion by experimentally producing a high grade of shock by this means. Similarly, subjecting the viscera, even while still in the abdomen, to a mild current of warm moist air, with practically no trauma, rapidly produces congestion and loss of tonus and motility. Here again the results obtained are probably due to an excessive elimination of carbon dioxid from the viscera; for when this gas is restored to the body by injections of saturated solution intravenously into the peritoneal cavity or directly into the lumen of the bowel, or by immersion of the bowel in warm saline solution saturated with carbon dioxid, an effective relief from all except the extreme stages is accomplished.

Finally, by no means the least important feature of the work is a description of a hitherto unknown "venopressor" mechanism. It is failure of this mechanism, rather than of the vasomotor apparatus, which, according to Henderson, is responsible for the phenomena, observed by Crile and others, of lowered arterial pressure and venous dilatation.

NOSTRUM ADVERTISING—LAY AND MEDICAL

Hardly a day passes that we do not receive letters from physicians protesting against the utter lack of honesty shown by some newspapers in carrying fraudulent "patent medicine" and quack advertisements. That every right-thinking man—physician or layman—has good cause for indignation in this matter, no one can deny. Many of the advertisements of nostrums and of quacks are fraudulent to a degree and as vicious as they are fraudulent. But the newspapers are not alone in these defections. Before we physicians criticize the lay press too harshly, let us be sure that we are not giving moral and financial support to medical journals which, in their own special field, are just as recreant to the trust reposed in them as any nostrum-reeking newspaper.

The "patent medicine" advertisements in the newspapers are more likely to arouse our scorn because, as physicians, we know the hollowness of the lies that characterize the claims made for these nostrums. But the difference between the falsehoods of the "patent medicine" faker and the prevarication of many exploiters of "ethical proprietaries"—heaven save the mark!—is one of degree, not of kind. The former utters the "lie direct"; the latter, the "lie with circumstance." The former frames his untruths in bald and crude Anglo-Saxon; the latter serves his fiction in the more polished Norman-French. The former defrauds and injures the public direct; the latter accomplishes the same end by the, unwitting, aid of the physician.

It is inconsistent and absurd for a physician to exhibit a spasm of indignation because some news-

papers carry fraudulent medical advertising, so long as that physician is subscribing for, and supporting, a medical journal whose advertising ethics are just as low as those of the newspapers he condemns. We hold no brief for the lay press and we realize to the fullest the gross deceit, fraud and hypocrisy exhibited by some newspapers in their attitude on the subject of nostrum and quack advertising. It is a fact, nevertheless, that there are many newspapers and still more weekly and monthly magazines, whose advertising standards are infinitely higher than those adopted by a large number of medical journals. Of course it is detrimental to public health for fraudulent "patent medicines" to be advertised in the newspapers and sold to the laity. But, let us remember, it is also detrimental to the public's well-being for secret, and frequently fraudulent, mixtures to be advertised in medical journals and used by physicians on the laity. To deplore the former while we continue to tolerate the latter is neither good sense nor good morals.

THE PRESENT PLAGUE SITUATION

As has been noted in our news columns, alarming newspaper notices have recently appeared regarding the occurrence of plague in Manchuria, and these are substantially corroborated by official reports,¹ which indicate that the disease is especially severe, and that it threatens all north China.

The outbreak began Oct. 25, 1910, and from that date until Dec. 11, 1910, there had been reported 493 cases with 491 deaths, most of them having been discovered at Manchuria Station and other points near Harbin in the concession of the Chinese Eastern Railway. Cases had also occurred, however, in towns outside the railway concession, and it was recognized that the continuance of cases in these latter localities would be a constant menace even though the authorities within the conceded railroad zone were able to prevent the spread of the epidemic from already infected stations. Since the beginning of the outbreak in the vicinity of Harbin, the infection has spread to Fuchiatien, Mukden, Chang Chun, Kirin, Tientsin, Paoting-Fu, Chefoo, and Peking. While Harbin and Mukden are the points most affected and while the mortality is largely among natives, yet in the former place eighteen Russians and one French physician have died. The infection is unusually virulent, and appears to be spreading rapidly, so that all of north China may be regarded as being threatened.

Great importance attaches to the occurrence of plague in this part of China, since it is near the seat of government, and an epidemic here may have an important bearing on international relations with that country. It is understood also that the gravity of the situation is appreciated by our government, which recognizes the great danger to life and the threatened injury to the

1. Public Health Reports, Jan. 27, 1911, p. 97.

commerce of the world. The epidemic of plague in Manchuria, however, must be regarded as an extension of the sixth pandemic of that disease, which had its origin in south China in 1893, and since that time, spread to over fifty countries throughout the world. On account of the limited amount of communication by means of ships and shipping, and the almost entire absence of immigration from north China, the epidemic of plague in Manchuria is not at present a serious menace to the health of the United States or its possessions. It indicates, however, that the infection is slowly spreading, and recalls the occurrence of outbreaks in other parts of the world, which are a distinct menace to America and its commerce. In many parts of south China plague continued to prevail during the year 1910. In Japan, cases of the disease have occurred in four important centers, including Osaka and Yokohama. In India there was an increase in the number of fatal cases as compared with the two previous years. In Argentina, Brazil, Ecuador, Peru and Venezuela, plague has also been reported during the year as being more or less widespread. In Africa, the disease has been reported from widely separated localities, and prevailed in Egypt in epidemic form. In Europe, cases and deaths were reported from St. Petersburg, Moscow and Odessa, Russia; Lisbon, Portugal; and Suffolk County, England. In the United States, two human cases were reported from rural districts of California. Plague may accordingly be regarded as now being present on every continent.

While only two human cases occurred in California, infected ground-squirrels have been reported from ten counties of that state since April, 1909, as a result of systematic examinations of 253,312 rodents. Recognition of the prevalence of the disease among ground-squirrels in rural districts, the absence of the infection from cities, the natural barrier afforded by the barren mountainous section intervening, and the prosecution of vigorous antiplague measures in the infected area, have decreased the potential danger to other sections of the country outside of California. Continuation of the systematic campaign that is now being waged against ground-squirrels should further limit this danger to the population in the infected area, and reduce the liability of the spread of the disease to a minimum.

On account of the limited communication with Oriental, African and South American ports, and because of the precautions taken at our quarantine stations, the presence of plague in these ports is not now a serious menace to the health of the country. Of greater significance is the occurrence of the disease in Europe, especially in England, as in Suffolk County rat plague is reported as being widespread, and there is said to be no precise knowledge as to how long the infection has prevailed.² The enormous traffic with England by means of shipping makes the prevalence of rat plague

in that country a matter of immediate concern. Even though the disease should not spread there and become prevalent among man, its presence among rodents is an element of danger to shipping that must be taken into account.

In reviewing the present status of the sixth pandemic of plague, it is evident that it has begun to recede in only a few isolated localities, and that there yet remains much territory capable of infection. Since the disease seems to be primarily one of rodents, account must be taken of any unusual mortality among them, at least in all ports having relations with infected countries. It would seem, therefore, to be the duty of local health authorities to examine systematically from time to time rodents collected in their jurisdictions, to encourage the rat-proofing of houses, and otherwise to correct insanitary conditions responsible for the continuance of plague in cities.

Current Comment

ENCOURAGING A NATIVE STRAIN

The immigration of peoples from the old countries of Europe and the consequent mingling of races is rapidly reducing and displacing the original stock of the founders of our nation, and, some believe, to the detriment of its sturdier and more desirable qualities. It will be a matter of surprise to many that in the Appalachian region of the United States, having its center, perhaps, in eastern Kentucky, there are said to be nearly three million people, of almost pure Colonial stock, largely isolated by topography and lack of transportation from much of the education and culture of the more accessible regions, but at the same time free from much of the physical and perhaps moral deterioration of the thickly populated centers. In the people of this comparatively unmixed stock many prominent men acquainted with them see a valuable asset to our nation which should be preserved and encouraged. In the center of this region is Berea College, at Berea, Ky., a religious but non-sectarian institution, with over a thousand students drawn from these people, which is endeavoring to bring to them some of the cultural advantages of the larger and better equipped and endowed schools, together with instruction in practical and technical matters such as in agriculture, mechanics, woodwork, household management, etc. The endeavor is to make the school adequate for every need of these people, and to help to build up to the highest point a community of homes and institutions that shall make these mountain regions "a good place to be born in," "a storehouse of national vigor." Toward this end the school has recently established a hospital to care for the students and a department of health to investigate the diseases which characterize the region, and to disseminate, through the student body and through the extension service which the college maintains, proper ideas of diet, cleanliness, care of the sick, the development and care of children and the thousand and one things that

2. Lancet, Nov. 5, 1910, p. 1353.

make for correct hygienic living among the people. The institution, while it has a small endowment, is poor and depends largely on private beneficence. It therefore makes an appeal for support and particularly for assistance in building up its health and research department, to the end that it may, in its special field, attain the best results in fostering and improving the health, culture and practical efficiency of these real American citizens.

CARELESSNESS VS. MISREPRESENTATION

Those who have followed the work of the Council on Pharmacy and Chemistry and of the Association Laboratory in their efforts to safeguard the interests of the medical profession and the public will be interested in the report on bismuth iodo-resorcin sulphonate that appears in this issue. The case there presented is not one in which a manufacturer has deliberately misrepresented his product; rather it is a case of carelessness. In submitting its product to the Council, the firm made statements which it could, and should, have known were not true. The question arises: if a firm is careless enough to make incorrect statements to the Council on Pharmacy and Chemistry which it knows will critically examine the claims, what degree of "carelessness" may be expected when the products are exploited direct to physicians? The answer, which must occur to any thinking person, is such as to make one pause.

EMPLOYMENT FOR CURED TUBERCULOSIS PATIENTS

With the rapid increase in sanatoriums, both public and private, for the treatment of tuberculosis, the employment of the considerable number of persons discharged from them with the disease either arrested or cured has become a problem of importance, and one that is not easy of solution. It is believed by many with experience in this regard, however, that unless the conditions are too bad, or impossible, the ex-patient with his sanatorium education in hygiene and correct living, should return to his former occupation. It frequently has been found that perhaps the fourteen or sixteen hours outside of the shop or office have contributed more to the patient's breakdown than the eight or ten working hours. The readjustment to a new occupation is not always feasible, and may entail financial sacrifices that are impracticable for the patient. In cases in which it is not possible for the patient to return to his former occupation, a partial solution of the problem has been found in the training of the discharged women patients as nurses for the care of tuberculosis patients. This plan was adopted in the Phipps Institute in 1903 and has been extended to the White Haven Sanatorium in Pennsylvania, to the Ohio State Sanatorium and to other institutions where training-schools have been established. Dr. Lawrence F. Flick,¹ in describing the results of this work in Pennsylvania during the past seven years, says that it is the unanimous opinion of those who have watched these graduates in their work

that the occupation of nursing consumptives is one of the best which a cured consumptive woman can take up for the preservation of her own health; and that the cured consumptive who has been trained for tuberculosis work makes by far the best nurse for tuberculosis patients. The confidence which such cured patients get from their experience, and the living evidence of the curability of tuberculosis which they themselves furnish, help them to win the confidence of their patients and to secure their cooperation. There are more demands from sanatoriums and dispensaries for these graduate nurses than can be supplied. The entrance of such trained women into this field brings a missionary spirit which means much in the crusade against tuberculosis.

THE DANGER FROM TRANSMISSION OF INFECTIOUS MATERIALS BY MAIL

Occasionally complaints are made to the effect that the sending of pathologic and bacteriologic materials through the mails by physicians and others constitutes a dangerous menace to public health. There is no good reason for fear of this kind at the present time. The postal regulations prescribe with great exactness just what materials of the kind now in mind may be sent and how they must be packed in order to be accepted for transmission. Failure to follow instructions is subject to heavy penalties. The packages required certainly appear proof against accidental spilling. The only possible danger will arise from improperly and carelessly packed materials. So far as it is now known, there are no records of definitely established instances of spread of infection through carelessness of this nature. But it should be borne in mind that it is not only a great convenience but in most cases an actual necessity to send material away for examination; in probably the majority of the cases this is done in order that public health may be protected by the application of the results of the examination. It is needless to say that whatever the mode of transmission, all infectious materials must be so packed as to avoid all danger, and that this simple duty is everywhere fully recognized by the conscientious physician.

OPIUM PRODUCTION IN THIS COUNTRY

It is said that an application has been made to the collector of internal revenue at Chicago for a license to manufacture opium for smoking purposes. As the revenue law forbids the importation of opium, except for medicinal purposes, the applicant was naturally asked where he expected to get his supply. He replied that he expected to produce it himself from a plantation already in existence in this country. If this is true, it affords some room for reflection. Laws against the importation of opium will be of little effect if its production is successfully undertaken in our own country; and how far this may be done is worth investigating. In view of our wide range of climate and soil there is little doubt that the opium poppy can be successfully cultivated here. In fact, opium of good quality has been produced in the

¹ Jour. Outdoor Life, January, 1911.

United States, but hitherto the expense has been prohibitory from a commercial point of view. If opium can be cultivated here in commercial quantities, some legislation is needed. When China is prohibiting an abuse which is disastrous to the physical and moral welfare of the people, it is no time for the United States to encourage it. Opium should be produced only under the strictest regulations.

NEED OF CAUTION IN THE USE OF SALVARSAN

The introduction of a new drug or the announcement of a new method of treatment is always attended by two possible evils. One is the unwarranted optimism aroused by the claims made by over-enthusiastic advocates. This evil is corrected by time, added experience and critical investigation, and while it often leads to disappointment, it is apparently unavoidable. The second and far more dangerous evil is the exploitation of the new discovery by the faker and the quack who are quick to seize the golden opportunity offered and to use the public interest for their own selfish advantage. Such has been the history of every great discovery in medicine. It therefore behooves both the medical profession and the public to exercise a healthy skepticism regarding first claims made for any newly discovered method of treatment. In view of the enthusiasm which greeted the discovery of salvarsan ("606"), it is not surprising to know that it is not fulfilling the first claims made for it and that the public interest aroused by it is being used by fakers and charlatans to deceive and defraud the public. In another department of *THE JOURNAL*¹ appears a discussion of our present knowledge of salvarsan, its limitations and dangers and the use which is being made of it by quacks. It is the duty of every physician to inform himself on this subject so as to be able to enlighten his patients and the public. In the general enthusiasm over the discovery of a drug which gives promise of being a valuable addition to our armamentarium, it must not be forgotten that salvarsan is an arsenic compound and, as such, is a dangerous poison unless used intelligently; that it can be administered only hypodermically or intravenously, and consequently cannot be self-administered by the patient; that its use may be followed by serious and even disastrous results, and that it should, in no case, be taken except under the personal direction of a competent physician. The extent of the ravages of specific diseases is shown by the almost universal interest aroused by the announcement of this discovery. Physicians and medical societies should see to it that this interest is not taken advantage of by quacks to exploit, to their own gain, the diseased and the unfortunate.

Repair of Fractures.—From a practical viewpoint, the processes entering into the repair of fractures are manifestly those of effusion and infiltration and their proper management; resorption of the effused fluids and particles of destroyed tissue material; the utilization of the callus to the best advantage by ideal fixation; retention following the fixation; and to these principles may be added the prevention of callus redundancy, which is usually the result, it may be added, of undue mechanical irritation or imperfect approximation.—G. F. Roehrig, in *Denver Medical Times and Utah Medical Journal*.

1. See page 436.

Medical News

CALIFORNIA

New County Society.—The Tulare County Medical Society has been organized at Visalia with the following officers: president, Dr. Thomas DeH. Blodgett, Tulare; vice-president, Dr. Mark L. Pettit, Visalia, and secretary-treasurer, Dr. F. Leslie Stallings, Lindsay.

Physicians On Trial.—Dr. Willard P. Burke, Santa Rosa, charged with having dynamited a tent-house where a former employee and her child were sleeping, is said to have been found guilty, January 27.—The coroner's jury in the case of Millie Coney who died at the Mount Zion Hospital, San Francisco, recently, rendered a verdict that the girl had died from the effects of an abortion, which was inflicted by herself. The verdict completely exonerated Dr. Marion Thrasher.

Personal.—Dr. C. W. Harvey, Anaheim, has succeeded Dr. Clayton L. Rich, Fullerton, as district and local surgeon for the Santa Fe Railroad.—Dr. and Mrs. William H. Mays, Newman, sailed for the Mediterranean, February 4.—Dr. Charles L. King, Pasadena, fractured his left leg and sustained many bruises and cuts, in a collision between his automobile and a street car, January 21.—Dr. William F. McNutt, San Francisco, was painfully injured by falling on a slippery pavement.—Dr. George L. Eaton, San Francisco, has been unanimously elected president of the local board of health.

CONNECTICUT

New Superintendent.—Dr. Donald L. Ross, assistant physician in charge of the reception of patients at the King's Park Hospital for the Insane, New York, has been appointed superintendent of the Connecticut Colony for Epileptics, Mansfield.

Donates Tuberculosis Pavilion.—A gift of \$25,000 has been made to the town of Greenwich by Mrs. Nathaniel Witherell for the erection of a tuberculosis pavilion on the grounds of the Greenwich General Hospital, to be known as "The Nathaniel Witherell Memorial."

Society Meetings.—The surgical section of the Hartford Medical Society at its annual meeting, held January 3, reelected Dr. Arthur J. Wolff, chairman; Dr. Ernest A. Wells, secretary; Dr. Thomas N. Hepburn, treasurer, and Dr. Charles E. Taft, member of the executive committee.—The Bristol Medical Society at its annual meeting elected Dr. Charles R. Upton, president; Dr. E. Parker Sanborn, vice-president, and Dr. Benedict N. Whipple, secretary and treasurer.—The annual meeting of the Hartford Medical Society was held in Hunt Memorial Building, January 2, and the following officers were elected: president, Dr. Marcus M. Johnson; vice-president, Dr. Oliver C. Smith; secretary, Dr. Albert R. Keith; assistant secretary, Dr. Edward A. Hotchkiss; treasurer, Dr. George K. Weleh; librarian, Dr. Walter R. Steiner, and censors, Drs. Charles S. Stern, John B. Waters and Edward O. Elmer.—The Society of Regular Physicians held its annual meeting in New Britain, January 3, and elected the following officers: Dr. Catherine H. Travis, president; Dr. James H. Potts, vice-president; Dr. George H. Bodley, secretary and treasurer, and Drs. Maurice W. Maloney, William W. Brackett and Samuel W. Irving, censors.

DISTRICT OF COLUMBIA

Personal.—Dr. Percy G. Smith, superintendent of the District Tuberculosis Hospital has resigned and has been succeeded by Dr. William D. Tewksbury.—Dr. Harvey W. Wiley has been elected president of the Cosmos Club.—Dr. Ernest P. Magruder has returned from abroad.—Dr. Benjamin R. Logie has succeeded Dr. Presley B. Hunt, deceased, as alienist for the district.

District Society Election.—The Medical Society of the District of Columbia, at its annual meeting, elected the following officers: president, Dr. Wilfred M. Barton; vice-presidents, Drs. Walter A. Wells and Hanson T. A. Lemon; corresponding secretary, Dr. Thomas C. Smith; recording secretary, Dr. Henry C. Macatee; treasurer, Dr. Charles W. Franzoni (thirty-ninth term); librarian, Dr. Edwin L. Morgan, and censors, Drs. D. Olin Leach, Henry B. Deale, Francis R. Hagner, Joseph S. Wall and John F. Moran.

FLORIDA

State Laboratory.—A state laboratory is to be erected in Jacksonville for the state board of health.

Health Ordinance Violators Fined.—Two negroes of Jacksonville were each fined \$2.00 by the justice of the municipal court for violating the health ordinance by not keeping their property clean.

Hospital Corps Organized.—A meeting of the medical officers of the National Guard of Florida was held in Jacksonville, January 25, to organize a field hospital for the state. Dr. Gny P. Holden, Jacksonville, First Lieutenant, M.C., N.G.F.A., is in command of the corps.

Society Meeting.—Orlando County Medical Society, at its annual meeting held in Orlando, elected Dr. William C. Persons, Orlando, president; Dr. Thomas A. Neal, Sanford, vice-president; Dr. Garton H. Edwards, Orlando, secretary, and Dr. Sylvan McElroy, Orlando, treasurer.

GEORGIA

Personal.—Dr. Faris C. Richards, Jasper, was thrown from his buggy, fracturing his right femur and dislocating his left shoulder.—The Medical College of Georgia, Augusta, has added to its faculty the following demonstrators; obstetrics, Drs. Andrew J. Kilpatrick and John M. Caldwell, and otology, Dr. James R. Littleton.—Dr. John T. Monerief, chairman of the police commission of Columbus, has resigned.—Dr. Robert C. Swint, assistant on the medical staff of the State Sanitarium, Milledgeville, has resigned.

Election of Officers.—Clark County Medical Society, at its meeting held in Athens, elected the following officers: president, Dr. Dan H. Dupree; vice-president, Dr. Singleton S. Smith; secretary-treasurer, Dr. John Gerdine; censors, Drs. William A. Carlton, Millard F. Matthews and Allen C. Holliday; delegate to the state association, Dr. Henry M. Fullilove, and alternate, Dr. John C. McKinney, all of Athens.—At the annual meeting of the Fulton County Medical Association, held in Atlanta, the following officers were elected: president, Dr. Edgar G. Ballenger; vice-president, Dr. L. Benjamin Clarke; secretary, Dr. Richard R. Daly; treasurer, Dr. Arnold H. Lindorme and censor, Dr. Frederiek G. Hodgson, all of Atlanta.—At the annual meeting of the Richmond County Medical Association held in Augusta, January 25, the following officers were elected: Dr. Charles W. Crane, president; Dr. G. A. Traylor, vice-president; Dr. James B. Wright, secretary-treasurer; Drs. Noel M. Moore and Thomas D. Coleman, censors; Dr. James R. Littleton, delegate to the state association and Dr. William R. Houston, alternate, all of Augusta.

ILLINOIS

Personal.—Dr. Charles C. Kost, Dixon, has been appointed district surgeon of the Illinois Central Railroad, vice Dr. Abraham L. Miller, resigned.—Dr. Christian H. Zoller, Granite City, has been appointed superintendent of the Granite City Lutheran Hospital.

The Last of the Physiomedical Colleges Changes Faith.—Last month at a meeting of the stockholders and trustees of the College of Medicine and Surgery, Chicago, the last of the physiomedical colleges, the corporate name was changed to the Chicago Eclectic Medical College. It is stated that the school will hereafter be conducted as an eclectic college.

Law-Breakers Caught.—Dr. J. A. Roy, Lewistown, against whom a judgment is said to have been secured some time ago for practicing medicine without a license, and against whom a fine of \$100 was assessed, gave himself up to the sheriff, January 20, and will serve a sentence of twenty days in jail.—George Griffith, Strasburg, an itinerant medicine vender, who was sued by the state's attorney for peddling medicine without a license is said to have consented to settle the case without a trial on the imposition of a fine of \$100 and costs and has promised to go out of business.

Hospital at Clinton.—The Dr. John Warner Hospital, Clinton, is almost ready for opening; the delay is due only to the failure of some of the equipment and furniture to arrive. On the first floor of the institution are the superintendent's room, nurses' rooms, kitchen, dining room, reception room and men's ward, which latter is to be furnished by the Illinois Central Railroad. On the second floor of the institution are most of the private rooms, the women's ward and children's ward. On the third floor the operating rooms, dressing rooms and sterilizing rooms will be located. The physicians of DeWitt County have decided to furnish the operating room of the hospital.

Chicago

Schools Named for Physicians.—Dr. Frank J. Jirka states that THE JOURNAL omitted from the list of physicians after whom Chicago public schools have been named, that of his father, the late Dr. Frank J. Jirka, who was for many years a member of the public school board of Chicago.

Personal.—Dr. David J. Davis, of the Memorial Institute for Infectious Diseases, has been appointed pathologist to St. Luke's Hospital.—Dr. Christian J. Hartung was struck by a street car, February 2, and seriously injured.—Dr. Strother J. Beeson has left for a trip to the West Indies and South America.

INDIANA

Illegal Practitioner Fined.—Dr. A. E. Uetz, Ellwood, charged with practicing medicine without a license, is said to have pleaded guilty, January 25, and to have been fined \$25 and costs.

License Renewed.—The State Board of Examination and Registration, on petition of physicians of Allen County and a number of citizens, has renewed the license of Dr. McKendree Green, Pleasant Lake, which was revoked nearly three years ago.

Antituberculosis Hospital Open.—The first patients were received in Boehme Camp, near Evansville, January 11. The hospital, an open-air farm, completed through the energetic work of the antituberculosis society aided by the donation of Congressman Boehne, can now accommodate fourteen patients.

Metaphysical Healer Fined.—The Supreme Court, on January 25, confirmed the decision of the May circuit court, which assessed a fine against Mrs. Lyda Hazlett, Richmond, for prescribing medicine without a license. The suit was brought following the death of a 14-year-old girl in an institute, conducted by the defendant, known as the "Metaphysical Healing Home."

Verdict Against Practitioner.—By agreement of the contending parties a judgment of \$1,500 damages in favor of Arman Rankin, a minor, is said to have been entered in the circuit court of Indianapolis, Dec. 30, 1910, against Dr. Robert O. McAlexander, in a suit brought on behalf of the plaintiff to recover damages for alleged unskillful setting of the bones in a fracture of the leg.

Personal.—Dr. J. Herbert Brewster, for three years head of the water laboratory of the State Board of Health, has resigned.—Dr. A. C. Lucas, Indianapolis, was struck by a street car January 25, but was not seriously injured.—Dr. C. D. Pettigrew, Logansport, whose license to practice was revoked recently by the State Board, was tried, January 30, on the charge of practicing without a license, instituted by the Cass County Medical Society, and, on the first ballot, was acquitted.

Gift to University.—Dr. Robert W. Long and wife, Indianapolis, have made a donation of \$200,000 in real estate to the Medical Department of the State University. Dr. Long desires that the legislature provide sufficient funds for the maintenance of a hospital free to all citizens of the state, and connected with the medical department of the state university. His plans also include the selling of the present building of the medical college in Indianapolis and the erection of new and more commodious buildings on the land owned by the state. His idea, eventually, is to increase his donation to \$500,000.

Elections.—At the annual meeting of the Indianapolis Medical Society, the following officers were elected: Dr. Albert C. Kimberlin, president; Dr. Norman E. Jobes, vice-president; Dr. Roscoe H. Ritter, secretary-treasurer; Drs. William F. Clevenger and Walter D. Hoskins, members of the judicial council; Drs. Harry E. Gabe, Thomas B. Eastman and Francis B. Wynn, delegates to the state medical association, and Drs. Charles A. Pfafflin, Thomas C. Kennedy and Mitchell O. Devaney, alternates.—At the annual meeting of Vanderburg County Medical Society, held in Evansville, Dr. Charles Knapp was elected president; Dr. Porter H. Linthicam, vice-president; Dr. William R. Davidson, secretary (reelected), and Dr. Benjamin L. W. Floyd, censor, all of Evansville.—Tippecanoe County Medical Society, at its meeting in Lafayette, elected the following officers: Dr. Milton C. Wilson, president; Dr. George F. Keiper, vice-president; Dr. William M. Reser, secretary (reelected); Dr. Charles Hupe, treasurer and Dr. George F. Beasley, censor, all of Lafayette.—At the annual meeting of Madison County Medical Society, Dr. Joseph E. Hall of Alexandria, was elected president, and Dr. Etta Charles, Summitville, secretary-treasurer.

IOWA

New Hospitals.—The City Park Hospital Company of Mason City has reorganized and a lot has been purchased on which a building to cost \$75,000 will be erected.—Dr. Clyde A. Noland, Ogden, has opened a hospital in that town with accommodation for five patients.

Society Meetings.—Blackhawk County Medical Society, at its annual meeting January 10, elected Dr. William G. Mullarky, Cedar Falls, president; Dr. John E. O'Keefe, Waterloo, vice-president; Dr. Carl C. Bickley, Waterloo, secretary (re-elected); Dr. Will L. Hearst, Cedar Falls, treasurer, and Dr. Frank N. Mead, Cedar Falls, censor.—At the annual meeting of Scott County Medical Society held at Davenport, January 2, Dr. Albert W. Elmer was elected president; Dr. John C. Murphy, vice-president; Dr. John V. Littig, secretary-treasurer; Dr. Frederick Lambach, delegate to the state society, and Dr. George E. Decker, alternate, all of Davenport.—Page County physicians met in Coin, December 28, to reorganize the county medical association, and after some preliminary work adjourned to meet the following week at Blanchard.—The annual election of Lee County Medical Association resulted in the choice of Dr. Coral R. Armentrout, Keokuk, president; Dr. William C. Kasten, Fort Madison, vice-president, and Dr. Ernest G. Wollenweber, Keokuk, secretary-treasurer.—Fort Madison Medical Society, at its annual meeting elected Dr. John W. Philpott, president; Dr. Charles O. Wilkin, vice-president, and Dr. J. G. Rea, secretary-treasurer.—At the thirty-eighth annual meeting of the Marion County Medical Society, held in Knoxville, Dr. Clarence E. James, Durham, was elected president; Dr. Arthur M. Merritt, Pleasantville, vice-president; Dr. Corwin W. Cornell, Knoxville, secretary-treasurer, and Dr. J. M. Weiss, Knoxville, censor.

KENTUCKY

Health of Jefferson County.—The annual report of the Jefferson County Board of Health has just been published. It shows that though the population of the county has increased 25 per cent., the best available statistics show a decrease in the death-rate of 1 per cent. Among the causes assigned to the lessening of illness the board mentions the drainage of swamp lands; the improvement in water supply; the keeping of stagnant water from the side of the highways and the spreading of crude oil on the county roads. The number of cases of tuberculosis is greater than ever before. There is a noted decrease in typhoid fever since the filtration plant has been in operation, but many cases are still reported along the line of small streams which feed the wells and springs. There were only sixteen cases of diphtheria reported, with no fatality. There were fifty-one cases of scarlet fever with three deaths, and five cases of small-pox. The secretary urges the establishment of an abattoir as the public has practically no protection against diseased and carelessly handled meats. Much space is given in the report to the condition of the milk supply of Louisville.

LOUISIANA

Small-Pox on Steamer.—Small-pox has developed on board the United States Engineers' steamer, *Delatour*, in Bayou Teche. The patients have been placed on a house-boat and thorough preventive measures have been undertaken.

The Health Train.—Up to the first of the year, the health exhibit train sent out by the State Board of Health has visited twenty parishes and fifty-two towns and it is estimated that 5,600 people have visited the car and that 1,500 have attended the meetings and lectures on hygiene and sanitation. The train is expected to tour Mississippi after the work in Louisiana is finished.

Hospital News.—The ordinance recently passed which makes the new building for the insane at the New Orleans House of Detention a city hospital for mental diseases, provides that it shall be the privilege of any indigent person residing in Orleans parish to make formal application for admission to the hospital, and, if found mentally unsound, to receive the benefit of medical care and treatment in the institution. The new building will be ready this month.—The free clinic of the new Presbyterian Hospital, New Orleans, located at 730 Baronne Street, opened January 16.

Parish Society Elections.—At the annual meeting of the Avoyelles Parish Medical Society held in Mansura, January 6, the following officers were elected: president, Dr. Remy G. Ducote, Bordelonville; vice-president, Dr. William A. Quirk, Evergreen; secretary-treasurer, Dr. Merrick E. Saucier, Marks-ville, and delegate to the state medical society, Dr. Thomas

A. Roy, Mansura.—Rapides Parish Medical Society at its annual meeting, January 2, held in Alexandria, elected the following officers: president, Dr. Richard F. Harrell, Alexandria; vice-presidents, Drs. Edward F. Luckett, Loyd, and John L. Wilson, Alexandria; and secretary-treasurer, Dr. James A. White, Alexandria.

Personal.—Dr. Hamilton P. Jones, Pure Food Commissioner of Louisiana for the last four years, has resigned.—The board of managers of Touro Infirmary, New Orleans, have made the following appointments: surgical department, Dr. Russell E. Stone; pediatric department, Dr. Ruffin T. Perkins; gynecologic department, Dr. Paul T. Talbot; eye, ear, nose and throat department, Dr. Emile S. Keitz.—The Lafayette Sanitarium Association has reelected the following directors: Drs. John E. Mouton, Frederick R. Tolson, Lambert O. Clark and Nathaniel P. Moss.—Drs. Alonzo Givens and Ruffin B. Paine have been elected members of the Mandeville Board of Health, and, at the first meeting of the board, January 17, Dr. Paine was elected president.—Dr. John Callan, New Orleans, has been elected a member of the board of managers of the Tulane Fund vice Rev. Beverly Warner, deceased.—Dr. W. E. Dillon, Many, has been elected president of the Sabine Parish Board of Health, vice Dr. Willie E. Tatum, Converse, resigned.—Dr. Joel A. Selby, Shreveport, was thrown from his buggy in a runaway accident recently, fracturing a leg.

NEBRASKA

Demonstrators' Association Elects.—Dr. Wightman, Omaha, has been appointed president of the Nebraska Demonstrators' Association, vice Dr. E. Arthur Carr, Lincoln; Dr. Charles W. McC. Poynter, Lincoln, secretary, and Dr. O. Olson, Lincoln, vice-president and treasurer.

Personal.—Dr. Malcolm Stewart, Tecumseh, has been appointed a member of the newly organized Johnson County Board of Health.—Dr. Mark W. Baxter has resigned the superintendency of the Nebraska State Hospital, Ingleside, and will locate in Hastings.—Dr. Charles S. Currie, Beatrice, has been appointed physician of Gage County.

Society Meetings.—At the annual meeting of the Johnson County Medical Society held in Tecumseh, January 19, Dr. Charles H. Davies, Tecumseh, was elected president; Dr. Nils P. Hanson, Elk Creek, vice-president; Dr. Albert P. Fitzsimmons, Tecumseh, secretary-treasurer, and Dr. George J. Rubelman, Tecumseh, censor.—The Republican Valley Medical Association, at its annual meeting held in Hastings, January 26, elected Dr. Llewellyn L. Jones, Hastings, president, and Dr. Robert S. Mitchell, Red Cloud, vice-president, and reelected Dr. James N. Campbell, Stamford, secretary, and Dr. William B. Shields, Holdrege, treasurer.—The Dawes County Medical Association at its meeting in Chadron, elected Dr. Benjamin F. Richards, Crawford, president; Dr. E. L. Vernon, Chadron, vice-president; Dr. George W. Deemer, Chadron, secretary, and Dr. James E. Hartwell, Crawford, delegate to the state association.—The Howard County Medical Association, at its annual meeting held in St. Paul, elected Dr. Peter M. Pedersen, Dannebrog, president and delegate to the state association; Dr. John F. Hart, Elba, vice-president, and Dr. Charles C. Paxton, St. Paul, secretary-treasurer.

NEW HAMPSHIRE

Registration of Tuberculosis.—The house of representatives has passed a bill providing for the registration of all cases of tuberculosis.

Bequest to Hospital.—By the will of the late Dr. George F. Wilber, Nashua, about \$60,000 is bequeathed to the Nashua Emergency Hospital.

Public Drinking Cup Must Go.—The lower branch of the legislature concurring with the senate, January 25, passed a bill giving the State Board of Health authority to "restrict the use of drinking cups in public places."

Personal.—Dr. George W. McGregor, Littleton, is spending the winter in Aiken, S. C.—Dr. John M. Gile, Hanover, has been elected a member of the governor's counsel.—Dr. George A. Weaver, Warren, has been appointed a member of the local board of pension examiners of Plymouth.

Society Meetings.—At the seventh annual meeting of the Grafton County Medical Society held in Woodsville, Dr. William E. Lawrence, North Haverhill, was elected president; Dr. John Wheeler, Plymouth, vice-president; Dr. George A. Weaver, Warren, secretary-treasurer; Dr. Charles R. Gibson, Woodsville, delegate to the state medical society and Dr. Elmer H. Carleton, Hanover, censor.—The New Hampshire

medical club at its fifteenth annual meeting in Hanover elected the following officers: president, Dr. John W. Staples, Franklin; vice-president, Dr. Clifton S. Abbott, Laconia, and secretary-treasurer, Dr. Frank E. Kittredge, Nashua.

NEW JERSEY

New Infirmary.—Princeton University is soon to have a larger and more complete infirmary. The endowment fund for the building amounting to about \$100,000, has been raised by the Women's Auxiliary Society of Princeton.

Medical League Meeting.—The Newark Medical League held its annual banquet, January 26, at which 116 were present. Dr. William J. Robinson, New York City, read a paper on "The Improvement of the Human Race." Dr. David A. Kraker acted as toastmaster and the following officers were elected: president, Dr. Louis Weiss; vice-president, Dr. Edwin Steiner; secretary, Dr. Abraham Finkelstein, and Treasurer, Dr. Louis L. Davidson.

Election.—Orange County Medical Society held its annual meeting January 20, in the William Pierson Medical Laboratory, Orange. Dr. Richard D. Freeman, South Orange, was elected president; Dr. Levi W. Halsey, Montclair, vice-president; Dr. Henry A. Pulsford, South Orange, secretary; Dr. J. Minor Maghee, West Orange, treasurer; Dr. Charles W. Banks, East Orange, reporter, and Drs. Richard P. Francis and Richard C. Newton, Montclair, and Dr. William H. Lawrence, Summit, censors.

NEW YORK

Crippled Children.—The tenth annual report of the board of managers of the New York State Hospital for the Care of Crippled and Deformed Children, West Haverstraw, states that out of eighty patients treated, thirty-three were discharged. There was a far larger number of applicants than could be accommodated, and plans for a new and more extensive hospital have been prepared and it is stated that work on the structure will be begun immediately.

Wins Test Case.—In the case of the Hempstead town board of health against Dr. A. Ferree Witmer, Freeport, charged with failure to record a certificate of birth within thirty-six hours, as provided by ordinance, the judge rendered a decision for the defendant on the grounds that the ordinance naming the fine was not specific. Dr. Witmer made this a test case on the grounds that the ordinance was too broad and also that the penalty provided was not less than \$10 and not more than \$25.

Proposed Legislative Measures.—A resolution asking for the appointment of a commission to investigate tuberculosis conditions in the state and to devise remedial legislation has been prepared for presentation to the legislature. Another resolution proposes the erection of a state hospital for the treatment of tuberculosis in the Adirondacks, through an amendment to the constitution authorizing the legislature to set apart an area of a thousand acres or less in the Adirondack State Park for hospital purposes.

To Check Insanity.—The annual report of the State Commission in Lunacy, recently transmitted to the legislature, states that the number of insane in the state on Sept. 30, 1910, was 32,658. The number in state hospitals was 31,606; in licensed private institutions, 1,052, and in Matteawan and Dannemora, institutions for the insane criminal, 1,161. The total number of patients received during the year was 7,063, a net increase of 1,119. The report states that addresses on the prevention of insanity will be made in the Academy of Medicine, New York City, and later in many parts of the state, to be followed by a series of public lectures illustrated by moving pictures depicting life of the insane in the modern hospital and the remedial measures employed. Pamphlets informing the public of the avoidable causes of insanity will be issued for distribution to high school and college students, church organizations and philanthropic associations throughout the state.

New York City

Personal.—Dr. Charles H. May has been appointed consulting ophthalmologist for the fourth division of Bellevue Hospital.—Dr. Charles L. Vaux, Central Islip, has been appointed second assistant physician at the State Hospital, in that place.

Bequests.—Among the many bequests mentioned in the will of the late Mrs. Emily H. Moir, are the following to hospitals: New York Eye and Ear Infirmary, \$20,000; Lying-In Hospital, \$10,000; Hospital for Scarlet Fever and Diphtheria, \$10,000; Baby's Hospital of the City of New York, \$10,000; Presbyterian Hospital, \$20,000; Northern Dispensary, \$5,000, and Nursery and Child's Hospital, \$5,000.

Report of Beth Israel Hospital.—At the annual meeting of the Beth Israel Hospital Association the report showed that 4,754 persons had applied for treatment during the year of whom 1,317 were rejected for lack of room. Of the patients treated more than 94 per cent. were treated as charity cases. The report emphasizes the need of a larger building and efforts will be made to find a site for a new building. The total subscriptions to the building fund now amount to \$188,609.

The Deaths of 1910.—During the year 76,742 deaths were recorded, equivalent to a death-rate of 15.98 per 1,000, a little lower than that of 1909, and the lowest rate ever on record in the city. If the average death-rate which had prevailed during the previous decade had continued during 1910, there would have been 13,076 more deaths in the latter year than were recorded. All the causes of death amenable to sanitary control show decreases. Most prominent among these may be named tuberculosis, 1,840; diarrheal diseases, 1,151; diphtheria, 608; typhoid fever, 258; whooping-cough, 167; measles, 165; malarial fever, 93; small-pox, 89, and scarlet fever, 32. Among other prominent death causes which showed decreases were: apoplexy, 1,974 (this is probably due to more accurate certification); pneumonia, 2,203; bronchitis, 850; nephritis, 1,317; accidents, 773, and suicide, 153. Those diseases showing increases were cancer, 230; organic heart disease, 93; cirrhosis of the liver, 25; appendicitis, 23, and homicide, 63.

Pasteurization and Grading of Milk.—The department of health, at its meeting, January 31, adopted resolutions relative to the pasteurization and grading of milk which provide that all milk and cream offered for sale in the city, except that used for manufacturing or cooking purposes, must be of the grade technically recognized by the board of health as certified or guaranteed milk or must be pasteurized under the conditions prescribed by the board. Grade A, for infants and children, is to be sold in bottles, only. This includes certified milk, guaranteed milk or milk pasteurized under special regulations. Grade B, milk safe for adults, to be sold in bottles or drawn from containers, not dipped. This includes Grade A, and pasteurized milk produced under the regulations of the department. Grade C, milk suitable for cooking and baking purposes to be sold from bottles or from cans. This includes all milk complying with the general regulations of the department, but not complying with the regulations made for A and B. No one should use milk inferior to Grade A for feeding an infant or child. Every person purchasing milk for drinking purposes is entitled to receive milk not inferior to Grade B. The efforts of the department of health in the supervision of milk should be especially concentrated on Grades A and B.

Hospital News.—At the fifty-eighth annual meeting of the Mount Sinai Hospital Association it was reported that the deficit had been reduced to \$10,803. Legacies and bequests received during the last year amounted to \$73,762 and \$52,000 was received for the establishment of beds. The hospital has taken the initiative in planning an association of children's clinics throughout the city, and Adolph Lewisohn has promised \$130,000 additional, making \$200,000 in all, for the erection of a larger building for the accommodation of the pathologic department.—At the annual meeting of the officers of Stony Wold Sanitarium, which cares for cases of incipient tuberculosis, it was reported that 144 new patients had been admitted during the year. More than two-thirds of the patients have been discharged as cured since the sanitarium opened and these have been followed and report that they are as well as when they left the institution. The sanitarium has a deficit for the last four years of \$20,000.—Between \$11,000 and \$12,000, was realized from the performance of "Romeo and Juliet" at the Metropolitan Opera House for the benefit of the French Hospital.—The twenty-first German Charity Ball netted \$10,000, which will go toward the support of ten different German charitable and philanthropic institutions.—The Norwegian Hospital of Brooklyn has received \$15,000 from Jens Skougard, formerly president and treasurer of the board of managers of this hospital. The money will be added to the endowment fund of the hospital which now amounts to \$25,000.

TENNESSEE

Small-Pox at State Prison.—Seven cases of small-pox are reported at the state penitentiary, Nashville. All possible precautions are being taken to prevent the spread of the disease.

Personal.—Dr. Peter S. Hagar has been elected city prescriptionist of Nashville, vice Dr. John G. Buford, deceased.—Dr. Cary Snoddy has been reelected Superintendent of Knoxville General Hospital; Dr. Samuel H. Hodge has been

elected member of the visiting and consulting staff, and Dr. V. D. Holloway, pathologist.—Dr. Ambrose McCoy, Jackson, has been appointed a member of the State Board of Medical Examiners.

Society Elections.—The Chattanooga and Hamilton County Medical Society, at its annual meeting in Chattanooga, elected the following officers: president, Dr. James H. Atlee; vice-president, Dr. Frank T. Smith; secretary-treasurer, Dr. Hiller P. Larimore (reelected), and censor, Dr. Samuel I. Yarnell, all of Chattanooga.—Sumner County Medical Society has elected the following officers: president, Dr. William T. Allen, Gallatin; vice-president, Dr. Bruce S. Galbraith, and secretary-treasurer, Dr. Walter S. Dotson, Gallatin.—At the annual meeting of the Memphis and Shelby County Medical Society held in Memphis, Dr. W. Battle Malone was elected president; Dr. J. Wesley Price, vice-president and Dr. Buford N. Dunavant was reelected secretary, all of Memphis.

TEXAS

On Trial for Selling Diplomas.—Dr. J. W. Decker, dean of the Gate City Medical College, which now has its headquarters at Dallas, Texas, is reported to be on trial in the federal court of Dallas, on the charge of using the mails to defraud. Mr. J. N. Wilkerson, the attorney for the Texas State Board of Medical Examiners, is said to have succeeded in securing a medical diploma within thirty minutes after he made application for it.

Society Meetings.—The Matagorda County Medical Association, at its meeting in Bay City, January 16, elected Dr. Edward E. Scott, president; Dr. J. W. Reed, vice-president; Dr. James E. Simons, secretary, and Drs. Baxter Smith and Stephen A. Foote, delegates to the state association, all of Bay City.—At the annual meeting of the Galveston County Medical Society, held in Galveston, January 12, Dr. Howard R. Dudgeon was elected president; Dr. H. O. Sappington, vice-president; Dr. James Greenwood, Jr., secretary-treasurer, and Dr. Ashley W. Fly, delegate to the state medical association, and Dr. Henry C. Hayden, alternate, all of Galveston.—At the meeting of the Port Arthur Medical Society, January 9, Dr. L. F. Bland resigned as secretary and was succeeded by Dr. Pat Reed.—Lamar County Medical Society, at its annual meeting in Paris, January 7, elected the following officers: Dr. John B. Chapman, president, Dr. Andrew J. Rush, vice-president; Dr. James M. Hooks, secretary and delegate to the state association, all of Paris, and Drs. John D. McMillan, Paris, L. B. Stephens, Brookston, and Marcellus A. Walker, Paris, censors.—At a recent meeting of the health officers of Texas in Houston, the Texas Tropical Disease Research Society was organized with about 125 members. The following officers were elected: president, Dr. William M. Brimby, San Antonio; vice-presidents, Dr. Charles A. R. Campbell, San Antonio, and Charles L. King, Whitesboro, and secretary-treasurer, Dr. E. H. Lancaster, Houston.—At the annual meeting of the Central Texas Medical Association, held in Temple, January 16 and 17, Dr. Walter H. Allen, Marlin, was elected president, and Dr. Howard M. Lanham, Waco, secretary-treasurer.—The North Texas Medical Association, at its annual meeting held in Dallas, elected the following officers: president, Dr. Carey A. Gray, Bonham; vice-presidents, Drs. William G. Harris, Plano, and K. Herberden Beall, Fort Worth; secretary-treasurer, Dr. H. Leslie Moore, and Drs. John B. Smoot, Dallas, and Dr. S. D. Moore, Van Alstyne, judicial council.—At the annual meeting of the Seventh District Medical Society held in Austin, the following officers were elected: president, Dr. Thomas J. Bennett, Austin; secretary, Dr. Lewis B. Bibb, Austin, and censors, Drs. James H. White, Kile, and James W. McLaughlin and Robert M. Wickline, Austin.—Hunt County Medical Society has elected the following officers: president, Dr. Edwin P. Becton; vice-president, Dr. Thomas B. Spaulding; secretary-treasurer, Dr. John A. Bush, and censor, Dr. Milus L. Moody, all of Greenville.—At the annual meeting of the Bell County Medical Society, held in Temple, Dr. Ambrose B. Crain, Belton, was elected president; Dr. S. A. Watts, Pendleton, vice-president; Dr. Edward J. Burns, Temple, secretary-treasurer; Dr. Jacob M. Frazier, Belton, censor, and Dr. Milton P. McElhannon, Belton, alternate delegate to the state society.

GENERAL NEWS

Tri-State Physicians Meeting.—The thirteenth annual session of the Tri-State Medical Association of the Carolinas and Virginia will be held in Raleigh, February 22 and 23 under the presidency of Dr. Joseph A. White, Richmond, Va.

Tuberculosis Day.—April 30 has been set aside as Tuberculosis Day and will be observed in 200,000 churches in the

country in a manner similar to that of Tuberculosis Sunday in 1910. The National Association for the Study and Prevention of Tuberculosis asks that meetings, at which the study of tuberculosis and its prevention can be discussed, be held on Sunday, April 30, or near that date, so that the whole matter can be discussed throughout the United States at as near the same time as possible.

The Golubinin and Sirotinin Festchrifts.—The issue of the *Medizinskoje Obozryenie*, just received (No. 20), is a special number of 163 pages in honor of the professor of materia medica at the university of Moscow, L. E. Golubinin, president of the Moscow Medical Society. The *Russkiy Vrach* of the same date is also a *Festnummer* in honor of V. Sirotinin, professor of internal diseases at St. Petersburg. Among the many articles, Tchernorutzki reports that he found the Mandelbaum reaction positive in 100 per cent. of over a hundred cases of typhoid fever, and regards it as a valuable simple means for rapid differentiation of typhoid. (The technic was described in THE JOURNAL, March 5, 1910, page 827.)

Alcohol Literature Given Libraries.—Mr. A. D. Ellis of East Syracuse, N. Y., a business man of some means, has recently sent to every medical library in the United States and Canada a copy of the book, "Alcohol, a Dangerous and Unnecessary Medicine," by Mrs. Martha M. Allen, superintendent of medical temperance for the National Woman's Christian Temperance Union. The book was reviewed in THE JOURNAL some months ago and recommended to the respectful consideration of physicians, and this fact led Mr. Ellis to think it would be a good thing to present the book to medical libraries. He was greatly gratified at receiving some very warm letters of thanks for the gift, and kindly commendations of the book. He is now considering sending a copy to all the nurses' training schools. The book is largely a compilation of the writings of successful physicians who use little or no alcoholic liquors in their practice.

Health Crusade.—Mrs. S. S. Crockett, chairman of the Health Department of the General Federation of Women's Clubs, in a New Year's message, asks that every club in the general federation and the forty-five state federations, during the first month of the new year, hold a war council of all departments or committees and discover what every section or part of every club throughout the country may contribute toward the nation-wide health campaign instructed by the last general federation at its meeting in Cincinnati. Mrs. Crockett also asks for four successive advances on health enemies all along the line through a series of short term campaigns as follows: February—"The Common Drinking Cup." March—"The Typhoid Fly." April—"Oral Hygiene," and May—"Social Hygiene." Special tuberculosis campaigning will also be continued. The campaign headquarters for two years are at 710 Belmont Avenue, Nashville, Tenn.

Joint Conference on Education and Legislation.—The Seventh Annual Conference on Medical Education and Legislation, called by the Council on Medical Education and the Council on Health and Public Instruction of the American Medical Association, will be held at the Congress Hotel, Chicago, March 1-3, 1911. Speakers of national reputation will be present and an interesting session is expected. The first day will be given to addresses and reports on medical education; the second to a discussion of medical practice acts and the third day will be taken up by a conference on medical legislation. A program will be sent on application. Since two other educational agencies, namely, the Association of American Medical Colleges and the National Confederation of State Medical Examining and Licensing Boards are to hold their annual sessions in Chicago during the same week, an unusually large attendance of those interested in medical education and medical legislation is expected.

Warning Against Easy-Money Swindlers.—Several correspondents have written from Iowa recently regarding the Medical and Surgical Exchange Bureau, 1315 Capitol Avenue, Des Moines, Iowa, stating that an individual, calling himself A. W. Orris, has called on them alleging to represent the above bureau, and has offered to take their old medical books and give new books in exchange. On going over the list, the balance is always in favor of the agent, who requests and obtains a deposit, and this is stated to be the last heard of the agent. On investigation, they found that no such corporation or individual lived at the address given in Des Moines or had had an office at that address. Orris is said to be a man of about 60, with a black mustache, about 5 feet 10 inches in height, weighing about 180 pounds. He is said to be rather nervous and hurried in his manner, but to have good knowledge of medical books, and to carry with him a number of medical book cat-

alogues.—Another man, alleged to be a swindler, is reported from the City of Mexico. He presents alleged letters of introduction and pretends that he is an Odd Fellow and an Elk. He calls himself F. August Harbers, is a large, fair man, of about 35 years of age. Our correspondent does not state in what way he and others were victimized—perhaps they loaned money to him. Swindlers of various sorts are operating all over the country, and will continue to do so as long as they find it possible to succeed without capture.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 28, 1911.

Great Fall in Infant Mortality

The returns for 1910 show the unprecedentedly low figure of 106 deaths of infants under one year, per 1,000 births. The great improvement which has been made is shown by the fact that the figure in 1901 was 151. The previous lowest figures were 109 in 1909, and 118 in 1907. In London, the record is even more startling, the infant death-rate in 1910 being only 102, as compared with 148 in 1901; while in the part of England and Wales outside the 213 great towns the rate in 1910 was only 96. The importance of these figures may be gathered from the fact that had the infant death-rate in 1910 been as high as in 1904, 151,000 more deaths would have occurred. This result has been due to a number of factors. Cool summers always mean a low infant mortality, in consequence of a great diminution in summer diarrhea. But similarly cool summers have occurred in past years with no such low infant mortality. The principal cause is the great attention which has been paid to infant hygiene in the last few years. This dates from the Conferences on Infant Mortality, which were addressed by Mr. John Burns, the president of the local government board, in which he urged the sanitary authorities to "concentrate on the mother" and to secure for infants better conditions of housing and a more favorable environment. During these years, the Notification of Births Act (by which local health authorities can render compulsory the notification of births) has been adopted in the districts most needing its work. Following the notification is the health visitor who gives the mother any necessary advice. The subject of infant hygiene has become increasingly popular.

Prevention of Sleeping-Sickness

A conference, convened by the British government, is now being held daily at the foreign office, as a result of representations made of the danger of spreading sleeping-sickness by the construction of the Rhodesia-Katanga railway which runs beyond the Congo frontier. The delegates include M. Melot, representing the Belgium government, and Dr. Bagshawe of the Sleeping-Sickness Bureau. The conference recommends that in the case of new railway extensions the route of the lines should be inspected for the *Glossina palpalis*, that maps of the fly area should be prepared, that railways should cross the fly belt at the narrowest points and not follow them, that there should be no station, building, or stopping place in the area, and that laborers on the line should be recruited under such conditions as to avoid infection. At a meeting of the Royal Society reports were received from Col. Sir David Bruce, director of the society's commission for the investigation of sleeping-sickness at Uganda, describing the results of experiments to ascertain if the antelope and domestic fowl of Uganda act as reservoirs for the trypanosome of sleeping-sickness.

The tsetse flies around the northern shores of the Lake Victoria Nyanza still retain their infectivity for sleeping-sickness in spite of the fact that the native population was removed from the lake shore three years ago. A series of experiments was therefore carried out to ascertain if the antelopes, which are common on the uninhabited shores of the lake are capable of acting as hosts of the parasite of sleeping-sickness. Eleven antelopes of the waterbuck, bushbuck and redbuck species were obtained from a district where tsetse flies and sleeping-sickness do not exist. Blood from these animals was first inoculated into monkeys to ascertain if they were naturally infected with trypanosomes. They proved to be healthy in this respect. Tsetse flies known to be infected with the trypanosome were then fed on these antelopes. After about eight days the blood of the antelopes was inoculated into susceptible animals with the results that the latter became infected with trypanosomes in every instance. In eight out of the eleven antelopes the trypanosome appeared in the blood for a few days only (seven to twelve days) after they had been bitten by infected flies. Flies that had

been hatched out in the laboratory and had never fed before, were fed on the infected antelopes and subsequently on monkeys. After an interval of about thirty days (required for the development of trypanosomes within the fly) monkeys were infected by the flies in sixteen out of twenty-four experiments, but the animals remained in perfect health. No wild antelope inhabiting the lake shore has yet been found naturally infected. With regard to birds, there is evidence that tsetse flies feed on the blood of birds as well as mammals on the lake shores. But the conclusion from twenty-one experiments with domestic fowls was that these do not act as a reservoir for sleeping-sickness.

Physician vs. Pharmacist

The pharmacists have not been long in preparing a counter stroke to the report of the government commission on unqualified practice. As stated in a previous letter to THE JOURNAL, pharmacists were severely criticized for usurping the functions of physicians and prescribing for patients. The parliamentary committee of the Pharmaceutical Society has passed the following resolution which has been adopted by the general council of the society: "That having regard for the grave dangers attending the dispensing of medicine and the handling of poisons by unqualified persons, and to the fact that at the present time the precautionary measures imposed by statute on chemists and druggists do not apply in the surgeries and dispensaries of medical practitioners, the privy council be urged to authorize an investigation into the conditions under which the storage, compounding and dispensing of medicines, and their distribution, are carried on in various surgeries, dispensaries and similar establishments in Great Britain." This resolution refers to the fact that physicians are subject to no regulations whatever in the compounding and dispensing as are pharmacists. Thus the shops of the latter are periodically inspected and their drugs and preparations must be up to the standard of the Pharmacopoeia. Pharmacists complain that the physician's training in pharmacy is confined to a three-months' course and when he starts practicing he is allowed to handle the deadliest poisons free from the supervision of inspectors. The ideal of the pharmacists is that all medicines should be dispensed by a registered pharmacist, or under his supervision, but in the meantime they will agitate for the inspection of physicians' dispensaries. The contention of the pharmacists that physicians are not competent for their own dispensing is not correct. A physician who dispenses confines himself to a limited number of drugs and preparations for which he has a preference. At one time physicians made their own pills; now they almost always obtain them ready made. Cases of poisoning from mistakes in dispensing are exceedingly rare and cannot be said to occur more frequently in physicians' dispensaries than in pharmacists' shops. However, some physicians are in favor of confining dispensing to pharmacists. They consider this more in keeping with the dignity of the profession and desirable on other grounds, such as giving the physician more time for his proper work. This is the practice in the higher ranks of the profession. Indeed a man with the rank of M.R.C.P. (Member of the College of Physicians of London, a consultant's qualification) is not allowed to dispense medicines. But this ideal is unattainable by the rank and file of the profession. The fees are too small to allow the pharmacist's profit to be paid out of them. Sometimes the fee for advice and medicine at the physician's office runs as low as \$0.25, or even less, a sum lower than what may be charged by a pharmacist for a mixture.

Dentist Found Guilty of Manslaughter of a Patient Who Bled to Death After Extraction of Teeth

In a previous letter to the JOURNAL the case was reported of a girl, aged 19, a school teacher who on June 18 had some teeth extracted at Bantry, Ireland, by a traveling unqualified dentist. For some days before, she had had some bleeding from the gums and a purpuric eruption on the face, hands and other parts. The dentist injected cocaine into the gums and extracted four front teeth from the upper jaw and two from the lower. The girl left the room bleeding profusely from the mouth and went to a neighboring house, where she fainted. The dentist was summoned and tried to stop the hemorrhage with perchlorid of iron, but failed. A physician was then called but in spite of all that he could do the bleeding continued and the girl died at the end of forty-eight hours. The dentist has now been indicted for manslaughter. The judge, in summing up, said that it was a very serious thing that a man who was not qualified should practice dentistry, though the law permitted it. If the prisoner had been guilty of a mere error of judgment, although he was unqualified, the

jury should acquit him; but if they thought that under the circumstances he should have sent for a doctor and that the marks on the face should have shown him, if he knew anything, that this girl was suffering from purpura, they would be justified in coming to the conclusion that there was criminal misconduct which arose from gross ignorance. The jury found the prisoner guilty of manslaughter, but recommended him to mercy on the grounds of his ignorance and considered that the dental firm who employed him was culpable. The judge in passing sentence said that, having regard to all the circumstances, he did not think he should send a particular individual to jail who was the mere instrument of a company; he would allow him out on a personal recognizance of \$500 to come up for judgment when called on.

Carbon Monoxid Poisoning from a Benzine Explosive Engine

The explosive engine which has recently come so much into vogue in the motor-car, motor boat, and aeroplane, has proved a new source of carbon monoxid poisoning, as the following case, which is reported from New Zealand, shows: Five men went out fishing on a motor launch propelled by a six-horse-power benzine engine. One was a strong young fellow aged 20, in good health, who crawled forward past the engine and lay down in the cabin about 8 p. m. Soon afterward he was heard to groan, but lay quiet and soon thereafter was thought to be asleep. He could not be wakened at about 11:30 when the boat reached the shore. About midnight he was seen by a physician, Dr. Barelay. His face looked of a natural color, so that at the first glance the doctor thought he was alive. The body was still warm but there was no sign of heart's action or respiration. The prolonged use of artificial respiration and hypodermic injection of strychnin were without effect. Next day a necropsy was made. The lips were pinkish red. The blood was of the color of vermilion. There were no signs of organic disease. A specimen of the blood was found to contain carbon monoxid to the extent of 50 per cent. of saturation. As there was no fire on the boat the only possible source of poisoning was the benzine engine. Further inquiry showed that men attending these engines in the cabins of launches often have toxic symptoms—headache and dizziness. As precautions against such fatalities Dr. Barelay suggests the following rules for motor boats: 1. Adjust the supply of benzine and air as accurately as possible to secure complete combustion. 2. See that cylinder fittings are not leaking unduly. 3. Ensure as much ventilation as possible in the engine room.

New Regulations for Health Officers

The health officer, who was originally only a physician who combined public-health work with his ordinary practice, has become more and more differentiated into a special class. The government has issued new regulations for health officers, which further increase this change. In a memorandum just issued, the Local Government Board states that while excellent work has been done by many health officers who are also in private practice, experience has shown that it is desirable, wherever practicable, that the health officers should not be so engaged. The reason is that often they have to offend their clients in carrying out their public duties. In all the large towns and districts the health officer is now a specialist who devotes his entire time to public health, but in the smaller districts the work is still combined with private practice. The board now advises these districts to obtain the services of a man who is not engaged in private practice by combining with neighboring districts or by combination of other public appointments with that of public health. The public offices which the health officer may be allowed to hold are, school medical officer, police surgeon, public vaccinator, district medical officer, medical officer of the workhouse, superintendent of the isolation hospital and factory surgeon. The memorandum proceeds to urge that the salary offered to the health officer who devotes his whole time to public health work should be sufficient to attract men with good qualifications.

Complete Traumatic Avulsion of the Heart

The following remarkable case has been observed at St. Mary's Hospital: A boy, aged 6 years, was taken to the hospital dead from severe injuries inflicted by a motor omnibus. Though the external injuries were slight, consisting of bruises and abrasions and slight bleeding from the nose, the internal injuries were severe. They included depressed fracture of the symphysis pubis and left innominate bone and lacerated wounds of the liver, spleen and small intestine. All the ribs on the left side except the eleventh and twelfth were

fractured mostly in two places, before and behind; the right second rib was fractured. The right bronchus was severed and the pedicle of the lung nearly divided, but the lungs themselves were uninjured. The right pleural cavity contained blood and in its lower part the heart lay completely detached. The pericardium had been ruptured vertically on the right side, and through the aperture the heart had evidently escaped. There was a fracture of the spine at the level of the third dorsal vertebra. The upper end of the descending aorta and the esophagus were ruptured. In spite of the terrible internal injuries there were no marks of violence over the thorax.

Model Rules for Nurses

Sometimes nurses give annoyance to medical men by usurping the functions of the physician, in criticizing treatment and in other ways. The following model rules for inclusion in the rules of nursing associations have been drawn up by the British Medical Association: 1. The nurse shall in every case carry out the directions of the physician in attendance. 2. When requested in an emergency she may visit and render first aid without awaiting the instructions of the physician. 3. If in her opinion the attendance of a physician is necessary, she must insist that one be sent for, and if for any reason his services are not immediately available, she must, if the case be still urgent, remain with the patient and do her best until the physician arrives or the emergency is over. Should the advice to call a doctor be not acted on, the nurse must at once leave and report the case to her secretary, and must not attend again except in case of fresh emergency. 4. Should any further attendance be requested by the patient when the emergency is over, the nurse must explain that the physician will decide whether this is necessary. 5. No attendance after a first visit shall be given by a nurse unless she has informed a physician and received his instructions. 6. Apart from her duties as a certified midwife a nurse must on no account prescribe or administer on her own responsibility such drugs as should be prescribed only by a physician. 7. No midwife in the employment of a nursing association shall accept an engagement without first asking the patient to state, and herself registering the name, of the physician to be called should any emergency arise. 8. A nurse shall in no case attempt to influence a patient in the choice of a physician or of an institution.

Surgeon Sued and Acquitted for Purposely Leaving a Swab in the Intestine

A well-known surgeon, Mr. Charles Ryall, has been sued for leaving a swab in the intestine and the case has caused considerable interest in the profession. Mr. Ryall operated on a woman for fibroid tumor on Nov. 5, 1908; on opening the abdomen he found extensive adhesions and the operation proved severe and dangerous. In separating the adhesions, a tear 4 inches long occurred in the intestine. The adhesions prevented the bowel being brought out of the abdomen and it was necessary to take instant steps to stop possible leakage. He did the quickest thing—put a swab into the bowel, sutured the intestine and completed the operation without removing the swab, as he considered that this would have been dangerous. After the operation, he told the head nurse that there was a swab in the bowel and asked her to watch for its passage by rectum and she reported later that this had taken place. A few days after the operation, the patient suffered from pain which her physician attributed to flatulence. She recovered from the operation but the pain continued and in March, 1909, a "lump" appeared in her right side. On October 15, she passed a large swab which was hard and stiff.

For the plaintiff, Mr. Russell Howard, surgeon to the London Hospital, gave evidence. He stated that he had performed many abdominal operations but had never left a swab in the body which could not be removed within twenty-four hours. He had never heard of a swab being left in the body in the manner described. In cross examination, he admitted that if the tear in the intestine was 4 inches long it was proper to pack the intestine with a swab, but it should have been placed with a tape outside to call attention to the fact that it was there and enable it to be pulled out. For the defendant, Sir Alfred Fripp, Surgeon to Guy's Hospital, stated that it was a common practice to leave things in the bowel and that a Murphy button had been retained for years. Mr. Miles, surgeon to the Cancer Hospital, and Mr. J. E. Lane, senior surgeon to St. Mary's Hospital, gave similar evidence. The latter said that the operation was extraordinarily difficult and that the plaintiff had made a marvelous recovery. He considered that in using the swab and suturing over it Mr. Ryall showed great resource. The nurse stated that she was directed by Mr.

Ryall to watch for the passage of the swab. After the operation she gave the patient an enema which was followed by a satisfactory result. As the bowels were cleared before the operation and as no solid food had been given after it she thought the swab had come away and reported accordingly. In charging the jury, the judge said that up to the moment of bringing the action—and this was an important point in the plaintiff's case—the plaintiff said that no one could be found to say that any surgeon would adopt such a method as the defendant appeared to have done. It was quite true that, with one exception, no surgeon except the defendant had ever used a swab in the manner described, but the eminent surgeons who were called as witnesses were all of the opinion that this operation was very difficult and that the patient was fortunate to be alive. Mr. Lane had said that the defendant had shown great resource in using the swab as he did. The instant stopping of the torn bowel was vital. The jury returned a verdict for the defendant.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 20, 1911.

How the Fact of Death is Established in France

The Académie des sciences of Paris having recently awarded the Dugate prize to Dr. S. Icard of Marseilles, for his work entitled "The Verification of Death in Hospitals in France and Abroad and the Necessity of Early Necropsies," public opinion has been much interested to learn that the verification of deaths in hospitals is not always surrounded by sufficient guarantee. As usual in such cases, the political journals have greatly exaggerated the facts and have played on the feeling always aroused by the question of burial of the living. It is not in hospitals alone, however, that the verification of death leaves much to be desired. There is a regrettable lacuna in the French law on this point. According to the *Code civil*, the death should be reported to a government official by two persons, if possible by the two nearest relatives of the deceased and verified by the official. In other terms, burial may take place without any medical examination, except in cases in which the cause of death is suspected, in which the official should be assisted by a physician. In practice, no doubt, medical verification is seldom omitted. Thus in Paris, the fact of death has been established, for a long time, by physicians charged with this function and designated under the name of *médecins de l'état civil*. In 1866, a circular of the minister of the interior prescribed that the mayors of all the communes should delegate one or several physicians for this duty; but this circular was observed only in some large cities. In the country and in the small towns there is no organized means for verifying deaths. Accordingly, the interest aroused by the signs of real death to which Dr. Icard has drawn attention may be understood. One of these signs based on the hydrogen sulphid reaction may easily be observed, even by a non-medical person. Taking advantage of the fact that organic decomposition appears rapidly in the lungs, Dr. Icard takes a small strip of paper on which some characters have been traced invisibly with a colorless neutral solution of acetate of lead in distilled water. The strip of paper is placed in one of the nostrils of the body under observation. If at the end of twenty-four hours, the characters appear traced in black, death is certain, since pulmonary putrefaction has begun, disengaging the hydrogen sulphid which, acting on the neutral acetate, forms a black lead sulphid.

By the side of this non-scientific sign, which is manifested only at the end of twenty-four hours, Dr. Icard places a scientific sign, which gives immediate results. This is the fluorescein test, which consists in injecting into the veins or into the muscular masses an aqueous solution of fluorescein, so as to show the persistence or the cessation of the circulation of the blood. When an hour, or at most, two hours, after the injection, no characteristic coloration from the absorption of fluorescein is observed, such as intense yellowness of the skin and the mucosa, or green coloring of the eyes, it may be affirmed without doubt that death has taken place.

Illegal Practice of Medicine

In a previous letter (*THE JOURNAL*, Aug. 7, 1909, p. 468) I mentioned the case of the zouave Jacob, who, prosecuted for illegal practice of medicine, had been acquitted, the lower court sustaining the defendant's plea that he was merely a faithful intermediary between the spirits and the patients. This was, said the court, curing by suggestion but not practicing medicine. The court of appeal has reversed the first decision and condemned Jacob to pay a fine of \$20 (100

francs) and \$40 damages to the Syndicat des médecins de la Seine, which was civil party. The grounds of the decision were as follows: According to the terms of the law of Nov. 30, 1892, illegal practice of medicine consists in the habitual participation, by a person without the diploma of doctor of medicine, in the treatment of diseases (urgent cases excepted), the word "treatment" including every act or counsel tending to the cure or amelioration of a state of malaise or of disease, and not merely based on knowledge of the disease treated.

Professional Responsibility and the Organization of Physicians of the Seine

In view of the recent condemnation of Dr. Bazy to pay \$1,000 damages (*THE JOURNAL*, Jan. 14, 1911, p. 130), the administrative council of the Syndicat des médecins de la Seine, representing 1,700 physicians of Paris and the suburbs, passed a resolution that whereas, surgeons under the most critical circumstances need to decide rapidly and sometimes boldly, the indecision and timidity of a surgeon being always injurious to the patient, the surgeon ought to be held responsible only for actual gross fault, clearly established.

Reform of the Internship of the Hospitals of Paris

The committee of the Association des Internes et anciens Internes des Hôpitaux de Paris, has just adopted a resolution that the interns of the hospital of a provincial city which is the site of a Faculté de médecine, when they desire to enter the *concours* of the Paris hospitals, should not be obliged first to pass through the externship, as has been the practice up to the present. The adoption of this resolution would relieve the Faculté de Paris, for many provincial students, instead of coming first to Paris, would thus be able to take their first year of study in the province, which would be better for them, the material for anatomy being insufficient in Paris for the number of pupils.

Another resolution passed by this same committee is in line with a resolution passed by the Congrès de l'Internat français (*THE JOURNAL*, June 25, 1910, p. 2131), which is to the effect that interns on duty should at their request be allowed to take an entire consecutive year for scientific travel abroad.

Personal

M. Mirman, director of hygiene and public charities, department of the interior, was seriously wounded in the thigh by an insane man, who fired two revolver shots in the chamber of deputies, intending to assassinate M. Briand, the prime minister.

Advertising by Midwives

In the course of a study on abortion from the medicosocial point of view, Dr. Jacques Bertillon, *chef des travaux* of the municipal statistics of the city of Paris, has shown that fifty midwives advertise continually in the Paris papers. By collecting the advertisements from these papers, he has been able to make an exact estimate of the sum so expended annually by each of these midwives. One spends \$2,665 (13,325 francs); another spends \$1,611 (8,055 francs); nearly twenty spend on an average from \$400 to \$1,000 and the thirty others spend on an average between \$200 and \$400. These sums indicate that it is impossible that these midwives should practice their profession ethically and legally. Dr. Bertillon, therefore, believes that it is necessary to have the profession of midwifery put under inspection and to make a report of every miscarriage obligatory.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 12, 1911.

Poisoning by Butterine

As I reported to you in a former letter, a number of cases of poisoning were occasioned in Altona, Hamburg, Berlin and other cities by the use of a brand of oleomargarine manufactured by an Altona firm. Investigations undertaken in the institute for infectious diseases in Berlin have shown that dogs fed with the butterine sickened half an hour after eating, with great restlessness and vomiting. Several of the animals nearly died and one did so, twenty hours after the feeding. The necropsy of this animal showed marked reddening and swelling of the mucous membrane of the stomach and upper part of the duodenum. Investigations made under the direction of Professor Dnubar in the municipal institute at Hamburg, gave the same results, and he was able to reach a decisive

opinion as to the nature of the poison. As is well known, margarine was originally prepared by adding to minced beef tallow the stomach of the sheep or the pig in order to digest the tissue particles adhering to the tallow. The tallow prepared in this way was separated by pressure from the solid stearin-containing constituents, and the liquid oleomargarine was mixed finally with milk and macerated cow's udder and churned to butter. As a result of the favorable reception of oleomargarine which was first produced in Germany in 1876, the production has increased with us to the extent that the annual output is estimated at 200,000,000 pounds, having a value of about \$25,000,000 (100,000,000 marks). In consequence of the competition between various manufacturers, there has been an attempt gradually to cheapen the method of manufacture and this has been accomplished, mainly by the substitution of vegetable oils for the animal fat. Among the latter, cotton-seed oil, poppy oil, peanut oil, corn oil, sunflower oil and cocoanut oil have been used. Many factories have also used other oils, the origin of which was not given and the preparation of which was not always unobjectionable. In fact it has been shown that the cases of poisoning referred to must be attributed to the use of such an oil. Professor Dunbar found that the foreign oil was Maratti fat which is in consistence, color and smell identical with oil of cardamom. It was obtained from the seeds of the *Hydnocarpus*, a large tree common in India. The Maratti fat is sold in England as Moratti oil and is derived from a species of *Hydnocarpus* closely allied to the *Hydnocarpus kurzii* from which chaulmoogra oil is derived. *Hydnocarpus* seed oil has an appearance and composition very similar to that of chaulmoogra. One of the varieties from which the oil is derived is *Hydnocarpus anthelmintica*, and it is used as a vermifuge. Moratti oil is known commercially in Germany under the name *Kardamonöl* (not the same as oil of cardamom). The poisonous butterine consisted of more than 50 per cent. Maratti fat. Professor Dunbar demands that margarine factories shall be placed under official inspection, for the present cases of poisoning show that severe injury may result from its manufacture and that there is no assurance that the factories at any time may not use in the production of oleomargarine some oil even more injurious than the Maratti.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 19, 1911.

The Jubilee Hospital

The municipality of Vienna decided to erect a special large hospital to commemorate the jubilee of the Emperor of Austria two years ago, and a fund of over \$2,000,000 was granted for the purpose. The hospital is now finished and will be opened shortly. A committee consisting of medical men, experts in hospital building and other persons interested in the institution, was shown through the hospital a few days ago. The four leading ideas which the municipality wanted to bring into existence were: The hospital must not contain a clinic (for teaching), or any ward for infectious diseases; without undue centralization, the pavilion system should be adopted as little as possible, while large garden tracts were especially desirable; the outfit and the "running" of the hospital must be entirely up to date in scientific and technical respects; it should be also specially fitted for postgraduate work of the municipal physicians. The area at disposal was 152,000 square meters, or 2,710,000 square feet, of which only the space of 162,000 square feet is covered by buildings. The rest has been turned into parks, streets and pathways. For instance, one of the courtyards (or rather park yards) measures some 270,000 square feet. The hospital itself contains eight wards: the medical ward with 236 beds; a tuberculosis ward with 248 beds; one for surgical cases, with 118 beds; a gynecologic ward, with 48 beds; a large urologic ward, with 126 beds, which will be the largest ward of its kind on the Continent; a skin department, with 136 beds; 50 beds for eye cases and 18 for nose-and-throat cases. These 980 beds are accommodated in three huge buildings. There is a natural difference of ground level of 162 feet in this area, so that several institutions could be located, so to say, underground; thus, for instance, the x-ray department is so situated and the department of sterilization of bed-clothes and utensils. One of the most interesting features is the central bathing establishment. It contains all instruments necessary for hydrotherapeutic, electrotherapeutic, physiotherapeutic, phototherapeutic and mechanotherapeutic procedures, including a high-frequency current outfit. The tuberculosis ward faces south and is filled with open-air bedrooms and balconies. One wing of the central pavilion serves as home for the

nurses (sisters). There will be altogether 110 sisters, who will have twenty-eight rooms for themselves. The hospital contains the following rooms: thirty-six ward-rooms with double daylight illumination, containing from eighteen to twenty-six beds; six rooms for patients, with from six to twelve beds with single daylight illumination (only windows); fifty-four rooms for patients, with one or two beds; thirteen out-patient halls; twelve rooms for minor surgery and out-patient treatment; eighteen laboratories; seventeen bathrooms, besides the central bath; twenty-two kitchens and as many washing rooms; sixteen rooms for the medical staff, and besides, the necessary rooms for the chemists, the post-mortem department, the managing clerks, the receiving office, etc. Everywhere special care is taken to make the patients feel at home; therefore, all clinical experiments will be excluded; this has been one of the objections to the plan on the part of medical men. Apart from the large park where patients will be encouraged to spend as much of their time as possible, the supply of air per patient, filtered and warmed fresh, has been calculated with 40 cubic meters, or 1,200 cubic feet in the rooms, and the diet will be controlled by a committee of the local magistrates, to insure its good quality and taste.

Congress of Stomatologists in Graz Condemns Proposed Anti-Medical Legislation

The Austrian stomatologists are at present engaged in an earnest fight against certain attempts to permit medical practice by non-medical men. The government is pressed by a certain group of politicians to permit the technical dentists to practice the whole of stomatology without university examination. Protests by all medical corporations have been organized (THE JOURNAL, Nov. 26, 1910, p. 1906) and a lively campaign is going on just now. The Austrian stomatologists, at a recent meeting in Graz, demanded the erection of special dental colleges and the establishment of dental clinics in schools. The congress was of the opinion that the handing over of this important branch of surgical and prophylactic medicine to non-medical men, as threatened by the "dentists' act," meant "a permanent danger to the national welfare and spelled diminished resistance to outward dangers."

Miscellany

ADVERTISING SALVARSAN TO THE PUBLIC

The Truth About 606, the New Treatment for Syphilis, Discovered by Ehrlich and Hata

Ever since the discovery of salvarsan, popularly known as "606," THE JOURNAL has advised caution in the use of this powerful drug. The wide-spread prevalence of syphilis, and the speedy and wonderful results which this new remedy was said to have produced, at once aroused wide popular interest. Inquiries were made everywhere of physicians who were no less interested and sought reliable information concerning it. Its discoverer was fairly deluged with letters and telegrams asking for information and even demanding supplies of the drug. The medical journals at home and abroad, as well as the daily press, contained glowing accounts of its marvelous effects, some of the stories in the newspapers being of the most sensational sort. The discoverer of the drug did not allow it to be placed on the market for over a year after its discovery, but supplied it to a few selected physicians, so that it might be used under favorable conditions. It was administered to a large number of patients who consented to its use, in order that the exact indications and results might be determined. Its use in Europe was limited to a few large hospitals. A supply was sent to the Rockefeller Institute in this country and was given out to a selected list of men, in order that its value might be carefully tested. Dr. Ehrlich insisted that it must be used in at least ten thousand cases and the results reported to him before he would allow the drug to be sold. He pointed out that it was a most powerful drug and, if used in any but suitable cases, might do great harm.

In the light of our present knowledge, the drug seems to having a striking effect, destroying the living organism which causes syphilis, and healing—temporarily at least—superficial lesions on the skin and mucous membrane of the

month and throat in a few days. Such results caused the physicians who were working with the drug and those who saw the cases to become over-enthusiastic in regard to it. Exaggerated statements began to appear in the medical journals; the newspapers, seizing on these reports, and not understanding either the limitations or the dangers of the remedy, at once began making the most sensational announcements concerning it, asserting that one dose of this wonderful discovery would cure a disease which has been one of the scourges of humanity for centuries. Public interest in this new remedy has only been equaled by that aroused by Koch's tuberculin twenty-five years ago.

But it is already evident that the first claims made for salvarsan must be modified. It is also evident that when used carelessly or by incompetent persons it is not only disappointing in its results, but actually dangerous.

In an editorial last year, *THE JOURNAL* said: "It is not only possible, but probable, that the enthusiastic claims which some of the users of this new remedy are making for it will, in the light of future developments, be greatly modified." This prediction has already been verified. It has been found, for instance, that many relapses occur after apparent cures and that ill effects have been produced by it in cases which were not properly selected or in which the drug was not used with proper precaution. It must not be forgotten that salvarsan is a preparation of arsenic and must be used with great caution. Like most arsenic preparations its use may be followed by serious results; for instance, it may have a disastrous effect on the eyes. It has also been found that its therapeutic value is more limited than was at first supposed. It has no beneficial effect in locomotor ataxia, or in general paralysis of the insane, or softening of the brain, as it is popularly called, although the most enthusiastic claims for the cure of these troubles were at first made.

But the most deplorable result of the publicity regarding this remedy is its exploitation by quacks. As might be expected, a remedy which excited such public interest, and which promised such marvelous results at once stimulated the cupidity of the quack and the charlatan. The *Bulletin of Pharmacy* says, "The discovery of Ehrlich's new remedy for syphilis had hardly been announced when the medical charlatans of New York City began advertising treatment with '606.' Of all the brazen quackery, this was the worst." Salvarsan was not then on the market and could not be obtained generally, even by physicians, until about the first of the present year. But this was a mere trifle to the quacks, who prey on the misfortunes of credulous humanity. To them it afforded a golden opportunity, and they immediately embraced it. Newspapers have contained such advertisements: "606, Prof. Dr. P. Ehrlich's Cure for Blood Poison. Now on Sale. All Symptoms Removed in 2 Days. One Dose Cures. Remember, All Symptoms Disappear in two Days. One dose cures permanently. Salvarsan can be taken in the privacy of the home. For thirty dollars the '606 Laboratories' will ship in plain unmarked package the necessary dose with simple directions." Such false and misleading statements printed with pseudo-scientific matter bringing in the names of Ehrlich, Pasteur and Flexner and others, have induced dupes to send \$30 for a dose of salvarsan (or what is claimed to be salvarsan) the regular price of which is \$3.50, in the hope of curing themselves, when, in reality, the drug could not possibly be self-administered.

The truth about this remedy should be spread broadcast by physicians, by medical journals and by the press so that the public may not be imposed on by fakers, quacks and charlatans. The public should know that this preparation contains a very large percentage of arsenic, a most potent, poisonous and dangerous drug. It should also be known that it has not yet been proved that salvarsan permanently cures syphilis or "blood poison" in one dose, or even in any number of doses; that it cannot be used by patients themselves; that it must be given either hypodermically or intravenously by a competent physician, and that the patient should remain in a hospital for a number of days after its administration; that the drug is difficult to prepare and that it requires expert knowledge and experience both to prepare and to give it; that

if not properly given it may cause intense pain lasting for hours or days and may cause destruction and sloughing of tissues at the site of injection; and that it may cause blindness, and that in some cases it may injure the heart or the kidneys and may cause death. Those physicians who have the largest experience in giving the drug are finding that the results so sensationally heralded at first are not permanent and that the dangers are much greater than were at first supposed. The statement made in the newspaper advertisements that "if you are threatened with blindness, paresis (complete loss of memory), rotting bones, decaying brain, ALL caused by contagious blood poison, '606' WILL SAVE YOU," is not true. The indiscriminate use of this drug by the public or by those not properly trained to administer it can only result in disappointment as well as loss of money and danger of serious injury or death.

Classification and Nomenclature of Cancers.—A committee composed of Drs. Delbet, Menetrier and Herrenschildt reported at the recent international cancer conference on a uniform nomenclature for cancer. They advocate that all malignant tumors should be divided into three classes: (1) epithelial cancers; (2) connective tissue-vascular cancers (the generic term sarcoma applies to this class), and (3) cancers formed of multiple tissues. The first group, epithelial cancers, is subdivided into (a) epitheliomas of the skin and mucous membranes with stratified pavement epithelium; (b) those of the glands connected with stratified pavement surfaces and linings, including the sweat, sebaceous, mammary and salivary glands and alveoli, the thymus, thyroid and hypophysis; (c) those of cylindrical epithelium as in the nasal fossæ, the sinuses of the face, the larynx, trachea, bronchi and lungs, stomach and intestines, uterus and tubes and fetal chorion; (d) epitheliomas of the glands connected with the digestive tract, the liver, the bile ducts and pancreas; (e) epitheliomas of the visceral glands and epithelial parenchymas, as in the suprarenals, kidneys, pelvis, ureters, bladder, urethra, prostate, testicles and ovaries; (f) epitheliomas of nerve tissue neuroglia and neuroganglia, and of the organs of sense, the ear and eye. The second great class, the connective tissue-vascular variety or sarcoma, includes (a) sarcomas of ordinary connective tissue; they may be either spindle-celled, round or polymorphous celled, myxomatous or lipomatous; (b) sarcoma of tissues originating in connective tissue, specialized in bone or cartilage; (c) sarcoma of blood or lymph vessel tissue or of the spleen pulpa. This category includes also affections intermediate between simple hyperplasia and cancer, the chloromas and multiple myelomas; (d) sarcoma of endothelial and perithelial tissues, including cancer of the endothelial lining of the great serous membranes, and endothelial sarcoma of the joints, of the blood-producing system, meninges and vessels; (e) melanic sarcoma, and (f) sarcoma of muscle tissue. The third great group, cancers with multiple tissues, includes (a) those with a double combined malignant evolution, and (b) cancerous evolution of teratomas and embryomas. The term "carcinoma" should be dropped, the committee declares. It is merely the Greek word for "cancer," and cancer, carcinoma and *Krebs* are merely different terms for "the crab." According to the nomenclature proposed the malignant growth should always be designated as either an epithelioma or a sarcoma, accompanied by the name of the organ or tissue from which it is derived, and when precision is desired, by the structure of the growth and whether it is typical, atypical or metatypical, as for example, "an osteoid osteoblastic sarcoma of the jaw," or "a metatypical and infiltrating cylindrical epithelioma of the fundus of the uterus."

Preparation for and Care After Gynecologic Operations.—Dr. E. Holzbaeh, assistant at the Tübingen university clinic for women's diseases, in the *Sammlung klinischer Vorträge*, No. 575, reviews the outcome of gynecologic operations since the introduction of spinal anesthesia, the predominant use of the abdominal route, the transverse incision, abstention from tamponing and drainage, and allowing the patients to get up earlier. He warns that some of the vital organs may not

be quite up to the task imposed on them by the anesthetic and the operation, so that when all seems to be progressing ideally, some one organ is liable to break down, and the patient succumb, when more careful preparation for the operation would have averted the fatality. Sudden diabetic coma, unexpected heart failure, cerebral hemorrhage from an overlooked contracted kidney, cystopyelitis or an irreparable psychosis might thus have been warded off if precautions against the special danger in each individual case had been taken or the psychic balance of the patient had been correctly estimated. He makes it a principle to inaugurate a systematic course of heart tonics before attempting any operation in case of a long existing myoma, as these growths and cancer are always accompanied by impairment of the heart and blood. In case of much hemorrhage, however, he refrains from heart tonics and saline infusion as liable to increase the tendency to hemorrhage and to dilute and possibly lake the blood. Even a small amount of salt solution may have this last effect. A little morphia, he declares, is the best means of combating the air hunger of anemia and conserving the heart energy. He remarks that all anesthetics have a more or less injurious action on the kidneys and even after spinal anesthesia the amount of albumin and formed elements in the urine notably increases; in pregnancy nephritis, spinal anesthesia is particularly dangerous on this account. If pathologic conditions in the kidneys are suspected they should be treated, the physician meanwhile striving to learn whether or not this complication contraindicates operation.

Every form of diabetes contraindicates all except urgent operations; coma is liable to develop in diabetics after inhalation or even local anesthesia, and Fñth has reported a case of death after myomectomy under spinal anesthesia. Holzbach reports another case in which death followed in coma 48 hours after spinal anesthesia, preceded by the scopolamin "twilight sleep" from which the patient never roused. Purg-ing enemas, etc., should be restricted to the minimum in diabetics before operations, while the food should be extra nourishing. With the transverse incision the intestines do not interfere with the field of operation, no matter how engorged they may be, while the bowels move afterward just as well whether the patient was purged beforehand or not. In fourteen recent major operations no attempt was made to keep the patients on a special diet or to empty the bowels before the operation and no meteorism followed while the bowels moved after the operation unusually early.

Subnormal Children and the Public School.—Henry H. Goddard (*Training School*, September, 1910) discusses what the public schools can do for subnormal children. He defines a subnormal child as one who is unable to do school work at the usual rate or who is behind his grade. The temporarily subnormal are those whose backwardness is due to sickness, physical impairment or unfavorable environment, who when the cause is removed will progress at a normal rate. The development of permanently subnormal children, if not at once totally arrested, is at least permanently retarded so that they become increasingly below the normal child of corresponding age, finally becoming completely arrested. These are the feeble-minded. They may be divided into (1) those whose development is totally arrested before the age of 3 (idiots); (2) those whose development is permanently arrested between the ages of 3 and 7 (imbeciles); (3) those whose development is arrested between the ages of 7 and 12. These it is proposed to call "morons," from the Greek word for fool—one who is deficient in judgment or sense. The morons and the imbeciles are the ones with whose development the schools are concerned. The school should give special attention to every child a year or more behind grade. Generally a sufficient physical reason can be found for his backwardness. If the reason is defective sight or hearing, the child should be sent to a specialist. If the reason lies in previous sickness or change in attendance from one city system to another then he may not need special care. If no condition of environment or of the physical organism is at fault, the child is either a moron or an imbecile, will always be behind and his development will finally stop completely some time before he is 12 years old. If his development becomes arrested at 6

he is an imbecile; if between 7 and 12 he becomes a high-grade feeble-minded child who can be trained to do a great many things, but who can never be made competent to take care of himself without direction. An examination in groups of these high-grade children, selected from 10,000 feeble-minded, shows that they are more variable in their growth and that they cease growing from two to three years earlier than the normal children. The lower grades are much farther below the normal in this respect. Such children must be taken out of the regular grades and given a special instructor who has been trained to understand them and to deal with them according to their natures. Mentally defective children constitute from 1 to 2 per cent. of the children in every school.

Value of Tuberculosis Classes to the Community.—In discussing this question, R. C. Cabot (*Journal Outdoor Life*, October, 1910) says: "A tuberculosis class is a weapon in the war against consumption. It is on the whole the most important weapon that we have, for in nine-tenths of the cases it is the only weapon available. Not more than one-tenth of those who suffer from tuberculosis can afford a change of climate or can be cared for in a sanatorium. The remaining nine-tenths must die unless they can be cured at home. This home treatment, with the hope of a home cure for tuberculosis, is the goal for which the tuberculosis class aims. The essentials of a tuberculosis class are: (a) a physician who knows tuberculosis thoroughly and is willing to give his time for a few hours a week to the examination of suspected cases and the general supervision of their treatment; (b) a nurse or trained visitor, who will carry out in the homes of the patients the details of the physician's instructions; (c) for the support and guidance of the undertaking, an antituberculosis association, whose members succeed by hook or crook in collecting between \$750 and \$1,000 a year. . . . One of the valuable functions of a tuberculosis class is to spread abroad the knowledge that not all tuberculosis, but only neglected tuberculosis, is dangerous—that not every patient, but only those who do not destroy their sputa and who neglect to cover the mouth while coughing, are a danger to others. The mere presence or contiguity of a consumptive is not dangerous. The presence of a tuberculosis class in a town, through its effect on public opinion, will tend to compel doctors and boards of health to obey the law. Rich and poor are alike in danger as long as there is tuberculosis not properly cared for in the community. In streets, public buildings, electric and steam cars there is always danger of contracting the disease as long as a single consumptive is allowed to remain ignorant of the dangers he scatters around him. To build a fence between the sound citizens and those infected, we need not so much isolation hospitals as we need home care and home teaching for every sufferer. When the patient refuses to protect himself and the rest of the community by adequate care of his sputa, the board of health should execute its authority, as it does in other contagious diseases."

Some Medical Aspects of Aviation.—Dr. E. Reymond of Paris is an experienced aviator besides practicing medicine and serving in the senate. He recently delivered a lecture on aviation at the Société de l'internat which is published in its bulletin (1910, vii, 223). He analyzes the flight of birds, remarking that he never had understood it until after he had tried to fly himself, and then describes his sensations as the monoplane rises with him and, being unable to see over the edge as it rises, he does not know whether he is going up or not. The injuries from a fall are about the same as from a fall from a high roof and the possibility of fracture of the spine or base of the skull calls for lumbar puncture. On the whole he has found that the accidents are much less serious than anticipated. In a recent collision between two aeroplanes at a height of about fifty feet, one aviator was extensively scratched and bruised but the lesions were all superficial. The other aviator was unconscious, but not even a bruise was found on him when he was taken from the machine, and two days later he was aviating again. Reymond remarks in conclusion that the sight of the aviator

as he emerges from his machine, greasy with oil and with his eyes blood-shot, does not commend aviation as an attractive sport, but he thinks that it is something more and better than a sport, and he urges the French to complete the conquest of the air, in which they were pioneers. He does not refer to the effects of high altitudes, his experience being limited in this respect.

CLIPPINGS FROM LAY EXCHANGES

A NEW SYNONYM

"The patient L—— Z——, . . . is suffering from zygoma, or a broken bone in the side of his face."—*Philadelphia Telegraph*, Jan. 14, 1910.

BAFFLES WISE MEN FROM THE EAST

Miss A—— L—— B——, for fifteen years teacher of astronomy and mathematics . . . died . . . from a malady of the brain new to medical science. The ailment was diagnosed as brain tumor. . . . During the operation the surgeons met baffling conditions. . . . The disease was found to be similar to crystallization of the brain, but after carefully studying the symptoms and searching medical encyclopedias for opinions, . . . the surgeons agreed that the case was the first on record. Specialists came from the East and pronounced the disease an unknown one."—*St. Louis Republic*, Jan. 12, 1910.

AN APPROPRIATE SCAREHEAD

"HIS BACKBONE REMOVED: F—— L—— W—— of . . . has been pronounced by his physicians to have a very fair chance of recovering from a very unusual operation by which local physicians removed a portion of his backbone."—*Newport (Ark.) Independent*, May 24, 1910.

WHY DELAY?

"Drs. D—— . . . operated on the little fellow . . . Funeral arrangements have not been made."—*Corunna (Mich.) Journal*, March 17, 1910.

PRESERVE US FROM OUR LOVING FRIENDS

"C—— B——, is noted about the state as an exceedingly clever antiseptic surgeon. His presence was in constant demand last year at dangerous operations. This peculiar genius of his procured him an excellent position in one of New York City's large hospitals."—*Franklin County Reporter*, Hampton, Iowa, Jan. 12, 1910.

DIE SCHOENSTE LENGEVITCH

"A paper will be read by Dr. B—— on 'Acute Arterior Poliomy Elitsy'."—*New Albany (Ind.) Tribune*, Jan. 25, 1910.

"Dr. A. D. K——, who had for his theme 'Opitus Media,' pertaining to the middle ear: . . . later Dr. W. H. P—— read a paper on 'Ephinacea.'"—*Lima (Ohio) Democrat*, Feb. 2, 1910.

Marriages

GEORGE EMMETT KNAPPENBERGER, M.D., Macomb, Ill., to Miss Agnes Carnduff of Aetna, Ind., January 26.

ADRIAN J. DEHAAN, M.D., East St. Louis, Ill., to Miss Clara Ziegenhein of St. Louis, January 24.

CHARLES F. ELY, M.D., Chicago, to Miss Leila Fairbairn at South Bend, Ind., January 27.

ALFRED L. S. KANE, M.D., Fort Wayne, Ind., to Miss Anna Marie MacDonald of Kalispell, Mont., in Chicago, January 23.

ROBERT EMMETT KEANEY, M.D., De Soto, Mo., to Mrs. McLouthlin, January 22.

CLARENCE BERTRAM LIVINGSTON, M.D., to Miss Addie Z. Johnston, both of Lowell, Mass., January 20.

HERBERT THEODORE WAGNER, M.D., Indianapolis, to Miss Helen Bond of Chicago, January 26.

J. ASA WALKER, M.D., to Miss Minnie Mae Kirst, both of Shawnee, Okla., Dec. 31, 1910.

Deaths

Sigmund Lustgarten, M.D. University of Vienna, Austria, 1881; a dermatologist held in high esteem in his community; died at his home in New York City, January 22, from general miliary tuberculosis, complicated by chronic nephritis and diabetes, aged 53. Dr. Lustgarten was a member of the Medical Society of the State of New York; American, New York, Austrian and German dermatological societies, and the Medical Society of Vienna. He was formerly a privat-docent in dermatology in the University of Vienna, and first assistant to Professor Kaposi. He was consulting dermatologist to the Montefiore Home, and Hebrew Orphan Asylum, and attending dermatologist to Mount Sinai Hospital. The medical board of the hospital, at a meeting January 23, adopted resolutions of the regret at the loss of one of the most faithful medical officers of the hospital, "distinguished by preeminence in his especial field of work, by unusual clinical ability, and by devotion to the highest ideals of the profession."

Abraham H. Strickler, M.D. Bellevue Hospital Medical College, 1866; for thirty-nine years a practitioner of Waynesboro, Pa.; died at his home, January 30, aged 70. During the Civil War, Dr. Strickler served as a medical cadet in the Federal service. For ten years he served as president of the board of health of Waynesboro. He was also a member of the school board and chief burgess. He was a member of the American Medical Association, and American Academy of Medicine, and prime mover and founder of the Medical Society of Franklin County, one of the most earnest workers in the society, a constant attendant at its meetings and indefatigable and watchful for its welfare. He was a member of the legislature in 1893 and 1894 and a leader in the discussions when the medical practice act was presented for passage.

Thomas Harris Cannon, M.D. University of Maryland, Baltimore, 1901; of Baltimore; a member of the American Medical Association and vice-president of the American Electro-Therapeutic Association; demonstrator in the clinical laboratory of the University of Maryland; physician to the Methodist Episcopal Home for the Aged, and surgeon to the Free Summer Excursion Society; a member of the hospital corps of the Army during the Spanish-American War; died in the University Hospital, January 29, from erysipelas, aged 32.

Bernard Wise Moore, M.D. University of Virginia, Charlottesville, 1894; a prominent practitioner of St. Louis; died at his home, January 22, from pneumonia, aged 39. After an internship in New York Hospitals until 1896, Dr. Moore moved to St. Louis, where he became instructor in obstetrics in Washington University, physician to Bethesda Maternity, St. Luke's Hospital, and the Martha Parsons Hospital for Children. Dr. Moore was admirably qualified for his work, an upright physician, a wise counselor and a staunch friend.

John W. Bond, M.D. New York University, New York City, 1846; demonstrator of anatomy in Baltimore University from 1846 to 1852; professor of theory and practice of medicine in Keokuk (Ia.) Medical College from 1856 to 1862; surgeon of the Thirtieth Iowa Volunteer Infantry from 1860 to 1865; later health officer of Toledo and for twenty-five years chief-of-staff of St. Vincent's Hospital; died at his home in Toledo, January 23, aged 86.

Eugene P. Hickok, M.D. Long Island College Hospital, Brooklyn, 1890; formerly a member of the American Medical Association; a member of the Medical Society of the State of New York, Brooklyn Neurological Society, and Brooklyn Pathological Society; visiting physician to Kings County and the Lutheran Hospitals; for many years a physician of East New York; died at his home on Lake George, January 19, aged 51.

Willis Warwood Ranshaw, M.D. Miami Medical College, Cincinnati, 1896; a member of the American Medical Association; and of the medical staff of Speers Memorial Hospital, Dayton, Ky., and Proctor's Children's Home, Covington, Ky.; and at one time health officer of that city; died at his home in Mammoth Cave, Ky., January 18, from heart disease, aged 39.

John Fletcher Byington, M.D. University of Michigan, Ann Arbor, 1897; a member of the American Medical Association, and American Academy of Ophthalmology and Oto-laryngology; professor of ophthalmology, otology and laryngology in the American Medical Missionary College, Chicago; ophthalmic and aural surgeon to the Battle Creek Sanitarium; died in that institution, January 27, from erysipelas, aged 39.

John W. DeWitt, M.D. Jefferson Medical College, 1863; a member of the Delaware State Medical Society; surgeon of the Seventeenth Pennsylvania Volunteer Cavalry during the Civil War; at one time president of the Delaware State Board of Health; and a member of the district board of pension examiners; died at his home in Saint George's, January 22, from senile debility, aged 70.

Oscar F. Davis, M.D. Kentucky School of Medicine, Louisville, 1885; first lieutenant Medical Reserve Corps, U. S. Army; formerly acting assistant surgeon, U. S. Army with service in the Philippine Islands; a member of the Association of Military Surgeons of the United States; died in the Army and Navy General Hospital, Hot Springs, Ark., February 1, from nephritis, aged 50.

Hugh Campbell Hendry, M.D. Bellevue Hospital Medical College, 1872; in 1875 police surgeon of Newark, and later a member of the board of education; for five years a member of the board of managers of the New Jersey State Hospital, Trenton; first president of the board of works of Newark; died at his home in Woodside, Newark, January 28, from heart disease, aged 61.

Arthur Walter Blair, M.D. University of Vermont, Burlington, 1881; of Dorchester, Mass.; a member of the American Medical Association; surgeon-general for the Commercial Travelers' Eastern Accident Association, and medical director of the Commercial Travelers' Boston Benefit Association; died suddenly in Duxbury, Mass., January 18, from heart disease, aged 62.

Charles G. Polk, M.D. New York University, New York City, 1858; acting assistant surgeon, U. S. Army, from 1865 to 1868; professor of chemistry in the Pennsylvania College of Pharmacy in 1875 and 1876; for more than forty years a practitioner of southwestern Philadelphia; died at the home of his son in Merchantsville, N. J., January 24, aged 75.

Frederick William Rohr, M.D. Bennett Medical College, Chicago, 1880; Rush Medical College, 1889; a member of the American Medical Association; for twelve years attending physician to the Alexian Brothers Hospital; director of the Illinois Piano College; died at his home in Chicago, January 27, from pneumonia following an attack of influenza, aged 52.

Justin Worthing Lamson, M.D. Rush Medical College, 1867; a member of the Missouri State Medical Association and Board of Pension Examiners of Neosho; mayor of that city, and a member of the legislature; until a few days before his death superintendent of State Hospital No. 3, Nevada; died at his home in Neosho, January 16, from nephritis, aged 67.

Edwin Darius Hutchinson, M.D. University of Vermont, Burlington, 1875; a member of the American Medical Association; a veteran of the Civil War; a member of the staff of the Noble Hospital, Westfield, Mass., since its opening, and later a member of the consulting staff; died at his home in Westfield, January 19, from pneumonia, aged 70.

Maurice Gardner Moore, M.D. Jefferson Medical College, 1894; a member of the American Medical Association, and formerly vice-president of the Indiana State Medical Association; lecturer on surgery in the Indiana School of Medicine; died at his home in Vincennes, Ind., January 26, from hemorrhage of the stomach, aged 39.

Frank Guy Sherwood, M.D. University of Buffalo (N. Y.), 1877; a member of the Medical Society of the State of New York and American Public Health Association; health officer of Albion; and coroner and jail physician of Orleans County; died at his home in Albion, January 27, from pleuro-pneumonia, aged 60.

Emory C. Gaffney, M.D. Hahnemann Medical College, Chicago, 1876; for several years a member of the Springfield (Ill.) Board of Health, and supreme medical examiner for the Fraternal Crystal Light Insurance Company; died at his home in Springfield, January 23, from cerebral hemorrhage, aged 61.

Charles E. Dow (license, years of practice, Maine); of Mapleton, Me.; for fifty-one years a practitioner; a member of the Maine Medical Association, and a charter member of the Aroostook County Medical Society; died in Boston, January 29, from cerebral hemorrhage.

W. Monroe Smith, M.D. Atlanta (Ga.) Medical College, 1895; a member of the Medical Association of Georgia; formerly ward physician of Atlanta, and a member of the common council; died while making a professional call, January 25, from heart disease, aged 38.

Franklin J. Whittemore, M.D. New York University, New York City, 1851; until 1890 a practitioner of Terryville and New Haven, Conn., and later in charge of a sanitarium at

Clyde, O., for several years; died at his home in Toledo, January 27, aged 82.

Henry Gregory Charles Van Beeck, M.D. Rush Medical College, 1887; a member of the Minnesota State Medical Association; a member of the board of education of Hastings; died at his home in that city, Dec. 23, 1910, from heart disease, aged 49.

Daniel A. Cassela, M.D. Eclectic Medical College of the City of New York, 1885; New York University, New York City, 1890; of New York City; died in one of his drug stores, January 30, from the effects of gunshot wounds of the head, aged 47.

Harry Stephenson Wetzel, M.D. Hahnemann Medical College, Philadelphia, 1898; of Dayton, O.; radiologist to the Miami Valley Hospital; died in that institution, January 19, from the effects of a self-inflicted knife wound of the throat, aged 41.

Henry Crippen Neer, M.D. Berkshire Medical College, Pittsfield, Mass., 1860; a member of the American Medical Association; of Park Ridge, N. J.; died in the Hackensack (N. J.) Hospital, January 27, while undergoing operation for cancer, aged 72.

Isaac E. Randall, M.D. Albany (N. Y.) Medical College, 1866; a hospital steward in the army during the Civil War; division surgeon at Bay City for the Michigan Central Railroad; died at his home, January 20, from heart disease, aged 66.

Walter T. Roberts, M.D. Hospital College of Medicine, Louisville, 1883; of Louisville; died in St. Joseph's Infirmary in that city, January 25, from nephritis, following an operation, necessitated by abscess of the middle ear, aged 51.

George B. Gray, M.D. Medical College of Indiana, Indianapolis, 1884; of Worthington, Ind.; a member of the Indiana State Medical Association; died in a sanitarium in Rockford, Ill., January 20, from nephritis, aged 47.

Donald Boyd, M.D. Albany (N. Y.) Medical College, 1903; health officer of Valatie, N. Y.; died at his home in that place, January 23, from the effects of morphin, self-administered, it is believed, with suicidal intent, aged 34.

Nathaniel Ray Chace, M.D. Hahnemann Medical College, Philadelphia, 1872; was found dead in his office in Newport, R. I., January 17, aged 68. The medical examiner decided that death was due to natural causes.

William Amos Conn (years of practice, Virginia); for thirty-eight years a practitioner; a Confederate veteran; died at his home in McGaheysville, Va., January 3, from cancer of the liver, aged 66.

Britton S. Utley, M.D. College of Physicians and Surgeons, Baltimore, 1878; a member of the Medical Society of the State of North Carolina; died at his home in Holly Springs, January 19, aged 68.

Christopher E. Corlett, M.D. Western Reserve University, Cleveland, 1902; house physician at St. Alexis Hospital, Cleveland; died January 23, at his home in Cleveland, from pneumonia, aged 33.

Alexander Hardcastle, M.D. Jefferson Medical College, 1849; a member of the General Assembly of Maryland in 1870 and 1872; died at his home in Denton, January 24, from pneumonia, aged 84.

Addison C. Fox, M.D. Jefferson Medical College, 1861; surgeon in the Confederate service during the Civil War; died at his home in Baltimore, January 23, from pneumonia, aged 75.

Joseph A. Diemert, M.D. Western Reserve University, Cleveland, 1886; died at the home of his daughter in Cleveland, January 22, from rheumatic endocarditis, aged 54.

William J. Middleton (license, Idaho, 1899); for nineteen years a practitioner, a pioneer of Idaho; died at his home in Saint Anthony, January 13, from paresis.

James Faith, M.D. Eclectic Medical Institute, Cincinnati, 1869; died at his home in Palmyra, Illinois, January 18, from pneumonia, aged 69.

Hilary Tucker Sweeney, M.D. Harvard Medical School, 1889; died at his home in East Boston, January 11, from heart disease, aged 44.

Eli Granger Clark, M.D. Western Reserve University, Cleveland, 1852; died at his home in Willoughby, O., January 29, aged 84.

Joseph Francis Grainger, M.D. Tufts College Medical School, Boston, 1906; died at his home in Cambridge, January 23, aged 28.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

BISMUTH IODO-RESORCIN SULPHONATE

Report of the Council on Pharmacy and Chemistry

A pharmaceutical preparation submitted to the Council was said to contain as its essential ingredient, bismuth iodo-resorcin sulphonate. In accordance with its general procedure, the Council investigated this unofficial constituent when it considered the preparation that was said to contain it. The following report was made to the Council in reference to this constituent:

The Council, having voted to take up the consideration of bismuth iodo-resorcin sulphonate, the Association chemists were requested to investigate the composition of the specimen submitted by the firm whose pharmaceutical preparation contained this substance as an ingredient. The composition of this article, as determined by the chemists, varied widely from the composition that was claimed by the firm. In view of these discrepancies, the Council directed that the chemists' findings be submitted to the firm and an explanation requested. This was done and the firm replied by acknowledging the differences in general, but attacking in many minor ways the findings of the laboratory. The Association chemists now report an exhaustive reexamination of the product in reference to the points involved. This, while showing a slight modification of the previous findings, because more refined methods were used, shows on the whole, that the firm was grossly ignorant regarding the composition of its product. It also shows that the firm's attack on the chemists' work was without justification.

As this furnishes a typical illustration of the many obstacles which are put in the way of the Council and the laboratory, and since it is a good illustration of the lack of reliance which is to be placed on the statements of many firms, the referee has requested the chemists who made the examination to prepare a record of their work. This record is now presented and it is recommended that the Council authorize its publication. As it is not believed that the submission to the Council of a preparation untrue to claims was deliberate on the part of the firm, and inasmuch as more recently a specimen of bismuth iodo-resorcin sulphonate, containing the amount of iodine claimed, has actually been received, it is recommended that when the report is published, the names of the firm and of the preparation be omitted.

The Council authorized publication of this report and also of the contribution from the chemical laboratory, but in accordance with its regular custom, both reports were sent to the interested firm before publication. The firm, in reply, requested that before publication the report be modified. The referee of the Council submitted this reply to the chemists for comment and then requested that the entire matter be assigned to a second referee for an opinion. This was done and the second referee submitted the following report:

"Your referee has gone over the whole matter of the claims for the composition of the bismuth iodo-resorcin sulphonate. The firm submitting the product gives a formula which calls for the presence of 19.69 per cent. of iodine and 43.17 per cent. of bismuth. A preliminary analysis made in the Association laboratory showed about 10 per cent. of iodine and about 50.6 per cent. of bismuth. When these findings were submitted to the firm they questioned the accuracy of the analyses and presented some analyses of their own, which, however, did not support their own claims for the formula, but do suggest that the product cannot be a definite chemical compound of the composition assumed. A second analysis in the Association laboratory shows now 11.59 per cent. of iodine, as against 14.2 per cent. reported by the firm's chemist. The firm next set up the plea that the discrepancy may be explained by the hygroscopic character of the product, which, they say, the Association laboratory did not take into consideration.

"The present referee is of the opinion that the contention of the firm does not conform to the facts. The formula pro-

posed by the firm gives a ratio of iodine to bismuth of 1:2.19, but according to the firm's own submitted analysis the ratio should be 1:3.19. This situation alone is sufficient to show the absurdity of the claim that the composition of the product is definitely known. It is probably an indefinite mixture, or at any rate a product the composition of which is not accurately known to the firm manufacturing it. The report of the Association laboratory gives the bismuth content even higher, and this would be still further increased if the moisture content were to be calculated out, as the firm finally contended. Such a correction would not help the firm's formula.

"Several of the statements in the letters from the firm are but little more than quibbles, and seem unworthy of consideration. The failure to substantiate a formula is enough to condemn the contention of the firm and to warrant a rejection of its claims. The final report of the Association laboratory appears to present a perfectly fair statement of the situation, and your referee recommends its publication in full as well as that of the first referee's report and of this report.

"It is worthy of notice, however, that while the Council is unable to accept bismuth iodo-resorcin sulphonate or the proprietary preparation containing it, as submitted by this firm, the firm's products have been materially improved as a result of the Council's investigation."

The second referee's report was adopted by the Council and in accordance with the recommendation, the matter is herewith published.

W. A. PUCKNER, Secretary.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

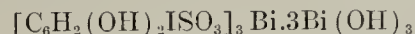
Bismuth Iodo-Resorcin Sulphonate

W. A. PUCKNER AND L. E. WARREN

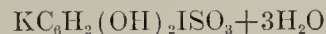
Some time ago a proprietary preparation (in the form of suppositories) which was said to contain bismuth iodo-resorcin sulphonate as its chief ingredient, was refused recognition by the Council because, among other things, the claims made in regard to its composition were not substantiated by the firm which sold it. Subsequently the results of the examination of this product in the Association laboratory were published,¹ and it was shown that the preparation contained only negligible amounts of iodine and hence could not possibly contain more than very small amounts of bismuth iodo-resorcin sulphonate.

A similar preparation was recently submitted to the Council with the claim that it contained bismuth iodo-resorcin sulphonate as its essential constituent. In accordance with its usual procedure the Council considered this constituent at the same time that the preparation containing it was taken up.

The formula assigned by the manufacturer to this substance is as follows:



Bismuth iodo-resorcin sulphonate apparently is not described in chemical literature. The manufacturer of the specimen examined stated, however, that the process for the manufacture of the substance was "the subject of a patent application" by the firm. The potassium salt, from which the bismuth salt is said to be prepared, has been obtained in the form of microscopic crystals containing three molecules of water of hydration.²



THE QUESTIONS INVOLVED

The points involved in the examination which is here reported³ have been classified as follows, for the purpose of bringing out the matter more clearly:

1. From the formula submitted by the manufacturer it was calculated that the bismuth salt should contain 19.69 per cent. iodine and 43.17 per cent. bismuth.

1. Anusol Hemorrhoidal Suppositories: THE JOURNAL A. M. A., Oct. 2, 1909, p. 1112.

2. Fischer: Monatschr. f. Chem., ii, 1881, 340.

3. The details of the analysis will be sent on receipt of a stamped, addressed envelope; they will also be published in the annual report of the chemical laboratory.

2. From the formula found in the literature it was also calculated that the potassium salt should contain 31.079 per cent. iodine and 13.22 per cent. of water.

3. In the first examination we reported finding but about 10 per cent. of iodine in the bismuth salt (in which 19.69 per cent. iodine had been claimed) and about 50.6 per cent. of bismuth, an amount considerably larger than that indicated by the formula.

4. We also reported finding about 28.06 per cent. iodine in the firm's specimen of potassium iodo-resorcin sulphonate in which, if the formula were correct, there should have been 31.079 per cent.

THE FIRM'S REPLY

These facts, substantially as given, were submitted to the firm which replied to the points raised as follows:

1a.—The theoretical iodine content of the firm's bismuth salt was 20.76 per cent. and its bismuth content was 45.36 per cent.

2a.—The potassium salt contained no water of hydration and theoretically should, therefore, contain 35.84 per cent. of iodine.

3a and 4a.—The method used by the Association laboratory for the determination of iodine was not a standard one in chemical literature since it gave but about 70 per cent. of the total iodine present. After the firm had reexamined a portion of the original specimen, it reported that by its method it had found 14.2 per cent. iodine. According to the formula it should have contained 19.69 per cent. iodine, although the Association chemists had found but about 10 per cent. iodine. The firm stated that in the earlier examinations of its product a reagent had been used which was afterward found to contain large amounts of chlorine. In making the iodine estimations this chlorine was weighed as (silver) iodide with consequent erroneous results, no control estimations, evidently, having been made.

REEXAMINATION BY THE LABORATORY

Our calculations of the theoretical iodine and bismuth content in bismuth iodo-resorcin sulphonate having been challenged, the values were recalculated. This recalculation showed that the values first reported were correct and that the firm's challenge was unwarranted.

Our findings concerning the iodine content in bismuth iodo-resorcin sulphonate also having been challenged, the iodine in the original specimen was redetermined by several independent methods. The highest result obtained by any method was 11.59 per cent. iodine. Although somewhat higher than that obtained by the method previously used, it is still considerably less than was claimed by the firm in its reexamination, viz., 14.2 per cent. An appreciable quantity of chlorine was also found, which may explain, at least in part, the firm's wrong estimate of its product.

On reexamining the potassium salt we found 32.00 per cent. of iodine and 10.41 per cent. of water—this notwithstanding the fact that the firm had asserted that its product contained no water of hydration.

A review of the above facts shows that the contentions of the firm could not be substantially confirmed. To summarize:

SUMMARY

1. The firm's claim that the laboratory's calculations were wrong is shown to be unfounded.

2. The firm's statement that its potassium salt of iodo-resorcin sulphonate contained no water of hydration is shown to be wrong, the salt, in fact, containing more than 10.0 per cent. of water.

3. The contention of the firm that the first method of analysis used by the Association laboratory gives low results is correct. The assertion is, however, not justified that the method gives but 70 per cent. of the iodine present since the amount first reported by us is about 88 per cent. of the amount found later.

The accompanying table gives in graphic form the essential points of the controversy.

	According to firm's formula or formula in literature.	According to an- alysis of Asso- ciation chem- ists.	According to the firm's revised statements.	According to the check analysis of Association chemists.
Iodine content in bismuth salt ...	19.69 *	10.00	{ 20.76 § 14.20	11.59
Bismuth content in bismuth salt ...	43.17 *	50.60	45.36 §	No analysis made.
Iodine content in potassium salt..	31.079 †	28.06	35.84	32.00
Water of hydration in potassium salt	13.22 †	No analysis.	0.0	10.41

* Based on formula given by firm.

† Based on formula given in literature.

§ These figures were later acknowledged by the firm to be incorrect.

PHYSICIAN AND DRUGGIST

Charles M. Siever, Ph.G., M.D.

HOLTON, KANS.

The difference that has long existed between physician and druggist in regard to counter prescribing and the refilling of physicians' prescriptions has been brought about, in part by the action of the physician himself, and in part by the misuse of the prescription by the druggist; that is, the refilling of the prescription by the druggist without the permission of the physician who wrote it. This refilling has often been done, not only for the person for whom it was originally intended, but for persons who have not had even a speaking acquaintance with the physician. Too many physicians use in their prescriptions so many proprietary preparations, which are so labeled, and the therapeutic indications given in such detail, that the druggist feels in dispensing them that he is handing out no more than a "patent medicine," and, as a matter of fact, that is what they amount to and what they often become.

Many patients soon learn the name of this class of remedies and call for them without a physician's prescription; so that in many cases the dispensing of ready-made preparations, or the refilling of prescriptions, is not wholly the fault of the druggists. While I believe the majority of druggists are honest and would not refill prescriptions if physicians asked them not to do so, yet many prescriptions are so simple, especially those for proprietary preparations—ready-made pills and tablets—that it is a great temptation for even the most honorable druggist to refill such prescriptions. In so doing he feels that he is saving the patient a fee, and also making a sale for himself. I do not believe the physician should use so much ready-made stuff, yet the druggist should not take advantage of his weakness, even in selling or refilling a prescription for such a simple thing as a laxative pill. There are many prescriptions refilled for patients which no doubt do them more harm than good, and in order to save the druggist from this temptation, and to protect the interests of the physician as well as the physical interest of the patient, there ought to be some better method devised than the one now in vogue.

This brings up the question of who owns the prescription. In my opinion, it is the exclusive property of the physician. It is simply an order on the druggist to prepare certain medicine for a certain person and to label it according to instructions. After it is filled, the patient has no more claim on it than he has on a check after it has been cashed. The druggist has no more right to retain the prescription than the bank has to retain the check after it has fulfilled its mission; but as a precaution and for the protection of the druggist he should be allowed to place it on file for a reasonable length of time, perhaps not to exceed thirty days. At the end of that time, it should be returned to the physician who wrote it, to be destroyed or otherwise, as he sees fit.

The working of such a system would be as follows:

The physician would give the patient a prescription, stating the date and for whom the medicine was to be prepared.

The patient would take the prescription to the druggist who would prepare the medicine and then stamp the prescription with a stamp which would state that the prescription had been filled on a certain date and was cancelled.

The druggist would then file it away for thirty days, but under no circumstances would he be allowed to refill, copy or in any manner communicate the ingredients of the prescription to any one, unless it be for his own protection on account of some alleged error, etc.

At the end of thirty days the prescription would be returned to the physician who wrote it.

I believe a law to this effect would be satisfactory to all concerned and accomplish a great deal in the way of getting the physician and druggist more closely together, which would be a most desirable thing; for a physician cannot hold his exalted position and give his best work to his patients if he has constantly to keep in mind commercial considerations.

Such a law, operating in all of the states, would make the relation of the physician and druggist more pleasant, would do away with counter prescribing by the druggist and would also lessen self-drugging by the laity.

[EDITORIAL COMMENT:—Dr. Siever gives arguments against the indiscriminate use of ready-made mixtures which are incontrovertible. They should convince those physicians who have been thoughtless enough to prescribe the various ready-made pills, tablets, syrups and elixirs with which this country is deluged that it is to the best interests of the physician, the patient and the public that individual prescriptions be written for individual cases. The proposed return of the physician's prescription to the writer within a specified time would be most desirable in many ways. At present the pharmacist is generally looked on as the custodian of the prescription and it will require considerable effort to convince the pharmacist and particularly the public of the correctness of this better view as to the ownership of prescriptions. A discussion of this matter would certainly be of interest].

Correspondence

The Niemeyer Pill

To the Editor:—The well-known pill of calomel, squills and digitalis no doubt antedates the time of Niemeyer, as suggested by Dr. James Tyson in THE JOURNAL, Jan. 21, 1911, p. 211. It was usually prescribed:

R Hydrargyri chloridi miti. 3ss
Pulveris scillæ ʒi
Pulveris digitalis 3ss

M. et fiat pilulas XXXII.
Sig. One every four or five hours.

This pill was used for ascites, dropsy and effusions. I worked out many a one over forty years ago, and my father-in-law, the late Dr. Henry Carpenter, prescribed and worked out the same formula more than thirty years before my time. There was, however, a pill prescribed by Dr. C. Murchison, of London, consisting of:

R Pulveris scillæ gr. iss
Pulveris digitalis fol. gr. ss
Pilule hydrargyri gr. ii

M. et fiat pilulam I.
Sig. One such pill three times daily in ascites.

This pill enjoyed a long and creditable reputation in the treatment of dropsy.

Felix v. Niemeyer's pill may have been suggested about 1869 (See his Text-Book on Practical Medicine, Am. Ed., 1869, Vol I, p. 244) with a view of combating the fever of phthisis. It consisted in:

R Pulveris digitalis fol. gr. ss
Pulveris ipecacuanhæ
Pulveris opii, aa. gr. ¼
Extracti helenii, q.s.

M. et fiat pilulam I.
Sig. One pill three times daily.

Quinin sulphate, gr. 1, was added to the above prescription when the type of fever became periodical, and the exacerbations and chills much pronounced.

ROBERT M. BOLENIUS, Lancaster, Pa.

[The above was submitted to Dr. Tyson who comments:]

To the Editor:—Dr. Bolenius is correct. Of course many modifications of the doses and even constituents of the true Niemeyer's pill have been made by various prescribers to meet

special indications and it is likely that Niemeyer's pill itself was suggested to him by Heim's pill which is also given on page 244, Vol. 1, of Niemeyer's "Practice" and of which the formula is given by Dr. Bolenius in the last prescription of his letter. Niemeyer says much the same thing in his "Practice" as I quoted but I preferred to refer to his little book on "Pulmonary Consumption" because it is especially devoted to the subject.

Since my letter to THE JOURNAL Dr. Cattell has called my attention to the fact that in his "Medical Dictionary" published by Lippincott, edition of 1910, he has given the correct formula for Niemeyer's pill and I so find it.

JAMES TYSON, Philadelphia.

Pasteurized Milk at Randall's Island

To the Editor:—In THE JOURNAL (Jan. 7, 1911, p. 20), there appeared a very interesting paper on infant mortality by Drs. Koehler and Drake. On page 23 were the following paragraph and table:

The Mortality at the Infant Asylum at Randall's Island.—When the infants in the care of the City of New York were fed on milk from a carefully selected herd pastured on the island, the death-rate was as shown in the first part of Table 5. A pasteurizing plant was installed in the early part of 1898. No other change in diet or hygiene was made.

TABLE 5.—DEATH-RATE AT THE INFANT ASYLUM, RANDALL'S ISLAND

BEFORE THE USE OF PASTEURIZED MILK			
	Children Treated	No. of Deaths	Percentage
1895.....	1,216	511	42.02
1896.....	1,212	474	39.11
1897.....	1,181	524	44.36
Total.....	3,609	1,509	41.81
AFTER THE USE OF PASTEURIZED MILK			
1898.....	1,284	255	19.80
1899.....	1,097	269	24.52
1900.....	1,084	300	27.68
1901.....	1,028	186	18.09
1902.....	820	181	22.07
1903.....	542	101	18.63
1904.....	345	57	16.52
Total.....	6,200	1,349	21.75

The Department of Charities published no reports from 1894 to 1902. Examination of the original records shows that, while the figures are correct for the most part, the accompanying statements and deductions are erroneous. Similar assertions have been made before and refuted in public meetings at the New York Academy of Medicine and elsewhere, as well as in print.

The following extracts from the minutes of the meetings of the medical board show chronologically the development of feeding by sterilized and pasteurized milk, and the difficulties attending its introduction in a public institution:

1888—October. "Recommended that a method of sterilizing milk be adopted for the Infant's Hospital."

1890—October. "Dr. Van Santvoord reported that some weeks ago he investigated the method of sterilization of the milk practiced in the Infants' Hospital and found that it was very carelessly done by the workhouse women. He put it under direct control of the managing nurse and the result had been greatly to the benefit of the children."

1893—February. "Recommend immediate change in sterilization of milk. That it be put (again) in charge of a competent nurse," etc.

1895—February. Special report on milk-supply by W. L. Stowell. "Bottle-fed infants are given milk from cows on the island. . . . The milk is brought to the hospital immediately after milking and then pasteurized for twenty minutes at a temperature of 170 F. This is done in large steam caldrons in the kitchen."

NOTE.—This is the first year of the table mentioned as "Before the Use of Pasteurized Milk." An error.

1896—In this year percentage feeding was introduced. A number of stock formulas were made up daily and pasteurized for twenty minutes in feeding bottles bearing metal collars with the percentages as 3.5-6.5-1.5. This was done for a time in the steam cooking-caldrons, but later in wash-boilers heated over gas stoves.

NOTE.—This year also appears in the table as "Before the Use of Pasteurized Milk." An error.

1897—July. Walker-Gordon cream was recommended.

1898—This was a revolutionary year in the history of the institution. The infants were removed to pavilions and the main hospital was practically rebuilt except the walls. There were new plumbing, new floors and new metal ceilings throughout.

Beginning in January, 1898, all the bottle-fed infants received modified Walker-Gordon cream. At the March meeting Walker-Gordon cream was mentioned with praise.

April meeting. The executive committee reported that Mr. N. Straus had given a pasteurizing apparatus for milk. This proved to be a set of eight copper boilers instead of the tin ones used until then. The committee also commended the nurse in charge of the milk.

In May, "Attending Physician Stowell reported more and better nurses than heretofore, more graduate nurses and therefore better results." The number of wet-nurses was increased from twenty to fifty and they nursed 139 babies. "No change in diet," says the paper.

Beginning in January all infectious diseases were removed from the island by the Department of Health, thus saving mortality figures at Randall's Island.

Boarding or farming-out was resumed in April, sixty-one babies being sent to country homes. "No change in hygiene was made"?

The superintendent's report to the commission contains this: "Many improvements were inaugurated and carried out."

1901—January. Dr. Neff reports a great number of infants in bad condition, and says: "The milk fed the children should come from the cows on the island" (referring to bottle-fed infants).

1903—October. "An average of thirty babies daily have received modified milk prepared from Walker-Gordon cream. Cooley creamers have now been provided and hereafter we can produce our own gravity cream." This was in the hope of having fresh cream with low bacterial count.

Thus we find that Walker-Gordon cream was in use for six years, 1898-1903, whereas the article referred to credits "a carefully selected herd on the island." Alas! the history of that herd and their tuberculosis has been published (*Medical Record*, June 20, 1908).

It is a matter of record that sterilized milk was in use there as early as 1890, and that pasteurized milk was in use through all the years of the table. "Before and after the use of pasteurized milk," are therefore contrary to fact. Instead of "no change in hygiene," there was removal of some infants to pavilions, some to the country, and all the contagious cases from the island. Instead of "no other change in diet" witness the records:

	1897	1898	1899	1900	1901
Orphans wet-nursed	21	138	152	156	159
Orphans bottle-fed	591	506	462	389	262

The percentage of deaths was at its highest point under pasteurized milk. Other factors caused the fall, not pasteurized milk.

WILLIAM L. STOWELL, New York.

Visiting Physician to the New York City Children's Hospital and Schools, Randall's Island.

[A proof of the above was referred to the authors of the article criticized and they reply:]

To the Editor:—The statistics quoted in our article were taken from page 243 of the chapter on "Morbidity and Mortality Statistics as Influenced by Milk" in Bulletin 56 of the Hygienic Laboratory, entitled "Milk and Its Relation to Public Health." The article is written by Dr. J. M. Eager, Assistant Surgeon-General, Public Health and Marine-Hospital Service. No reference is made to the original source of these statistics, and we took it for granted that they were taken from the reports of the Infant Asylum at Randall's Island, by the government official. We have not had a chance to examine the original records giving the mortality figures for the Infant Asylum at Randall's Island, and are glad to note that Dr. Stowell says that the figures quoted "are correct for the most part."

The fall in the death-rate since 1879 is attributed in our article to the installation of a pasteurizing plant. The extracts from the minutes of the meeting of the medical board of the institution show that the pasteurizing plant was given by Mr. Nathan Straus to the institution in April, 1898.

Extracts from the minutes are quoted to show that before this time the milk had been sterilized, and that in 1895 the milk was heated in large steam caldrons in the kitchen, and in 1896 in wash boilers, heated over gas stoves. From the comments on the methods of "sterilization" practiced, appearing in the extracts of the minutes for 1890 and 1893 it appears that they were not carried out very satisfactorily.

The improvements made since 1897 in the sanitary conditions of the institution, and in the care of the patients are such as have been made in many other infant asylums and hospitals. In the report of the Department of Charities for 1893 there is recorded a long list, covering three pages, of improvements in the building, equipment and caretaking. Why did this not result in an immediate lowering of the death-rate in 1893?

Bottle feeding was practiced quite as extensively in 1898, as in 1897, and the percentage of deaths in the two years is 44.36 and 19.80, respectively.

After a careful study of the extracts from the minutes quoted in Dr. Stowell's letter, we are still of the opinion that the fall in the infant mortality, beginning in 1898, simultaneously with the installation of improved pasteurizing apparatus given by Mr. Nathan Straus, is due to the change in diet and cannot be explained on the basis of sanitary improvements or attributed to the other changes made in the institution.

GOTTFRIED KOEHLER, M.D., Chicago.

Assistant Commissioner of Health.

C. ST. CLAIR DRAKE, M.D., Chicago.

Assistant Chief, Bureau of Vital Statistics.

Not Prepared to Furnish Cancer Serum

To the Editor:—In the New York news in THE JOURNAL, January 28, it is stated that I have announced that I am prepared to supply a serum which has been shown to be effective in treating cancer. This statement is wrong. The dispatches which have appeared in the daily press referring to an interview in one of the Buffalo papers have been so changed from the original as entirely to misrepresent my position.

I have not announced a cure for cancer. Neither do I believe that vaccination will be beneficial in more than a limited percentage of cases. The results obtained in this laboratory have shown that methods which have given experimental results with animals have some applicability in human beings. There have been encouraging results in a limited number of cases. The method is not applicable in advanced cases; some patients have done badly under this treatment.

The matter is still in the experimental state, and it is not possible to place the vaccine in the hands of the profession, nor would it be desirable for patients to come to Buffalo at the present time. The results have been sufficiently encouraging, however, to warrant asking the State of New York to provide a hospital for the purpose of developing and elaborating this and other methods of treatment for cancer.

HARVEY R. GAYLORD, Director of Cancer Laboratory.

Pneumonic Plague in China

To the Editor:—Noting the pneumonic character of the plague in China and the fact that there are no dead rats, I would say that while in Siam it was my observation and knowledge that the pneumonic form of the disease was contracted from patients with the bubonic form and from rats, I have also found dead rats and dead chickens under the houses of those dead of the pneumonic form of the plague.

Eleven people died in one house of the pneumonic plague. The disease was carried by infected rats which traveled from Korat, where the bubonic form prevailed, in freight trains loaded with rice, to Ban Phagi, 100 miles away, where plague in the pneumonic form broke out ten days later than at Korat. The reason the pneumonic form was not so prevalent in Siam is that the people live practically in the open air, so that personal contagion is greatly eliminated.

CHARLES S. BRADDOCK, JR., New York.
Late Chief Medical Inspector, Royal Siamese Government.

A Correction of the Carnegie Foundation Report on Medical Education in Montreal

To the Editor:—Permit me to utilize your columns in order to rectify an error in Bulletin 4 of the Carnegie Foundation, dealing with Medical Education in the United States and Canada. I refer to my account of the medical department of Laval University, Montreal. This institution is entirely distinct from Laval University, Quebec, which also has a medical department. The Quebec school, however, publishes in its catalogue certain data respecting the Montreal school, and I inadvertently give in my account of the Montreal school some material taken from the inadequate statement in the Quebec catalogue.

The staff of the Montreal school numbers 50, of whom 20 are professors.

The number of beds in the two general hospitals used should have been given as 290, and an additional statement that the school has several supplementary hospitals should have been made.

The lectures on chemistry for medical students are given by a professor in the medical faculty.

ABRAHAM FLEXNER, New York City.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

AGAR-AGAR IN CONSTIPATION

To the Editor:—Please describe the use of agar-agar in the treatment of constipation. X. Y. Z.

To the Editor:—Please give references to the literature on the agar-agar treatment of constipation. J. K. B.

ANSWER.—A small proportion of constipated individuals owe their constipation to a too vigorous digestion, which removes from the intestinal contents all the soluble and nutritive constituents and leaves a mass which becomes hard and dry, and in which bacteria fail to produce the acids which normally stimulate the bowels to move. This difficulty is often increased by a too nutritious diet; that is, the patient is not in the habit of eating enough food with debris in it, such as whole wheat or graham bread and the vegetables and fruits which have indigestible fibers.

For this condition agar-agar is prescribed because it is an insoluble and indigestible substance with a marked affinity for water; consequently, when a considerable quantity of it is taken it absorbs water in the intestinal canal, and thus renders the feces soft and bulky. The softness ensures easy passage and their bulk stimulates the action of the bowel on the principle that tension of a muscle arouses its contractile power.

Agar-agar is found in commerce in the form of strips, which must be ground or cut into small pieces for use. It can also be obtained in the form of a coarse powder. It is administered in a dose of from a teaspoonful to a tablespoonful, or more, once or twice daily, mixed with some form of food, such as cereal, stewed apples, etc.

The following articles discuss this subject:

Schmidt, A.: Explanation and Rational Treatment of Habitual Constipation, *München. med. Wchnschr.*, Oct. 10, 1905; abstracted in THE JOURNAL, Dec. 23, 1905, p. 1992.

Mangelsdorff: Agar-Agar in Habitual Constipation, *Therap. Monatshefte*, May, 1908; abstracted in THE JOURNAL, June 20, 1908, p. 2117.

Gompertz, L. M.: Chronic Constipation Clinically Considered, *Am. Jour. Med. Science*, October, 1909.

Martinet, A.: Agar-Agar in Chronic Constipation, *Presse Médicale*, Paris, March 30, 1910.

Gompertz, L. M.: Agar-Agar Treatment of Chronic Constipation, *Practitioner*, London, May, 1910; abstracted in THE JOURNAL, July 2, 1910, p. 89.

Morse, L. J.: Agar-Agar in Treatment of Constipation in Childhood, THE JOURNAL, Sept. 10, 1910, p. 934.

WORKS ON PRODUCTION OF CLEAN MILK

To the Editor:—I note in THE JOURNAL (January 7, p. 48), an editorial on milk production, in which you refer to an article in *Hoards Dairyman*. Please give me the address of the publishers, and the names of publications and publishers of any other recent works on the production of clean milk.

W. B. SUMMERALL, Atlanta, Ga.

ANSWER.—*Hoards Dairyman* is a periodical published in Chicago, at 164 Dearborn Street.

The following are some of the books which may be consulted on this subject; the Hygienic Laboratory bulletin gives a very complete bibliography:

Pearson: Jensen's Milk Hygiene, J. B. Lippincott Co., Philadelphia.

Spargo: The Common Sense of the Milk Question, Macmillan Co., New York.

Milk and Its Relation to the Public Health, Bull. 56, Hyg. Lab., U. S. Public Health and Marine-Hospital Service, Washington, D. C.

Ward: Pure Milk and the Public Health, Taylor and Carpenter, Ithaca.

WATER SUPPLIES AND TYPHOID

To the Editor:—Three or four years ago THE JOURNAL published a comprehensive article on the water-supply of cities, showing the sources of water and the death rate from typhoid during the year. I have probably loaned the article and am not now able to locate it with the indexes at hand. Can you give me the date on which it appeared, and also any more recent articles along this line?

G. L. KING, Alliance, Ohio.

ANSWER.—The article referred to is probably one which appeared serially in THE JOURNAL, May 18 and 25 and June 1 and 8, 1907. Other articles on the subject which may be of interest are as follows:

Typhoid Epidemics at Ithaca; special article in THE JOURNAL, March 21 and 28 and April 4, 1903.

Typhoid Epidemic at Butler, Pa.; special article in THE JOURNAL, Dec. 12, 1903, p. 1476.

Fulton, J. S.: Typhoid Fever and Hindrances in Its Prophylaxis, THE JOURNAL, Jan. 9, 1904, p. 1.

Johnson, W. S.: Quality of Public Water-Supplies, THE JOURNAL, Aug. 31, 1907, p. 762.

Clark, H. W.: Filtration of Public Water-Supplies, THE JOURNAL, Aug. 31, 1907, p. 764.

Dutton, W. F.: Responsibilities of Municipalities in the Ohio Valley for Epidemics of Typhoid Fever, THE JOURNAL, Oct. 31, 1908, p. 1496.

Breitenbach, O. C.: Choleric Diarrhea of Cold Weather—"Winter Cholera," THE JOURNAL, Oct. 31, 1908, p. 1496.

Soper, G. A.: The Discharge of Sewage Into Tidal Waters, THE JOURNAL, April 17, 1909, p. 1221.

Evans, W. A.: Lake Michigan Water for Drinking Purposes, THE JOURNAL, Oct. 2, 1909, p. 1091.

Wood, H. B.: The Economic Value of Protecting Water-Supplies, THE JOURNAL, Oct. 2, 1909, p. 1093.

Lumsden, L. L.: Epidemiologic Studies of Typhoid Fever, THE JOURNAL, Oct. 16, 1909, p. 1257.

Typhoid Fever in Milwaukee and the Water-Supply; special article in THE JOURNAL, July 16, 1910, p. 211.

Fell, G. E.: The Currents at the Easterly End of Lake Erie and Head of Niagara River, and Their Influence on Sanitation of City of Buffalo, THE JOURNAL, Sept. 3, 1910, p. 828.

Dutton, W. F.: Present-Day Problems and Progress in Prevention of Typhoid Fever, THE JOURNAL, Sept. 3, 1910, p. 834.

Typhoid Fever in Detroit and the Water-Supply; special article in THE JOURNAL, Oct. 8, 1910, p. 1284.

Typhoid Fever in Des Moines, Iowa, and the Water-Supply; special article in THE JOURNAL, Jan. 7, 1911, p. 41.

WHY THE FETUS DOES NOT DROWN IN THE LIQUOR AMNII

To the Editor:—Why is it that the fetus does not drown in the bag of waters?

H. K. M.

ANSWER.—Until the fetus is expelled into the world the lungs are in a condition of complete atelectasis. No respiratory movements have occurred; hence there has been no opportunity for the liquor amni to enter the air cells. The fetus obtains its oxygen through the maternal blood and cannot drown. After expulsion there does not remain a sufficient amount of liquid in the air passages to interfere with breathing.

INSTITUTES FOR MEDICAL RESEARCH

To the Editor:—Please give the names and addresses of the various endowed institutes for medical research in this country.

W. B. LaFORCE, M.D., Ottumwa, Iowa.

ANSWER.—Two prominent endowed institutions for medical research are:

Rockefeller Institute for Medical Research, New York.

Memorial Institute for Infectious Diseases, Chicago.

In addition there are various laboratories working under gifts or endowments that carry on research in various special lines, or in general lines. Among them are:

Crocker Cancer Research Fund, New York.

Russell Sage Foundation, New York. Special funds are sometimes granted by this foundation for carrying on work in certain lines.

St. Louis Skin and Cancer Hospital, St. Louis. This institution is doing special research work under Prof. Leo Loeb in cancer, and has a specially equipped laboratory for this purpose.

Cushing Laboratory, Cleveland, Ohio.

Ayer Clinical Laboratory, Philadelphia.

William Pepper Medical Laboratory (U. of P.), Philadelphia.

Phipps Institute for the Study of Tuberculosis, Philadelphia.

Bender Laboratory for Cancer Research, Buffalo, N. Y.

Wistar Institute of Anatomy, Philadelphia.

Harvard, Columbia, Cornell and Johns Hopkins each have research laboratories working under special or general endowment.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Feb. 4, 1911.

Allen, William H., lieut., ordered to Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment.

Skelton, Robert, M.R.C., ordered to active duty and will proceed to Fort Adams, R. I., for station and duty.

Little, William L., captain, granted two months' leave of absence.

Leslie, Samuel H., D.S., granted twenty-one days' leave of absence.

Leslie, Samuel H., D.S., returned to Fort Leavenworth, Kan., from temporary duty at Fort Riley, Kan.

Davis, Oscar F., M.R.C., died at Army and Navy General Hospital, Hot Springs, Ark.

Eber, Albert H., M.R.C., assigned to permanent duty at Fort Dade, Fla.

Tuttle, George B., M.R.C., granted leave of absence for one month and twenty-one days.

Hayne, James A., M.R.C., granted leave of absence for two months.

Bartlett, G. J., captain, leave of absence extended twelve days.

Ebert, Rudolph G., colonel, promoted to, with rank from Dec. 27, 1910.

Arthur, William H., colonel, promoted to, with rank from Jan. 1, 1911.

Willecox, Charles, lieut.-colonel, promoted to, with rank from Dec. 27, 1910.

Raymond, Thomas U.; Snyder, Henry D.; Smith, Allen M., and Clarke, Joseph T., lieut.-colonels, promoted to, with rank from Jan. 1, 1911.

De Lancy, Matthew A., major, promoted to, with rank from Dec. 27, 1910.

Halloran, Paul S.; Fidd, Peter C.; Brechemin, Louis, Jr.; Bloombergh, Horace D.; Nelson, Kent, and Shaw, Herbert G., promoted with rank from Jan. 1, 1911.

McAlister, John A., D.S., reported for duty at Fort Leavenworth, Kan.

Each of the following named officers of the Medical Reserve Corps is relieved from duty at the Army Medical School, this city, and will proceed to his home, and on arrival there will report by telegraph to the adjutant general of the Army: Blair, Faris M.; Dolley, Gilman C.; Lynch, Edward C.; McLaughlin, William F.; Pulver, Arthur L.; Scherer, Carl A.; Underwood Gordon B.; Williams, Harry B.; Wilson, James H. Each of the officers named will stand relieved from further active duty in the Medical Reserve Corps, to take effect on his arrival at his home.

Fauntleroy, P. C., major, February 1, orders detailing him for a course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kan., is revoked.

Van Poole, G. M., major, detailed to represent the Medical Department of the Army at the fourth annual meeting of the Lake Michigan Sanitary Association, Chicago, Feb. 18, 1911.

Stark, Alexander N., major, granted leave of absence for one month and twenty days.

Dean, Elmer A., major, detailed to take the course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kan.

Thearle, William H., lieut., ordered to proceed to Jefferson Barracks, Mo., for temporary duty, until the arrival at that post of Captain Guy V. Rukke, Medical Corps.

Thomason, Henry D., major, leave of absence extended ten days.

Medical Corps, U. S. Navy

Changes for the week ended Feb. 4, 1911.

Lando, M. E., P. A. surgeon, resignation accepted to take effect Jan. 31, 1911.

Garrison, H. A., P. A. surgeon, commissioned passed assistant surgeon from June 27, 1910

Holeman, C. J., P. A. surgeon, commissioned passed assistant surgeon from Sept. 21, 1910.

George, C. M., and Sheldon, L., Jr., P. A. surgeons, commissioned assistant surgeons from Dec. 24, 1910.

Elliott, M. S., surgeon, detached from command of the naval hospital, Washington, D. C., and ordered to the Naval Medical School, Washington, D. C., for course of instruction.

McLean, A. D., P. A. surgeon, ordered to duty in attendance on officers and their families on duty at Washington, D. C.

Strite, C. E., P. A. surgeon, ordered to the *Vermont* when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

Phelps, J. R., asst. surgeon, detached from the *Vermont* and ordered to the *Solace*.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Feb. 1, 1911.

Holt, John M., P. A. surgeon, reassigned to duty at Columbia River Quarantine Station, effective Sept. 14, 1910.

Smith, F. C., P. A. surgeon, reassigned to duty at Fort Stanton, N. Mex., effective Nov. 23, 1910, Jan. 27, 1911.

Delgado, J. M., A. A. surgeon, granted ten days' extension of leave of absence from Jan. 13, 1911, on account of sickness.

Townsend, F., A. A. surgeon, granted fourteen days' leave of absence from Jan. 28, 1911.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

SMALLEST MEDICAL FEES PAID BY LARGEST CORPORATIONS**By an Insurance Examiner**

Five years ago the report of the New York legislative committee showing the methods of life-insurance companies produced a distinct shock to the public conscience. The next shock was to the medical conscience when the attempt was made to reduce the expense of insurance to the "oppressed" policy-holder and increase dividends to the "bloated bondholders" by reducing the fees of the medical examiner from \$5 downward; a great deal was then said and written on the subject of medical examiners' fees, until the companies nearly all relented and, in most cases, restored the examination fees to the former low standard of \$5.

There is, however, a phase of life-insurance examination with absurdly small fees, if they can be called fees at all, which has gone on without remonstrance from any source, so far as I know. This is all the more amazing because of the widespread cry of increased cost of living and the almost general insistence on increased wages in nearly all lines of service. Club contract, sick benefit and fraternal insurance examination fees have been rightly condemned by medical societies; but so-called industrial insurance, the worst economic invasion ever projected into the body politic of this country, secures examinations called "inspections" by doctors, for the munificent honorarium of 25 cents, "two dimes and a half, gentlemen, or a quarter of a dollar" per capita. These examinations require a visit to the home; inspection of hygienic, local and domestic environment; inspection of subject and antecedents, if there be any; witnessing the applicant's signature and certifying to his or her age; returning to office, copying and mailing the report to the home office—the company magnanimously furnishing the stamps and charging in the doctor's books—25 cents for the service. This by a medical graduate, a registered and licensed man, presumably in full possession of his faculties! Members of the hod-carriers' union would spurn such remuneration.

There is another form of examination, rarely demanded, for which 50 cents is paid; this is called an "examination" and also demands expert educated skill of a high degree. The booklet of instructions for either "inspection" or "examination" embraces thirty pages, and urges two-score specific topics on the examiner, requiring a finely educated visual and

tactile sense, as well as an innate perspicacity to complete properly; urinalysis is not required, but that is about the only lapse from a standard blank, and the examiner gets 50 cents!

Shades of Esculapius and John Hunter! And the cost of living soaring! A young man spends eight of his best years and as many thousand dollars to get a medical education, pass a state examination and pay for it; secure a county license and pay for this, often a municipal fee is demanded that he has to pay for; he has to equip himself with all the instruments of precision now required, at great cost, maintain an office and some means of transportation; be well housed and clothed—and he gets out of the insurance companies the sum of 25—rarely 50—cents, for expert work!

The subjects are not brought to the examiner; he must seek them at their homes at hours convenient to them, regardless of the examiner's other professional or social appointments. He must make calls in the remotest regions, in suburbs and factory district, since this kind of insurance appeals only to the ignorant classes, the submerged tenth, whose earnings are dissipated by the importunities of the conscienceless insurance solicitor and the instalment collection fiend. It is estimated that so-called industrial life-insurance collects the colossal aggregate of \$150,000,000 annually, a sum double that taken from all the gold mines of the United States, Alaska and the Philippines in the year 1907.

It is only this so-called "inspection" and "examination" that places the transaction outside the class of "pools." The guileless doctor lends his time and skill to this work and helps to accumulate colossal fortunes for the promoters. Strangest of all it is that the great beam of justice has not struck this kind of machination, and that public conscience has allowed the exploitation of the unguarded and helpless poor to go on unhampered. Worse still is the prostitution of our profession to such ignoble ends and pauper pay; 25 cents for a medical "inspection" and 50 cents for an educated expert's medical "examination," time and travel expense all paid by the doctor! What has become of the spirit of our medical societies that remonstrance has not been made ere this? There are very small things that need attention as well as the larger ones of state boards of health and medical national educational commissions.

The objection to industrial insurance, as conducted in the United States, is that it has been developed and managed by private individuals for private profit rather than for the laboring man and his dependents. One result is the physician who makes the necessary examinations is "sweated" for the benefit of the middleman or promoter, who to increase his own profits reduces the cost of operation to the minimum. Industrial insurance is, in many cases, the only way in which the laboring man can provide, during the period of activity, against disabling accidents and sickness. The premiums which can be paid in this form of insurance are necessarily low and must be collected on the instalment plan. In the absence of some such provision against disability, the only recourse left to the laborer or his family is charity, either public or private. The importance of industrial insurance has been generally recognized in Europe, especially in Germany, where it has been made compulsory by the state, as a precaution against poverty-stricken decrepitude or old age on the part of the laborer and overburdened charity relief on the part of the state. Industrial insurance, provided and safeguarded by the state, is a guarantee to the laborer and his family against want, and to the community against a crushing burden of pauperism and dependency. As conducted in this country, by private corporations, it is an exploitation of the workingman on the one hand and of the physician on the other, for the benefit of the middleman, the promoter. The ridiculously low "fees" paid by these companies should be spurned by any self-respecting physician and condemned by medical organizations everywhere. Properly organized and conducted industrial insurance should be encouraged, but only on condition that the fees paid for professional services are commensurate with the value of the services rendered. Industrial insurance should be for the benefit of the laborer and the relief of society. There is no reason why it should be built up at the expense of the medical profession.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Second Weekly Meeting

INFECTIONS OCCURRING IN SURGICAL DISEASES AND CONDITIONS
TOXEMIA, SEPTICEMIA AND PYEMIA:* Definition of each, discussing their relations to each other.

ETIOLOGY

TOXEMIA: 1. From acute infectious diseases. 2. Those demanding surgical interference; sapremia. Pathogenic and toxicogenic bacteria. Bacterial poisons, ptomaines and toxins. Microorganisms usually found in surgical lesions, producing toxemia.

SEPTICEMIA AND PYEMIA: Septicemia from (1) local infection, pneumonia, typhoid, puerperal fever, fracture, traumatism, etc.; (2) cryptogenetic septicemia. Pyemia, dependent on antecedent septicemia.

PATHOLOGY

TOXEMIA AND SEPTICEMIA: Similarity of pathologic changes occurring in toxemia and septicemia. Histologic changes in tissues, effect of toxins. Microscopic changes in viscera. Gross changes in liver, spleen, kidneys, heart and blood-vessels, mucous membranes.

PYEMIA: Primary changes. Methods of entrance of bacteria into blood-stream. Factors governing site of secondary localization. Usual location of abscesses. Secondary changes.

* Pearce: Osler's Modern Medicine, ii, 647.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

ILLINOIS: Coliseum Annex, Chicago, March 2-4. Sec., Dr. James A. Egan, Springfield.

IOWA: State House, Des Moines, February 14-16. Sec., Dr. Guilford H. Sumner.

KANSAS: Topeka, February 14. Sec., Dr. H. A. Dykes, Lebanon. MAINE: Portland, March 14-15. Sec., Dr. F. W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, March 14-16. Sec., Dr. Edwin B. Harvey, Room 159, State House.

WYOMING: Laramie, March 7-9. Sec., Dr. J. B. Tyrrell.

The Complete Physician

An address on the subject "The Complete Physician" was given by Dr. J. George Adami, professor of pathology at McGill University, at the opening of the School of Medicine of the University of Toronto.¹ He shows that the student cannot be expected to learn all there is to know during his brief four-year or five-year medical course. In fact, the physician's entire life is devoted to learning new facts and new methods. It is the student's duty to find out *how* to proceed; he must learn the common ailments; he must know how to use modern methods of diagnosis and must understand the rational treatment of diseases, whether he is to apply that treatment himself or refer the patient to others.

To obtain this knowledge requires a training in hospitals and dispensaries, in contact with actual living patients. But he needs more than his unaided senses to gain the most from his contact with patients. He needs to understand instruments of precision, which requires a knowledge of physics; he must know the composition of body fluids and the action of drugs, which requires a knowledge of chemistry; he must understand the principles governing living matter, which requires an acquaintance with biology. A knowledge of anatomy is particularly needed. A mental picture of the viscera often conveys reasons for certain disturbances; and of course the

1. Saskatchewan Med. Jour., October, 1910.

knowledge of the parts of the body is indispensable for the surgeon. Infectious diseases cannot be understood without a knowledge of bacteriology. Of great importance also is the autopsy, by which the relation of outward signs to the actual pathologic condition is ascertained.

Years of preparation, therefore, are needed before the student comes to the actual study of patients. This preparation requires one or two years of collegiate work and two or three years of medical study in laboratories. Then come the two years in advanced study in dispensaries and hospitals, and, finally, a year or more of intern work.

Dr. Adami lays particular stress on the development by the student of a personal sympathy for the patient. Important as is all the other training and skill in the diagnosis and treatment of disease, he counts this all for naught without the sympathetic study of humanity and the capacity to enter into their lives:

"After all, it is the old, old lesson that I have to preach to you. Though you know all the 'ologies and practice all the modern methods of diagnosis and treatment, though you know Latin, German, French, Italian, and speak with tongues of men and of angels and have not charity—do not let your hearts go out to your fellows—you are become as sounding brass or as a tinkling cymbal."

He declares that the main strength of British medical education is that it has realized the need of this sympathetic relationship and the weakness of the German medicine that it has too largely neglected it. He believes that the chief benefit from the addition of two collegiate years to the preliminary training is that, by the larger contact with his fellows, the student will develop this study of humanity. This experience will be largely aided by the study of the actual palpitating patient at the bedside. Lastly, it will be more completely developed in the fifth year spent in a hospital.

California August Report

Dr. Charles L. Tisdale, secretary of the California State Board of Medical Examiners, reports the written examination held at San Francisco, August 2-5, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 151, of whom 121 passed, including 22 osteopaths, and 30 failed, including 9 osteopaths. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Oakland College of Medicine and Surgery (1910)	83.4, 86.4, 86.5.		
University of Southern California.....	(1909)		82.1
College of Physicians and Surgeons, San Francisco (1909)	76.9, 77.6; (1910) 76.8, 78.9, 84.7.		
Cooper Medical College (1909)	76.9; (1910) 75.9, 77, 79.5, 80.1, 80.3, 81.5, 82.5, 85, 85.4, 85.4, 87.5.		
California Medical College, Eclectic.....	(1905)		79.3
University of California (1908)	77.9; (1910) 79.8, 83.5, 85.7, 87.2, 87.3, 89.6.		
College of Physicians and Surgeons, Los Angeles (1909)	78.2; (1910) 77.9, 80.4, 82.3, 82.7, 86.4, 86.6, 87.4, 90.2.		
Hahnemann Medical College of the Pacific.....	(1910)		85.8
College of Physicians and Surgeons, Chicago (1901)	83.2; (1903) 79.8; (1906) 78.9; (1908) 88.2.		
American Medical Missionary College (1900)	88.6; (1903) 82.3, 85.5; (1906) 89.8, 90.4.		
Northwestern University Medical School (1908)	83.6, 84.8; (1909) 83.1; (1910) 86.8.		
Rush Medical College.....	(1895) 80.5; (1909) 82.2, 92.4		
Louisville Medical College.....	(1897) 78.8; (1905)		81.1
Hospital College of Medicine, Louisville.....	(1902)		77.1
University of Iowa, College of Medicine.....	(1906)		78
Tulane University of Louisiana.....	(1908)		75.5
Medical School of Maine.....	(1889)		87
University of Maryland.....	(1893) 83.4; (1895)		84.6
Johns Hopkins University Medical School (1908)	83.9, 89.9; (1910) 87.1, 84.6.		
Harvard Medical School.....	(1907)		85.7
University of Michigan, College of Med. and Surg..	(1909)		80.9
Detroit College of Medicine.....	(1896)		88.1
University of Minnesota, Homeopathic Department.	(1908)		79.9
University of Minnesota, College of Medicine and Surgery	(1905)		77.2; (1909) 80.6.
St. Louis University.....	(1906) 85.2; (1910)		80.3
Kansas City Medical College.....	(1891)		77
Creighton Medical College.....	(1906)		80.5
Columbia University, College of Physicians and Surgeons	(1905)		81.7; (1909) 82.8.
New York Homeopathic Med. College and Hospital.	(1906)		80
University and Bellevue Hospital Medical College..	(1910)		85
Bellevue Hospital Medical College.....	(1893)		84.3
Long Island College Hospital.....	(1892)		88.8
Ohio Medical University.....	(1903)		77.4

University of Oregon.....	(1908)	75.8
Hahnemann Medical Coll. and Hosp., Philadelphia.	(1909)	77.8
Jefferson Medical College.....	(1910)	88.3
University of Pennsylvania.....	(1904)	82.8
Medical College of South Carolina... (1903)	84.4; (1910)	82.9
Vanderbilt University.....	(1906) 84.1; (1910)	84.6
McGill University, Quebec.....	(1910)	75
Western University, London Ontario.....	(1906)	82.7
University of Edinburgh, Scotland.....	(1909)	92.9
University of Finland, Helsingfors.....	(1910)	83.1
University of Turin, Italy.....	(1902)	86.7
Durham College of Medicine, England.....	(1910)	78.5

FAILED

Hahnemann Medical College of the Pacific.....	(1909)	71.6
College of Physicians and Surgeons, San Francisco (1903)	71.9; (1907) 51.6, 72.7; (1910) 69.5.	
College of Physicians and Surgeons, Los Angeles... (1906)		69.2
Cooper Medical College.....	(1910) 64,	72.1
California Medical College, Eclectic.....	(1910)	72.4
Chicago College of Medicine and Surgery.....	(1910)	70.5
Indiana Medical College.....	(1903)	72.9
University of Louisville.....	(1892)	70.6
Kentucky School of Medicine.....	(1906)	61.7
Hamline University.....	(1907)	72.4
American Medical College, St. Louis.....	(1898)	43.9
University Medical College, Kansas City.....	(1905)	69.4
Syracuse University.....	(1903)	72.1
Cleveland Homeopathic Medical College (1892)	55; (1903)	72
Jefferson Medical College.....	(1884)	76.5
University of Toronto, Ontario.....	(1903)	73.2

* Fell below 60 per cent. in one or more branches.

The following questions were asked:

ANATOMY

[Answer ten questions only]

1. Name the visceral contents of the middle epigastric region.
2. Describe the changes that take place in the vascular system at birth.
3. Draw diagram showing relationship of stomach, spleen, pancreas and kidneys to the back.
4. Name the uses and supports of the arch of the foot.
5. Give the boundaries of the axilla and name its contents.
6. What are the anatomic conditions that minimize the effects of violence on the skull?
7. Describe the course of the brachial artery. At what point may it be most easily compressed?
8. Give the relations of the prostate gland.
9. Make drawing of the shoulder sufficient to show the relation of the bony points.
10. Give the sensory and motor distribution of the median nerve.
11. Give the relations of the abdominal aorta.
12. Name the chief varieties of joints and give their subdivision with an example of each of the latter.

PATHOLOGY

[Answer eight of the written questions and identify four slides]

1. What blood changes are found in simple anemia? And describe the general or systemic effects if this condition is long continued.
2. Give the pathology of chorea.
3. Describe the macroscopic and microscopic characteristics which distinguish malignant tumors or growths from those of a benign or non-malignant type.
4. Describe fully the effects and changes which result from an excess of secretion of the thyroid gland, and the effects and changes resulting from a deficiency of the thyroid secretion.
5. Describe the pathologic changes which take place as a result of chronic lead poisoning.
6. What organism is responsible for tropical or amebic dysentery? What part of the intestinal tract is principally affected, and describe the changes resulting from the disease?
7. What are the principal causes of the ordinary summer diarrhea or dysentery of children, and describe the condition of the intestinal tract usually present?
8. What conditions most frequently give rise to cerebral thrombosis; what part of the brain is most likely to be affected, and what blood-vessels most likely to be involved, and why?
9. In imperfect closure or insufficiency of the mitral valve of the heart describe, in the order of their occurrence, the changes which take place in the heart and blood-vessels and the resulting pathologic condition in other parts of the body.
10. Describe the condition of the lung in cases of delayed resolution in croupous or lobular pneumonia, and what is the usual ultimate result if not relieved.
11. Identify two slides.
12. Identify two slides.

HISTOLOGY

[Answer ten questions only]

1. Make a diagram of a transverse section of the spinal cord showing white and gray matter, position of motor and sensory roots of spinal nerves, central canal and principal motor cells.
2. Describe the muscular coats of the esophagus.
3. Name the various forms of encapsulated sensory nerve-endings.
4. Describe minutely a medullated nerve fiber.
5. Describe the blood-supply of a hepatic lobule.
6. Describe a renal Malpighian corpuscle. Make drawing.
7. Name two cells typical of the human cerebellum. Give short description of each and make drawings.
8. Tell how you would distinguish a transverse section of the duodenum from a longitudinal section of the transverse colon. Make diagram.
9. Name the blastodermic layers from which the following tissues and organs are formed: (a) enamel of the teeth; (b) finger-nails; (c) urinary bladder; (d) pancreas; (e) lymph nodules of the intestines.
10. What is meant by the following terms: (a) Haversian canal; (b) osteoblasts; (c) osteoclasts; (d) lymphocytes; (e) eosinophils?
11. Examination of slides.
12. Examination of slides.

CHEMISTRY

[Answer ten questions only]

1. Define alkaloid. Name five alkaloids commonly used in medicine.
2. How much of the following ingredients will be found in the urine of an adult who passes 1,500 c.c. of normal urine daily: (a) urea, (b) chlorids, (c) phosphates?
3. What is a chemical symbol? Give the symbols of ten elements.
4. Give the composition of properties of and tests for sulphuretted hydrogen, and mention any chemical agencies by which its offensive odor may be

removed. 5. How is formaldehyd prepared? In what forms is it used as a disinfectant? 6. What is the composition of butter? Describe a good method of determining the volatile fatty acids in a sample. How does this assist you in deciding the question of adulterations? 7. What are the respective alcoholic strengths of beer, claret, sherry, gin, whisky? 8. Name the solids contained in normal blood. What proportions do the solids bear to the water in the blood? 9. Give the composition of starch, cane-sugar, grape-sugar and sugar of milk. Calculate the number of grains of carbon present in 1,000 grains of starch and cane-sugar, respectively. 10. What is ozone? Is there any real evidence of its presence in the atmospheric air? What other substances give similar actions? Has its presence or absence any sanitary importance? 11. How would you recognize each of the following gases, chemically, when mixed with air: Carbon monoxid, sulphur dioxid, sulphuretted hydrogen and hydrochloric acid? 12. How would you detect the presence of tartaric acid in lemon or lime juice?

PHYSIOLOGY

[Answer ten questions only]

1. Describe the phenomenon of muscular tone. 2. What is the chemical theory of fatigue? 3. What is the difference in the paralysis from injury to the spinal and the pyramidal neurons, respectively? 4. Name four sensory qualities of cutaneous nerves and tell how they are distributed in the skin. 5. What is the function of the Eustachian tube? 6. What normal conditions produce a variation in the number of red-blood corpuscles? 7. Mention four factors concerned in producing normal pressure and velocity of the blood. 8. What physical changes take place in respired air? 9. What conditions affect the action of ptyalin? 10. What is the general physiologic importance of bile? 11. What is the physiologic rôle of the adrenals? 12. Mention four ways by which the body loses its heat.

BACTERIOLOGY

[Answer ten questions only]

1. Explain how diphtheria antitoxin is made. 2. Give two methods of producing immunity (active). 3. What is a bacterial vaccine? How does it act? 4. Give positive tests distinguishing gonococci from other cocci. 5. Describe in detail a method of staining tubercle bacilli. 6. Name five pus-producing organisms. 7. Explain how pus is produced by germs. 8. Give two methods by which *Bacillus typhosus* may be distinguished from *Bacillus coli communis*. 9. Show by drawing appearance under the microscope of the following: *Spirocheta pallida*, *Bacillus diphtherie*, *Bacillus pestis*, *Bacillus tetani*, *Amoeba coli*. 10. Describe cause and usual method of entry of epidemic cerebrospinal meningitis. 11. What is meant by Widal's reaction? Describe two methods of doing it. 12. Describe the different methods by which bacteria propagate. Give three.

OBSTETRICS

[Answer ten questions only]

1. Between what points are the four measurements taken in external pelvimetry? 2. How is the pelvic inlet bounded? 3. What are the anomalies calling for cephalic version? 4. In mammary abscesses what is the usual source of infection and how can it be prevented? 5. Give the etiology and diagnosis of phlegmasia alba dolens in the puerperal state. 6. In breach presentations, occiput anterior, in what position would you place the body of the child in the application of forceps to the after-coming head? 7. Describe hyperemesis and its dangers. 8. Give the symptoms and diagnosis of puerperal septicemia? 9. What are the causes of secondary post-partum hemorrhage? 10. Describe the "Braxton-Hicks" method of manipulation in placenta previa. 11. What are the causes and dangers of precipitate labor? 12. Describe polyhydramnos and its dangers.

GYNECOLOGY

[Answer ten questions only]

1. What is the menopause? Its physiologic establishment? What are the especial dangers of this period? 2. What are the causes of hemorrhage of the non-pregnant uterus, other than menstruation? 3. Diagnosis of uterine fibroids. What pathological change often takes place? Prognosis. 4. Acute pelvic peritonitis, causes and symptoms. 5. What is the differential diagnosis between ascites and ovarian cyst? 6. What is amenorrhea, its causes and dangers? 7. What are the symptoms and management of imperforate hymen, with prolonged retention of secretion? 8. What is chronic endometritis, etiology and symptoms? 9. Early diagnosis of cancer of the uterus. What are operable cases? At what period in a woman's life is it most liable to occur? 10. Urethral caruncle, diagnosis and symptoms. 11. Hematoma of the vulva, symptoms and diagnosis. 12. Specific vaginitis, symptoms, diagnosis, and complications.

GENERAL DIAGNOSIS

1. Give the causes of enlargement of the liver and describe atrophic cirrhosis of the liver in detail. 2. Differentiate tetanus from hydrophobia. 3. Name the different varieties of casts found in the urine and what is the significance of each. 4. Give the symptoms of multiple sclerosis. 5. Give the symptoms and signs on which you would diagnose a typhoid intestinal perforation. 6. Differentiate variola from varicella. 7. Describe an attack of acute appendicitis. 8. Describe an attack of acute pericarditis. 9. Give the causes and physical signs of ascites. 10. Differentiate iritis from glaucoma. 11. Give the relations of the abdominal aorta; diagnose a fracture through the neck of the femur. 12. Describe the symptomatic development of a severe hemorrhage which presses on the upper one-half of the fissure of Rolando following a blow on the head.

HYGIENE

[Answer ten questions only]

1. What deleterious gases accumulate in improperly ventilated rooms? 2. What diseases may be propagated by drinking water? How may the impurities in water be detected? 3. Name four methods used in communities for the disposal of sewage and describe one method. 4. Outline a rational method by which the condition of milk supplied to a community might be materially improved.

5. Name four diseases which may be transmitted by milk. 6. Name four diseases that may be transmitted by the eating of diseased meat or fish. 7. What is the germ theory of disease? What laws were made to prove this theory? 8. What is an endemic disease? An epidemic disease? A miasmatic disease? A sporadic disease? 9. What are deodorants? Antiseptics? Germicides? 10. With what is ground coffee said to be frequently adulterated, and how may the adulterants be detected? 11. With what is vinegar sometimes adulterated, and how would you test for the adulterant? 12. How may the presence of lard in olive oil be detected?

Pennsylvania December Reports

The Medical Council of Pennsylvania reports the written examinations held at Philadelphia and Harrisburg, Dec. 14-17, 1910. The number of subjects examined in was 7; percentage required to pass, 75.

At the examination held by the State Medical Society of Pennsylvania, at Philadelphia, the total number of candidates examined was 95, of whom 79 passed and 16 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
University of Colorado.....	(1909)		1
Howard University, Washington, D. C....	(1907) (1909)		2
Georgetown University	(1910)		3
Atlanta School of Medicine.....	(1910)		1
Indiana University	(1910)		1
Kentucky University	(1906)		1
University of Louisville.....	(1910)		1
Johns Hopkins University.....	(1909)		1
Baltimore Medical College.....	(1910)		4
University of Maryland.....	(1909) (6, 1910)		7
College of Physicians and Surgeons, Baltimore..	(1910)		4
Detroit College of Medicine.....	(1910)		1
Syracuse University	(1910)		1
Albany Medical College.....	(1905)		1
Columbia University, College of Physicians and Surgeons.....	(1906) (1907) (1909)		3
Temple University	(1910)		4
Jefferson Medical College	(1902) (1906)		
(2, 1909).....	(9, 1910)		13
University of Pittsburg.....	(1909) (3, 1910)		4
University of Pennsylvania (1895) (1907)			
(2, 1908) ; (1909).....	(5, 1910)		10
Medico-Chirurgical Coll., Philadelphia (1909) (6, 1910)			7
Woman's Medical College of Pennsylvania (2, 1909).....	(2, 1910)		4
University of Vermont.....	(1910)		1
McGill University, Montreal.....	(1907)		1
University of Toronto, Ontario.....	(1902) (1909)		2
Queen's University, Kingston, Ontario.....	(1910)		1

College	FAILED	Year Grad.	Per Cent.
Howard University, Washington, D. C.....	(1907)		70.2
University of Louisville.....	(1910)		72.7
Maryland Medical College (1910) 23.7, 63.3, 64.5, 70.4.			
Baltimore Medical College.....	(1910)		65.5
University of Maryland.....	(1910)		72.4
University Medical College, Kansas City.....	(1903)		46.8
Leonard Medical School.....	(1909)		73.4
Medico-Chirurgical College, Philadelphia (1909) 73.9; (1910) 61, 72.6.			
University of Pittsburg.....	(1910)		72.5
University of Pennsylvania.....	(1910)*		....
Meharry Medical College.....	(1910)		68.5

* Expelled from examination.

At the examination held by the Homeopathic Medical Society at Philadelphia, the total number of candidates examined was 5, of whom 4 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Cleveland Homeopathic Medical College.....	(1910)		1
Hahnemann Medical College and Hospital, Philadelphia	(1904) (2, 1910)		3

College	FAILED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital, Chicago. (1909)			61.4

At the examination held by the Eclectic Medical Society at Harrisburg, the total number of candidates examined was 12, of whom 11 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Maryland Medical College.....	(1907) (3, 1910)		4
Atlantic Medical College.....	(1908)		1
Baltimore University	(1905)		1
Eclectic Medical University, Kansas City.....	(1910)		1
St. Louis College of Physicians and Surgeons....	(1906)		1
Medico-Chirurgical College, Philadelphia.....	(1910)		2
Temple University	(1910)		1

College	FAILED	Year Grad.	Per Cent.
Baltimore University	(1903)		72.1

Book Notices

A MANUAL OF PHARMACY FOR PHYSICIANS. By M. F. DeLorme, M.D., Lecturer on Pharmacy and Pharmacology, Long Island College Hospital, New York. Second Edition. Cloth. Price, \$1.25 net. Pp. 199, with 19 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

The author in this book has made the laudable effort "to provide a small concise text-book, presenting only those facts of the subject having interest for the medical practitioner." He has paid special attention to prescription Latin. One of the reasons assigned by most authors for the use of Latin in prescriptions is that "Latin is a dead language and not subject to change." Our author, however, evidently believes that it can be improved by changing its time-honored rules. With the intention of making it so simple that any student by learning a few improved rules can write correct Latin, he tells his readers that all Latin nouns ending in "a" form their genitive in "æ," that adjectives end in "us" and form a genitive in "i" and that, as the genitive is the only case in which the physician is interested, in the text of Part II all nouns will be put in the genitive case. It is interesting to see how these simple rules work. The author is iconoclastic enough to apply them to the utter demolition of the ancient grammar. For instance, we learn that the genitive of "Cataplasma" is "cataplasmae" (old form "cataplasmatiss"), that the prescription term for "distilled water" is "aquæ destillati," that for "monobromated camphor" we should write "camphoræ monobromati." Other examples are "ereta camphorati," "tinctura valerianæ ammoniati," etc. While the author admits that, theoretically, other cases may be used in writing a prescription, "as in prescribing an official pill, when the accusative case is employed," he considers that the "almost universal practice of abbreviating the noun 'pilula' (pil.) makes this exception of small practical moment and justifies its dismissal." Accordingly, the accusative disappears and we read "Divide in pilulae no. x," "Div. in capsulae no. iv." The ablative is no longer of use. So the author allows "cum" to govern the genitive: "Pulveris Potassii Bromidi Effervescens cum Caffeinae N. F." In this case, zeal in carrying out his scheme caused the author to forget the genitive of "effervescens," which is not provided for by the simplified rules. But, strange to say, he writes "R Carbo animalis," although he has informed his readers a few pages before that "carbo" has a special genitive "carbonis."

The effort to put all nouns in the genitive imposes too great a burden on one devoted to simplification, and hence the student finds a jumble of nominatives and genitives, plurals and singulars, with an occasional instance in which, following the custom of older writers, the author has allowed the accusative or ablative to appear in strict accordance with grammatical rules. The lesson from this seems to be that we should either learn to write Latin correctly or dodge the difficulty by cutting off the endings in all cases. When an author and teacher cannot produce a set of fifteen typical prescriptions without 40 per cent. of them containing more or less serious errors, what can be expected of a student ignorant of Latin who tries to follow his directions?

The influence of such a book is vicious.

BIER'S TEXT-BOOK OF HYPEREMIA AS APPLIED IN MEDICINE AND SURGERY. By Prof. Dr. August Bier, of Berlin. Only authorized translation from the sixth German revised edition by Dr. Gustavus M. Blech, Professor of Clinical Surgery, Illinois Medical College. Cloth. Price, \$4. Pp. 439, with 39 illustrations. New York: Rebman Company, 1910.

This is a fascinating work of some 400 pages. Once having begun, one is tempted to read every word and then reread many sections, so earnestly and convincingly has the writer presented his topic to his readers. The text does not lend itself well to abstracting; it must be taken as a whole to be properly appreciated.

While the list of conditions treated and the benefits obtained at first appear rather appalling and arouse the most natural medical emotion of prejudice against something different, yet a careful survey of the author's discussion and skilful employment constantly tends to allay the natural bias and to bring out the reasonableness of the procedure in the conditions to

which it is adapted. The chapters on theory are interesting and instructive, reminding one, in their character and clearness, of Adami's charming little volume on "Inflammation." Bier's experience, like that of many others, emphasizes the fact that the more fundamental a truth and the broader its application, the greater is the difficulty in getting its general acceptance.

It is difficult, however, for us to accept many of the practical applications in conditions that we are wont to treat otherwise and we still remain in the critical attitude of wanting "to be shown." For instance, in the treatment of tuberculous joints Bier says, "I now declare it to be the best conservative agent at our command, which, with the least risk, simply and cheaply achieves results, especially as far as the function of the diseased joints is concerned, to which none of the other methods of treatment can even approximately approach. It must be added that at the same time it is the most agreeable of them all because it removes the pain from the patient without causing him new ones, in addition to leaving him the most perfect use of his limb." In concluding his work, he says, "I believe that the practical application represents the most general method of cure which exists, for I know of no other remedy which can be successfully employed in so great a variety of diseases."

The book is of convenient size, printed with clear type on good paper, and the translation well worthy of the text.

CLINICAL COMMENTARIES DEDUCED FROM THE MORPHOLOGY OF THE HUMAN BODY. By Prof. Achille De-Giovanni, Director of the General Medical Clinic, University of Padua. Translated from the second Italian Edition by John Joseph Eyre, M.R.C.P., L.R.C.S.I., D.P.H., Cambridge. Cloth. Price, \$4.50. Pp. 436, with illustrations. New York: Rebman Company, 1910.

The title does not convey a clear idea of the subject-matter of this work, for it deals not with the form and structure of the human body as such, but rather with the relations which exist between the special morphology of the individual and his particular morbidities. The author assumes that modern morphology dictates the maxim that "function creates the organ" and as a natural consequence of this that "function reveals the anatomic conditions of the organ." He then formulates two principles expressed as follows:

1. "The cause of the special morbidity of organisms resides in their special morphology."

2. "The same principle which explains the formation of the organs, of the organisms and their function, explains the anomalies of form and of function that the organisms present during the periods of life."

The first part of the book is devoted to an attempt to justify the above principles. The second is more concrete and practical; in it the author elaborates his system of measurements of the body, based on which he subdivides individuals into three principal groups or classes, which he calls morphologic combinations. Each morphologic combination is supposed to exhibit certain morbidities, but there are almost innumerable varieties of each of the three principal combinations.

The author is given too much to theorizing, and, as is usual in such cases, his ideas are frequently clothed in such a superfluity of words as at times to defy analysis and thus to be meaningless. Possibly the translator may be responsible occasionally for a small part of this obscurity by a too literal translation. Yet, notwithstanding these numerous defects, a careful perusal of the book cannot fail to convince the reader that the author is possessed of an idea which contains more than a germ of truth and which is capable of much development by further observation and study.

CLINICAL PATHOLOGY IN PRACTICE. With a Short Account of Vaccine-Therapy. By Thomas J. Horder, M.D., Medical Registrar and Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital. Cloth. Price, \$3. Pp. 216, with 6 illustrations. New York: Oxford University Press, 1910.

This work takes up the various diagnostic measures of clinical pathology. An account is given of the proper technique for securing materials; but the laboratory procedures used in the examination are intentionally omitted. The author discusses the conditions in which such measures are advisable, and the interpretation of the results obtained with them;

so that, unlike most works on clinical pathology, this is a guide, not for the laboratory worker, but for the clinician who may wish to enlist the aid of laboratory investigation. Inasmuch as many of these measures are of recent adoption, and as instruction along these lines is frequently deficient even in our better medical colleges, such a work can readily prove of value both to the older general practitioner and to his younger colleague. An introductory chapter warns against a too enthusiastic reception of the newer laboratory methods, which may lead to a neglect of physical diagnosis; and the same well-founded conservatism prevails throughout the work. In some instances there occur brief theoretical discussions of certain measures. These, particularly in the case of the Wassermann reaction, are admirably lucid. In the chapters on vaccine therapy the writer limits himself to his own clinical experience. Although brief, these chapters sum up the methods and the present status of this line of treatment very adequately.

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Volume VII. Cloth. Price, \$7. Pp. 961, with 396 illustrations. New York: William Wood & Co., 1910.

The seventh volume of this work is devoted to a continuation of regional surgery. In it are discussed the surgical diseases of the pelvic and gluteal region, of the extremities and of the abdominal wall; the diagnosis of abdominal tumors; abdominal section; surgery of the heart and blood-vessels, the stomach, esophagus and diaphragm; acute infectious and tuberculous peritonitis; hernia; diseases of the vermiform appendix, intestines, omentum and mesentery and of the anus and rectum. The so-called big subjects are not always the most important ones, but the big subjects in this volume happen to be very important because of their great frequency. Appendicitis and peritonitis in some of the forms are the daily companions of every general practitioner, as well as of every surgeon. The subject of the treatment of these conditions is handled in a very sensible and judicious manner, by one of much experience and rare judgment, whose untimely death was deeply lamented by all. Concerning the prognosis in tuberculous peritonitis, the author—very justly, we think—presents a more hopeful view than is found expressed in some recent articles. The volume as a whole is a credit to this excellent system.

ACUTE INTESTINAL TOXEMIA IN INFANTS. An Experimental Investigation of the Etiology and Pathology of Epidemic or Summer Diarrhea. By Ralph Vincent, M.D., Member of the Royal College of Physicians, London. An Address Delivered Before the Glasgow Obstetrical and Gynecologic Society on Nov. 23, 1910. Cloth. Price, 3 shillings 6 pence net. Pp. 83, with 17 illustrations. London: Baillière, Tindall & Cox, 8 Henrietta St., Covent Garden, 1911.

The author fed a great many kittens on various modifications of boiled milk. The result was invariably an early fatal toxemia resembling the toxemia in infants. From this he deduces the conclusion that the condition, both in kittens and infants, is due to boiled milk. He reasons that in the process of boiling the lactic-acid-producing bacteria are killed, while the spores of the common saprophytes are unharmed. He maintains, further, that the presence of lactic acid prevents the growth of the saprophytes; that its absence permits them to grow and elaborate, from the proteids of the food, their toxins, in which he sees the active cause of these toxemias. He logically concludes: "The dirtier the milk, the more important is it that it should not be cooked." The evidence presented by the author is hardly convincing.

HEREDITARY CHARACTERS AND THEIR MODES OF TRANSMISSION. By Charles E. Walker, M.Sc., Director of Research in the Glasgow Cancer Hospital. Cloth. Price, \$2.40. Pp. 239, with 21 illustrations. New York: Longmans, Green & Co., 1910.

Recent discoveries and experimental work on cells are applied to problems in heredity with a view to harmonizing the results of the Mendelian experiments with the observations of the biometricians. This is done by showing that some parts of the cells involved in fertilization, that is, in the production of the new individual, are distributed in an alternative manner, while other parts simply divide in bulk. As a fresh hypothesis regarding the problem of sex, Walker suggests that

there are two classes of characters, the individual and the racial, which behave in different manner in regard to inheritance. To each he attributes a distinct mode of transmission. He regards sex as a character which has been kept in the category of individual characters and has been prevented from becoming a racial character by the action of natural selection, in spite of the fact that it is far more intense than a great many of the racial characters. Secondary sexual characters are regarded as racial characters or dependent for their appearance on the presence of one or the other kind of sexual cells—in fact, on the primary sexual character. The book is well written and presents this entire subject fairly and well.

SALVARSAN OR 606 (DIOXY-DIAMINO-ARSENOBENZOL). Its Chemistry, Pharmacy and Therapeutics. By W. Harrison Martindale, Ph.D., Marburg, and W. Wynn Westcott, M.B., London, H. M. Coroner for North-East London. Cloth. Price, \$1.50. Pp. 77, with illustrations. New York: Paul B. Hoeber, 69 E. Fifty-Ninth St.

The time has hardly arrived for a disinterested estimate of salvarsan; consequently we must not expect very critical treatment from a work like the present. The authors have attempted to abstract and arrange the available literature, so as to give a good account of the chemistry, pharmacy and therapeutic uses, including administration, of the new remedy. Some carelessness in style is to be regretted. Thus perhaps Hoppe and Wittneben have some occasion for offense at their apparent inclusion among the insane in the following sentence: "Dogs were first injected, subsequently Alt's two assistants, Hoppe and Wittneben, injected themselves with 0.1 gm. each and thus the treatment was extended to trials on lunatics (70)." At the close the authors give some personal communications which they have received and which contain timely warnings as to the danger of hasty conclusions from the results of the early trials of the remedy. The book terminates with a bibliography containing 130 references with partial abstracts of the papers.

EINFÜHRUNG IN DIE MODERNE KINDERHEILKUNDE. Ein Lehrbuch für Studierende und Aerzte. Von Dr. B. Salge, Professor der Kinderheilkunde in Freiburg i. B. Second Edition. Cloth. Price, 9 marks. Pp. 384, with 15 illustrations. Berlin: Julius Springer, 1910.

Although brief—it contains only 379 pages exclusive of the index—this small text-book is a summary of most of the important work in pediatrics to date. Valuable from cover to cover, it is especially to be commended for its chapter on the artificial feeding of infants. For a book of its size, it elaborates thoroughly the latest German ideas of nutrition and their application to the problem of infant-feeding. In addition to the other methods of feeding, the theory and use of Finkelstein's *Eiweiss-Milch* is considered. The book is well arranged, is concise and can be recommended both to the student and to the practitioner. A translation of the chapter on infant-feeding would be of interest to the American physician, whose knowledge of the German ideas on this subject is, on the whole, extremely vague.

PRINCIPLES OF SURGERY. By N. Senn, M.D., late Professor of Surgery, University of Chicago. Fourth Edition thoroughly revised by E. J. Senn, M.D., and E. Friend, M.D., Instructor in Surgery in Rush Medical College. Price, \$5 net. Cloth. Pp. 706, with 231 illustrations. Philadelphia: F. A. Davis Co., 1909.

In the preface, the editors, E. J. Senn and E. Friend, say "It would be rather presumptuous on our part to attempt to improve on the contents of the first, second and third editions of this volume which were made with the unerring accuracy characteristic of the master-mind of the author." The only additions that have been made in this edition are five or six pages dealing very briefly with the Bier method of treatment and with Wright's opsonic theory. Otherwise this edition corresponds practically in every way with the previous or third edition.

LECTURES ON COSMETIC TREATMENT. A Manual for Practitioners. By Dr. Edmund Saalfeld, of Berlin. Translated by J. F. Halls Dally, M.A., M.D., Physician to the St. Marylebone General Dispensary. Cloth. Price, \$1.75. Pp. 186, with illustrations. New York: Paul B. Hoeber, 69 East Fifty-ninth Street, 1910.

This little book contains matter not found in works on dermatology, much of which will be useful to the general practitioner, as well as to the dermatologist or to the prac-

itioner who limits his work still further to the pathology of affections comprehended under the title of the book. Except for the suggestion of a great many proprietary preparations, it is a satisfactory and useful book.

A SHORT HANDBOOK OF COSMETICS. By Dr. Max Joseph, Berlin. Third Edition. Authorized English Translation. Cloth. Price, \$1. Pp. 86. New York: E. B. Treat & Co., 1910.

This book does not enter into the pathology of affections of the skin, hair and nails, but simply describes their general care by means of hygiene, water, soaps, lotions, ointments, creams, paints, etc., giving formulas for many such preparations, many of which seem to have proprietary names. One receives the impression that this is a book for the laity rather than a guide to the general practitioner or specialist in this branch of dermatology.

Medicolegal

Validity of Statutes Forbidding Advertising for Patients and Special Ability to Treat or Cure Chronic and Incurable Diseases—Chronic and Incurable Defined—Consultation of Medical Works by Boards

The Supreme Court of Arkansas, on the appeal of the State Medical Board of the Arkansas Medical Society vs. McCrary (130 S. W. R. 544), a suit brought by the latter party to enjoin the board from taking action in the matter of revoking his license to practice medicine, reverses a decree granted him, and dismisses his complaint for want of equity. It does not agree with his contention that his license to practice medicine was a property right, the revocation of which was an exercise of judicial power, which could not be vested in any administrative board, but only in the courts, and that to assume to invest this power in the board was to deprive him of his property without due process of law, in violation of the state constitution.

But the most difficult question in the case to determine, the court says, was raised by the contention that subdivision d of section 8 of Act 219, of the Arkansas General Assembly, approved May 6, 1909, which authorizes the board to revoke the license of a physician for "publicly advertising special ability to treat or cure chronic and incurable diseases," is too vague and indefinite to be upheld and enforced. This has given the court the gravest concern, and, after due consideration, the court has decided to uphold the provision. The court's attention was not called to any case in which a statute of similar import has become the subject of judicial determination. Counsel for the complainant relied on cases where statutes authorizing the Board of Medical Examiners to revoke the certificate of a physician for making "grossly improbable statements," or for "unprofessional or dishonorable conduct," have been held void, as being unreasonable, too uncertain and indefinite. *Hewitt vs. State Board of Medical Examiners*, 148 Cal. 590; *Matthews vs. Murphy*, 23 Ky. Law Rep. 750; *Czarra vs. Board of Medical Supervisors*, 25 App. D. C. 443.

On the other hand, there are cases upholding statutes empowering boards to revoke the licenses of physicians, who are guilty of unprofessional and dishonorable conduct, and the licenses have been revoked or not, according to the proof made. *State ex rel. Feller vs. Board of Medical Examiners*, 34 Minn. 391; *McComber vs. State Board of Health*, 28 R. I. 3, and the case note to *Hewitt vs. State Board of Medical Examiners*, 7 Am. & Eng. Ann. Cas. 750, indicate that the weight of authority is to this effect. But this court need not decide that question; for it holds that the language of subdivision d in question is not too uncertain and indefinite to be upheld and enforced. In the case of *Thompson vs. Van Lear*, 77 Ark. 506, this court held that an act forbidding physicians and surgeons to solicit patients by paid agents was a valid exercise of the police power. For like reason, a statute forbidding a physician to advertise for patients in newspapers would be upheld; and, by analogy, a statute forbidding them to

advertise their ability to treat and cure certain named diseases would be a valid exercise of the police power.

While the particular disease against which the prohibition of the statute is directed is not named, as was the case of *Kennedy vs. State Board of Registration in Medicine*, 145 Mich. 241, yet the words "chronic and incurable," when used with reference to diseases of the body, are not variable, but have a settled and generally accepted meaning. The word "chronic" is the antithesis of "acute," and a chronic and incurable disease is generally understood to be one of long standing, deep-rooted, obstinate, persistent, and unyielding to treatment. On this account those afflicted with such diseases become discouraged, and to an extent desperate, and more easily become the prey of conscienceless and unscrupulous practitioners in the medical profession. Such diseases are specifically named and discussed in standard medical works, and are known to all physicians, who may possess a sufficient knowledge of their profession to practice the art of healing, as chronic and incurable diseases. For the board to consult these standard medical works would not be to use them as evidence as contended by the complainant, but such act would be rather done as an aid to the memory and understanding of the members of the board. See *State vs. Willhite*, 132 Iowa 226, 11 Am. & Eng. Ann. Cas. 180, and case note.

Criminal Abortion—Proper Cross-Examination of Expert

The Supreme Court of Arkansas affirms, in *Davis vs. State* (130 S.W.R. 547), a conviction under the statute of that state which provides that "It shall be unlawful for any one to administer or prescribe any medicine or drugs to any woman with child with intent to produce an abortion or premature delivery of any fetus before the period of quickening." It says that the felony thus created by the statute consists in the criminal act of administering or prescribing medicine to the woman with child with intent to produce an abortion. An abortion is the delivery or expulsion of the human fetus prematurely. There must be an intent to cause the abortion without lawful reason, and this must be accompanied by the unlawful act of administering the drug. In the case of *State vs. Reed*, 45 Ark. 333, it was held that under this statute the indictment must allege that the criminal act of administering the drug was done "before the period of quickening;" that is, the time when the overt act must be committed, and when that act is accompanied by the intent to produce an abortion, the crime is complete. The criminal intent consists in the design to cause an abortion, whether it shall result before or after the period of quickening. The intent becomes criminal by reason of the unlawful design for which the medicine is administered; and when the medicine is administered with this unlawful design, the act becomes criminal without the necessity of any other or further intent. The criminal act under this statute was complete when the drug was administered "before the period of quickening," for the purpose of causing an abortion; that is, with the intent of causing a delivery or expulsion of the human fetus prematurely. The indictment sufficiently made this charge, and it was not necessary also to charge that the drug was administered for the purpose of causing a delivery or expulsion of the human fetus before the period of quickening.

The court also holds that it was proper, on cross-examination, to ask a medical witness the question: "Assuming that a woman had been criminally intimate with a man for quite a while, and that you received information that she was in a family way and that an abortion was to be produced and you were called to see her, and found her suffering with a dilated os, these hemorrhages, and the breasts as mentioned, and if you found softening of the lower vagina with pains bearing down, in your opinion, what would be the matter with her? How would you diagnose that?" The court says that, if it should be considered that this question was propounded to the witness for the purpose of obtaining the opinion of a witness on a hypothetical question, it was competent because it was based on facts as proved before the jury. It was also competent for the reason that it consisted of the cross-examination of an opposing witness, and its purpose was to test his competency as an expert, as well as to affect his credibility as a witness.

Society Proceedings

COMING MEETINGS

American Medical Association: Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.
 Association of American Medical Colleges, Chicago, February 27-28.
 Medical Society of the Missouri Valley, St. Joseph, Mo., March 16-18.
 Natl. Confed. of State Med. Exam. and Licg. Bds., Chicago, Feb. 28.

CLEVELAND ACADEMY OF MEDICINE

Meeting held Dec. 16, 1910

The President, DR. CHARLES B. PARKER, in the Chair

Locomotor Ataxia and Result of Specific Treatment

DR. FRANK BILLINGS, Chicago: In 72 out of 100 selected cases of tabes, the disease occurring between the ages of 40 and 60, the youngest patient being 29 and the oldest 70, the patients admitted having had syphilis. A Wassermann was done on twelve others and was positive in ten. Sixty-nine of the seventy-two remembered the date of infection, and 66 per cent. had their first symptom in from ten to twenty years after luetic invasion. The early symptoms, in order of frequency, were the lightning pains, alteration of knee-jerk, absence of pupillary phenomenon, paresthesias, uncertainty of equilibrium and disturbance of bladder. The lightning pains were present in ninety-six of the patients and in two were present for years before other symptoms appeared. The Argyll-Robertson pupil was found in ninety-two, and in only one case was the pupillary reflex normal. Pupils were irregular in about half the cases, and at first examination the eye-grounds were normal in all but four. Knee-jerk was absent or weak in eighty-eight patients, and the Achilles reflex was also frequently changed. Bladder disturbance was one of the most notable early symptoms—in some cases there being pains of the character of crises. Disturbance or retention of urine occurred in sixty cases. Romberg's phenomenon was nearly always present. Visceral crises were present in twenty, and of these thirteen were in the form of gastric crises. It is interesting to note that nine of these had been operated on for calculous cholecystitis. I have kept in touch with forty-three of these patients; five are dead; two are dying of paresis; six are worse, while thirty-two are improved. Treatment consisted of deep intramuscular injections of mercury in all but three. The following injection was generally employed:

R		gm. or c.c.
Hydrargyri chloridi corrosivi		
Phenolis	āā	gr. xv 1|
Sodii chloridi		gr. xxx 2|
Aquae destillatae		3 ij 60|

Ten or twenty minims were injected deeply into the gluteal muscle for twenty or twenty-five times, within a period of two months. The patient should be kept in bed during the injection treatment, as one can then give an injection every day or every second day. If the patient is up and about, he can take an injection only once or twice a week. Injection series may be repeated after three or four months, using potassium iodid. grains 10 to 20, three times a day, for two or three weeks in every month in the interim—beginning ten days or two weeks after the last injection. Tobacco and alcohol must be prohibited, and the patient should have massage, light exercise and Frenkel's reeducative movements.

DISCUSSION

DR. J. H. LICHTY: I am treating five tabetics, but in all of them the Wassermann is negative. I agree with Dr. Billings as to the use of hydrargyrum. Three of my patients have improved under the use of hydrargyrum-cyanid injections. One of these has had tabes for fourteen years, and until the past year has taken hydrargyrum continuously, by the mouth, without results. Lately I have been using it hypodermically, and the patient is improving.

DR. W. B. LAFFER: My results in the treatment of tabes have not been so good as Dr. Billings, as far as the use of hydrargyrum is concerned. I get the best results from hygienic precautions and Frenkel's reeducative movements.

DR. OSCAR T. SCHULTZ: Does a positive Wassermann in a case of tabes mean that there is an active luetic process present? I think not, but believe it may be due to products

of nerve tissue degeneration. For this reason, I believe we usually get a positive Wassermann in a case of leprosy.

DR. DEXTER: Out of fifteen sero-diagnoses of tabes lately done there were 65 per cent. of positives.

DR. FRANK BILLINGS: Of twelve of my cases on which the Wassermann was done, ten were positive. It is my experience that a positive Wassermann becomes negative after eighteen to twenty deep injections of hydrargyrum; later it becomes positive again. It is only after repeating such a series of injections two or three times that the Wassermann remains negative. I repeat my series of injections from three to four times or more, if required; giving iodids between series. I have used sodium eacodylate very little in the treatment of tabes, and believe it to be of little value. However, I think that in cases of chorea, some cases of pericarditis with effusion, and certain cases of pleural effusion, it is of value, given in 5 to 10 grain doses, hypodermically, every twenty-four hours.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Jan. 4, 1911

The President, DR. GEORGE DESCHWEINITZ, in the Chair

Salvarsan in Syphilis

DR. JUDSON DALAND: A study of this treatment seems to show that we have in it a remedy with a definite and very distinct influence on syphilitic processes, primary, secondary, tertiary and congenital. There is evidence also that the influence varies in different cases. In cases in which the disease is not definitely localized, the intravenous method of treatment gives the best results. Relapses have occurred in from 5 to 15 per cent. of cases.

Results from the Use of Salvarsan in Syphilis

DR. JAY F. SCHAMBERG: Nineteen patients were treated with salvarsan—eight subcutaneously and eleven intravenously. Of the patients with secondary syphilis treated subcutaneously, one was freed of eruptive manifestations by two injections. In one the eruption has disappeared, but the disease is obviously not cured. In two cases the treatment failed. One late ulcerating syphilid of the lip was cured. Among the cases in which no improvement was noted were one case of tabes. In one case of cerebral syphilis the result was indeterminable. In one case of spinal syphilis improvement was rapid. Of those treated by intravenous injections one parietic patient was not improved, and one improved; in one of tabes improvement was alleged by physician; one case of secondaries was free of recurrence at the end of sixty days; in one case of secondaries there was a suspicion of recurrence after forty days. One patient with semimalignant late secondaries was free of symptoms when last seen. In three cases of late secondaries, mouth lesions healed. In one case a gummatous ulcer of leg healed. In one case, the initial lesion is healed to date. In our experience the intravenous injections have produced a more prompt response to treatment and have exerted a more permanent beneficial effect than the subcutaneous treatment. Ehrlich's latest advice is to inject intravenously and follow this in some days by a subcutaneous injection.

Intravenous injections are usually painless, but are followed, as a rule, by nausea, vomiting and by brief moderate fever. In three patients there was severe pain; in three, moderate, and in three, little or no pain. An infiltrative tumefaction, tender to touch, slowly subsiding in the course of several weeks, developed in practically all of the cases. The results obtained in these cases with salvarsan could, in large part, have been achieved more slowly with mercury. It must be remembered, however, that the successful treatment of syphilis consists in more than the mere effacement of cutaneous and mucous membrane manifestations. Ehrlich and others have shown that salvarsan has a greater spirillicidal value than any known remedy. As to the duration of effect, no one is in a position to speak dogmatically at the present day. Ehrlich's hope of a *therapia sterilisans magna*—a cure at one stroke—is certainly not realized, save possibly in exceptional instances, but those who are disappointed in this must not conclude that a great therapeutic advance has not been made.

DISCUSSION

DR. FRANK CROZER KNOWLES: There are several insurmountable difficulties in the use of salvarsan, except in selected cases, unless the technic can be simplified and the dangers lessened. First, the use of the drug should be preceded by careful examination of the organs and vascular system and of the inner structure of the eyes. Second, the preparation of the drug for injection requires, if the Wechselsmann method is used, approximately one hour; if the simpler technic of Lesser is employed, about one-half hour. Third, it is almost essential that patients treated by this drug should be kept in bed for several days to prevent either serious discomfort or complications. Moreover, the remedy is not infallible, as was at first thought. While salvarsan is an important aid in the treatment of syphilis, it will not, in my opinion, displace mercury in the cure of this disease.

DR. H. M. CHRISTIAN: My experience with salvarsan has been limited to about seven cases. The first case was one of tertiary syphilis, with a necrotic gummatous ulcer at the ankle, of about two years' standing. The man was injected in the gluteal region about six weeks ago. The ulcer healed within ten days and the man gained in weight from 15 to 18 pounds. He had been taking mercury and potash for over a year. The next case was one of chancre, which had resisted all ordinary methods. One dose of salvarsan was given. The temperature ran to 103-104 F. for two nights and then dropped to normal. In a week the ulcer was entirely healed. One case of acute roseola with sclerosis of a chancre was not much affected. In a case of papulosquamous eruption, the eruption has almost entirely sealed off. In all these cases the Wassermann reaction was positive.

DR. S. SOLIS COHEN: There is a peculiar psychic effect of salvarsan. A colored man, much emaciated, was admitted to the hospital on account of enlarged liver. There was a perforation of the palate extending through the bone as well as the mucous membrane, and a gumma in the neighborhood of the sternoclavicular articulation which was giving considerable pain. Eight-tenths of a gram of the neutral solution was injected into the muscles of the back. The pain of the gumma disappeared within a couple of days, and all other external evidence of disease disappeared. The Wassermann reaction, however, has remained continuously positive for some twelve weeks. The patient feels well; his appetite has been good and he has gained in weight. A curious fact is that daily and careful examinations of the urine have failed to reveal arsenic. The feces, unfortunately, were not examined.

DR. JUDSON DALAND: Because of a large number of relapses reported in Berlin, it has been decided definitely that the method of administration should be changed from the intramuscular to the intravenous. The intravenous dose for a male adult should not be less than 0.5 gm. More than 1 gm. has been given intravenously without ill effect. It is well to follow the advice of Ehrlich to employ the alkaline solution in all intramuscular injections. The point that Dr. Cohen made regarding the urine being arsenic-free, I cannot explain. Most of the reports show that arsenic remains in the urine for from ten days to two weeks or longer, and has been found in the fecal discharges for about the same length of time. When given intravenously, the arsenic is supposed to disappear from the urine in about four days, but recent observation shows that it persists much longer.

DR. J. F. SCHAMBERG: Regarding the value of this particular remedy, opinion must depend largely on the point of view. Those who were led to expect a cure at one stroke doubtless experience a feeling of disappointment. Those, however, who recognize that we have had introduced into our therapeutic armamentarium a drug of marvellous immediate value, cannot but feel that a great advance has been made. Doubtless, many cases of syphilis will require a repetition of treatment by this drug. At the present time salvarsan has its chief indication in those cases which resist mercury and iodid. It is, perhaps, fortunate that there is a halt in the exuberant enthusiasm excited by Ehrlich's announcement, for this may retard injudicious haste in the use of the drug by unqualified persons and in unsuitable conditions. At present, given a robust individual, with early syphilis, who desires treatment, it seems to me that we are perfectly justified in using it.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

January 28

- 1 *Personal Experience with a Very Restricted Diet (Rice) in Acute Inflammatory Disease of the Skin. L. D. Bulkley, New York.
- 2 Surgical Aspects of Filariasis. C. F. Stokes, U. S. Navy.
- 3 *Camphor in Large Doses in Pneumonia. L. Weber, New York.
- 4 Infant Mortality in New York City. W. C. Phillips.
- 5 Concealed Chancre of the Male Urethra. C. M. Whitney, Boston.
- 6 *Treatment of Peritonitis Consecutive to Appendicitis. J. J. Buchanan, Pittsburg, Pa.
- 7 Inebriety, Its Treatment and Curability. T. D. Crothers, Hartford, Conn.

1. This article also appeared in the *British Medical Journal*, Sept. 24, 1910.

3. **Camphor in Pneumonia.**—Of a freshly prepared solution, 20 per cent. camphor in oil of sweet almonds, Weber injected two hypodermic syringefuls into the outer circumference of the thighs every hour until eight had been given each day, representing altogether about 30 grains of camphor a day for four days. The patient recovered promptly, although at first there could be no doubt but that the patient would shortly die unless given some pneumococcus serum, or vaccine, or chemical antitoxin which would help her to overcome an infection against which her constitution could not prevail.

6. Abstracted in *THE JOURNAL*, Nov. 19, 1910, p. 1837.

Boston Medical and Surgical Journal

January 26

- 8 Herbert Leslie Burrell, M.D. (1856-1910). In Memoriam. E. H. Bradford, F. S. Watson and G. H. Monks, Boston.
- 9 Time and Method for Prostatectomy. B. Tenney, Boston.
- 10 Medical Problems of Alcoholism. I. H. Neff, Foxborough, Mass.

New York Medical Journal

January 28

- 11 *Nervous Affections and Adjustments of the Eyes. G. T. Stevens, New York.
- 12 *Carcinoma of the Ileum with Unusual Symptoms. A. Bassler and J. P. Grant, New York.
- 13 Dietary Studies in Institutions for Tuberculous Patients in the State of Colorado. C. D. Spivak, Denver.
- 14 Treatment of Septic Endometritis. H. Weil, New York.
- 15 *Direct Lavage of the Duodenum. M. H. Gross, New York.
- 16 When Sedatives are Tonic. W. F. Waugh, Chicago.
- 17 *Roentgen-Ray Therapy in Malignant Lesions. J. Rudis-Jefnsky, Cedar Rapids, Iowa.
- 18 Typhoid Complicated by Double Parotiditis. R. E. Coughlin, Brooklyn, N. Y.
- 19 Abuse of Urethral Instrumentation. G. Greenberg, New York.

11. **Nervous Affections and the Eyes.**—Attention has frequently been directed by Stevens to the important relation which exists between the habitual pose of the body, as well as the muscular expression of the face, and the peculiarities in the adjustment of the eyes within the orbits. In this paper he considers two forms of chronic spasm, one affecting the muscles of the neck, the other those of the face, which in their established and typical forms cannot be said to be subject to the influence of ordinary forms of medical treatment, and to which both surgical and electrotherapeutic treatment have most frequently been directed in vain. Stevens treats these patients through the eyes, and he reports several cases. Notable relief in each case not only followed, but was the direct result of the more or less complete correction of the maladjustments of the eyes. It is reasonable, then, he says, to attribute to bad adjustments the extreme conditions of spasm. He believes that such spasmodic conditions as these are, in a more direct sense, the result of habitual excessive tension of the affected groups of muscles, this excessive tension arising from certain habitual body poses or from certain facial expressions, all in the interest of compensation for, or correction of, the unfavorable adjustment of the eyes.

12. **Carcinoma of the Ileum.**—The report of the case under the author's observation is of interest for the following reasons: (1) Whether an attack of typhoid (the ulceration in which is mostly in the ileum) may have had to do with the

development of carcinoma at some local site of cicatrix formation of the healed typhoid ulcer; (2) the fact that there had been no vomiting in the course of the ulcer growth, this being possibly of eighteen months' duration, and being particularly of interest when the degree of peristalsis present in the case so strongly suggested a marked stenosis in the small intestine, and the fact that the first vomiting spell was fecal in type; (3) the marked degree of visible peristalsis which could be traced from the ileum up and which required the additional force of the stomach to drive the contents in the small intestine through the strictured ileum; the good condition of the general body, considering that the cancer was far advanced; (4) the operation of lateral anastomosis of the middle ileum (which is very movable) with the ascending colon (which is fixed) in such a way as to have an anchored receiving part of the union to which a very movable viscus (ileum) could accommodate itself as may be called for in its function, rather than to have joined the ileum to the sigmoid and have had two long mesenteries to both parts of the union, which would have increased the danger of twists or kinks at the site of union and would have brought about an abnormal position of the parts.

15. Abstracted in *THE JOURNAL*, April 23, 1910, p. 1365.

17. Abstracted in *THE JOURNAL*, Oct. 29, 1910, p. 1583.

Ohio State Medical Journal, Columbus

January

- 20 *Instruments Used by Lt.-Col. Henry Smith, I. M. S., and Some Points in Technic in His Method of Radical Extraction of Cataract. D. T. Vail, Cincinnati.
- 21 Comparison of the Old Cataract Operation with the New. C. F. Clark, Columbus.
- 22 Joint Removal of Capsule and Lens. R. Sattler, Cincinnati.
- 23 *Prostatectomy. W. D. Hamilton, Columbus.
- 24 *Serotherapy in Epidemic Cerebrospinal Meningitis. W. S. Chase, Akron.
- 25 Arthritis of Gonorrheal Origin and the Use of Gonococcus Vaccine. F. A. Ockley, Cleveland.
- 26 Carbohydrate Idiosyncrasy in Infants. A. Ramsey, Cincinnati.

20 and 23. Abstracted in *THE JOURNAL*, June 4, 1910, pp. 1896 and 1897.

24. Abstracted in *THE JOURNAL*, July 16, 1910, p. 246.

Washington Medical Annals

January

- 27 Review in Ophthalmology. R. S. Lamb, Washington, D. C.
- 28 *Kidney Displacements, Congenital and Acquired, as Etiologic Factors in Dystocia. P. Willson, Washington, D. C.
- 29 *Aneurysms in the Army Medical Museum. D. S. Lamb, Washington, D. C.
- 30 Specimens of Handwriting Before and After Treatment by Psychoanalytic Measures Followed by Re-Education. T. A. Williams, Washington, D. C.
- 31 Epithelioma of the Larynx. C. W. Richardson, Washington, D. C.

28. **Kidney Displacements.**—Only two cases of dystocia due to prolapse of a floating kidney into the pelvis in front of the pregnant uterus were found by Willson in the literature. Both mothers recovered and both infants were lost. One baby was delivered by version and extraction, but the kidney so filled up the pelvis that the delivery of the after-coming head was unduly delayed and fatal asphyxia resulted. The other child was delivered with Tarnier's basiotribe. The case reported by the author makes the third on record. The patient was a primipara, aged 21. She gave a history of attacks of acute pain in the right side, followed frequently by the passage of a large quantity of pale urine. The antepartum examination disclosed no abnormalities, except a slight contraction of the transverse diameters of the pelvis. An examination made after three hours of hard second-stage pains disclosed the cervix nearly dilated, and the head well engaged at the brim. The concavity of the sacrum was occupied by a mass of the shape, size and consistency of the right kidney. The kidney was freely movable, and during examination by the physician it was forced up over the brim of the pelvis. The woman was then delivered by forceps. Immediately following delivery, and a few days later, at the time of repairing a vaginal laceration, the kidney could be made out freely movable in the right abdomen and capable of being replaced in its normal position. The baby weighed 8¾ pounds, and was born alive and well.

29. **Aneurysms in the Army Medical Museum.**—There are 116 specimens of aneurysm in the Army Medical Museum. All those received from the army are from men, making the proportion of men to women 8.4 to 1.0; the proportion usually stated is 7 to 1. Of the 116 specimens, seventy-two are of the arch of the aorta, seven of the thoracic aorta, fourteen of the abdominal aorta and the remainder divided up among many other arteries. Of the ascending, transverse and descending parts of the arch, the proportion is seven, four and two. Some specimens show two and even three aneurysms. The ages at death were between 24 and 94; sixty patients were between 30 and 60 years of age. The cause of death was stated in only ten cases, two of which were gunshot wounds, and the others were from some sort of strain. In eighty-three cases there was definite statement that the blood-vessel was diseased, or the specimen showed that fact; syphilis was noted in eleven cases, probably in others also, though not stated. The aneurysm was sacculated in seventy-seven, fusiform in twenty-eight, and in ten it was dissecting; there was aneurysmal varix, and one varicose aneurysm. In at least seventy-six cases the aneurysms ruptured, in five of these a diffuse aneurysm was thus formed. In two cases the aneurysm underwent suppuration. In many cases the patient died of some lesion supervening on the aneurysm or not at all connected with it; six persons died of pneumonia. The heart was enlarged in only twenty-two cases, and in some of these the enlargement was from valvular disease. Treatment varied. Rest was useful in some cases. Of the various drugs, potassium iodid seemed to be of use. Pain was controlled by morphia. Venesection, compression, coagulating injections, wire introduction, electrolysis and ligation had been employed in the various cases.

Vermont Medical Monthly, Burlington

January

- 32 Pathology of Cranial Injuries. B. H. Stone, Burlington.
- 33 Acute Epidemic Paralysis (Polio-myelitis). C. K. Johnson, Burlington.
- 34 Bismuth-Vaseline Paste in Suppurating Tracts. L. Allen, Burlington.
- 35 Treatment of Eclampsia. E. J. Melville, St. Albans.

Chicago Medical Recorder

January

- 36 Relation of Vasectomy to Eugenics. J. C. Hoag, Chicago.
- 37 Emergency Surgery and Surgical Emergencies. W. H. Allport, Chicago.
- 38 Open-Air Schools. C. Hedger, Chicago.

Journal of Infectious Diseases, Chicago

January

- 39 *A Method for the Bacteriologic Standardization of Disinfectants. J. F. Anderson and T. B. McClintic, Washington, D. C.
- 40 Application of Certain Laws of Physical Chemistry in the Standardization of Disinfectants. E. B. Phelps, Boston, Mass.
- 41 *Presence of Suppuration in the Tubercles of Leprosy. F. B. Gurd, New Orleans.
- 42 Susceptibility to Plague of the Weasel, the Chipmunk and the Pocket Gopher. G. W. McCoy, San Francisco.
- 43 *Effect of Vacuum Desiccation on the Virus of Rabies. D. L. Harris and L. F. Shackell, St. Louis.
- 44 *Administration of Diphtheria Toxin in a Collodion Sac. E. C. L. Miller, Detroit.
- 45 Biologic Reactions of the Vegetable Proteins. H. G. Wells and T. B. Osborne, Chicago.

39. Abstracted in *THE JOURNAL*, Sept. 17, 1910, p. 1043.

41. **Suppuration in the Tubercles of Leprosy.**—That many or, perhaps, most of the abscess formations, suppurative arthritides, and other purulent processes occurring in leprosy patients are due to the invasion of tissues whose resistance is lowered by one or other of the ordinary pyogenic bacteria is undoubtedly correct; that, however, such a condition is not a necessity, a case which came under Gurd's observation proves. The patient had suffered from leprosy between two and three years. He was suffering from malaise, anorexia and other evidence of a constitutional disturbance. The tubercles situated over the face and hands were much swollen and very red and tender; one swelling over the malar prominence on the left side had ruptured spontaneously and was discharging pus. A tubercle over the posterior surface of the left wrist was incised, resulting in the expulsion of about 25 c.c. of a

yellowish-green purulent material. The material was planted on ordinary and several special culture media, both aerobically and anaerobically, without the development of a single colony. Smears were made and stained by Giemsa's method, carbol-fuchsin with acid decolorization, and by Gram's. The cellular elements with the polychrome stain consisted almost exclusively of polymorphonuclear leukocytes, together with a small number of large vesicular nuclei, practically devoid of protoplasm.

Leprosy bacilli were present in very large numbers. A few well-formed aggregations or globi were found, but for the most part the bacilli were lying singly or in small groups. A much larger percentage than usual appeared broken up in the form of granules. Certain numbers of pus cells contained a few bacilli but, in general, the organisms were free. Absolutely no other bacteria could be demonstrated in any preparation. In addition to the above case, in which comparatively large pus collections were present, the routine examination by Gurd of a number of leprosy nodules derived during life and at necropsy has shown that polymorphonuclear leukocytes may be found almost constantly in small numbers, although in no case have definite foci of such cells been seen.

43. Vacuum Desiccation and the Virus of Rabies.—The essential feature of Shackell's method is that the material is kept solidly frozen during the process of drying. Animal tissues when dried by this method are preserved intact, show no shrinkage, are porous, and resist chemical changes and deterioration. The authors have found that, by using Shackell's method of desiccation, brains and cords may be desiccated *in toto* without destruction of virulence. The time required for complete extraction of water is about twenty-four to thirty-six hours. A number of brains were so treated and the infectivity of all was preserved. After the completion of desiccation, these brains were placed in an ordinary desiccating jar over sulphuric acid, and left continually exposed to light at the ordinary room temperature. One brain has remained infective for four months. The only precaution taken was to guard against moisture. Material thus dried is like chalk, and is easily pulverized. It is, however, very hygroscopic, and, after a few hours' exposure to the air, becomes leathery and rapidly loses its infectivity. Experiments are now being carried on to compare quantitatively the virulence of desiccated cord with that of fresh cords, after the method described by Harvey and McKendick.

44. Administering Diphtheria Toxin in Collodion Sac.—In his experimental work Miller found that a guinea-pig may be killed by introducing a collodion sac containing diphtheria toxin into its peritoneal cavity; the slow absorption of toxin from the sac corresponding closely to the absorption of toxin from the false membrane in a case of diphtheria. To save the life of a guinea-pig by the administration of antitoxin after the introduction of a sac, requires an enormous dose or the long-continued administration of moderate doses. The reason for this seems to be that the antitoxin administered subcutaneously, being a foreign protein, is subjected to rapid destruction of the tissues, while the toxin protected from such destruction by the sac continues to diffuse out and kills the animal after the protective power of the antitoxin has disappeared. The essential difference between these sac tests and the administration of antitoxin in diphtheria appears to be that in these tests the antitoxin has no influence on the supply of toxin, while in diphtheria the administration of antitoxin is followed by destruction of the membrane, and consequently the supply of toxin ceases and the patient recovers. This power of antidiphtheritic serum to destroy the membrane is probably as important as its antitoxic action but, unfortunately, we have no means of measuring it. When used as a prophylactic, low potency serums protect for a longer time than those of high potency. Antitoxin protects until it is destroyed by the tissues. The more proteid it is combined with, the longer will its destruction be delayed. Diphtheria toxin in a collodion sac undergoes some change by which the sac, although containing less toxin than in the beginning, is able to kill a second guinea-pig in half the time required to kill the first. This difference may be analogous to

the short incubation period of tetanus toxin from the blood of an animal compared with the incubation period of tetanus toxin produced by the growth of the germs *in vitro*. It may also account for certain very rapidly fatal cases of diphtheria.

Southern California Practitioner, Los Angeles

January

- 46 Submaxillary Infection. Ludwig's Angina. W. W. Roblee, Riverside, Cal.
- 47 Present Status of Gastric Carcinoma. W. P. Millspaugh, Los Angeles.
- 48 Infections in Minor Surgery. W. L. Huggins Los Angeles.
- 49 The Seventh Year of the Barlow Sanatorium, Los Angeles, Cal. R. L. Cunningham, Los Angeles.
- 50 Tonsillotomy vs. Tonsillectomy, with Technic. C. H. Montgomery, Los Angeles.
- 51 The German Clinics. H. H. Lissner, Los Angeles.
- 52 The Finsen Institute, Copenhagen, in 1910. A. Solland, Los Angeles.
- 53 Atonic and Spastic Constipation. H. S. Gordon, Santa Ana, Cal.
- 54 Alcoholism as a Cause of Disease. H. A. Hughes, Phoenix, Ariz.
- 55 Los Angeles Medicine. W. Lindley, Los Angeles.

American Journal of the Medical Sciences, Philadelphia

January

- 56 *Paroxysmal Pulmonary Edema and Its Treatment. A. Stengel, Philadelphia.
- 57 Control and Treatment of Hypertension and Arteriosclerosis. H. L. Elsner, Syracuse, N. Y.
- 58 *The Tonic Use of Digitalis. E. Schmoll, San Francisco.
- 59 Treatment of Typhoid. F. S. Meara, New York.
- 60 Cholera from a Modern Standpoint. A. H. Doty, New York.
- 61 *Relation of Disease of the Gall-Bladder and Biliary Ducts to the Gastric Functions. J. A. Lichty, Pittsburg.
- 62 *The Dyspepsia of Old Age. G. M. Niles, Atlanta, Ga.
- 63 *Diagnosis of Tuberculosis of the Bronchial Glands. H. F. Stoll, Hartford, Conn.
- 64 Pellagra: Two Cases with Necropsy. P. V. Anderson, Morgantown, N. C., and W. G. Spiller, Philadelphia.
- 65 *Influence of the Trendelenburg Position on the Quantity of Urine Excreted During Anesthesia. J. W. Bovée, Washington, D. C.
- 66 Multiple Abscesses of the Nasal Submucosa in a Case of Leukemia. J. P. Tunis, Philadelphia.

56. Paroxysmal Pulmonary Edema.—The distinguishing features, clinically speaking, of the condition referred to by Stengel, are its sudden onset, usually with slight provocation; the evidence of intense pulmonary edema; the expectoration of quantities of frothy and blood-stained serum; and the repetition of such attacks without intercurrent complicating conditions. These features distinguish this condition from certain other forms of acute pulmonary edema, which, during their height, may not be especially different in clinical manifestations. The seizures, as a rule, come on in the evening or after the patient has gone to bed. He may awake from a profound sleep with an oppressive cough, followed by the symptoms described. In some cases, vague apprehensions or uncontrollable nervous feelings may precede the attack, but these usually occur after a repetition of the seizures has made the patient familiar with their character and fearful of their recurrence. Various kinds of excitement, physical or mental, may provoke the attacks; but in a large proportion of cases there is no such cause. Repeated attacks of the same character may occur at intervals of days or weeks during a long period of time. Between attacks, the patient may be perfectly well, or, more frequently, may give evidence of some inadequacy of cardiac compensation. In the cases which have terminated fatally, the final result has usually been due to increasing cardiac decompensation rather than to the sudden effect of an attack of pulmonary edema. Morphine, atropine, chloroform, nitroglycerin and venesection are employed to control the attacks. After the first stage of the attack has been controlled by an injection of morphine and atropine, it is desirable to make use of cardiac stimulants to revive the power of the left ventricle and to promote vasodilatation, if this be possible. For these purposes injections of strychnine, digitalin, and nitroglycerin may be employed, and aromatic spirits of ammonia or brandy may be given by the mouth if the patient is able to swallow. The after-treatment in cases in which one or more attacks have occurred consists in strict regulation of the daily life of the patient to avoid fatigue, excitement, cold and physical strains, and some care of the diet so as to prevent overloading of the stomach and superalimentation, particularly at the evening meal. Caffeine may be particularly useful at this time, but strophanthus, digitalis or nitroglycerin may be desirable.

58. **Tonic Use of Digitalis.**—Selmoll holds that digitalis acts as a specific on the tonicity of the heart muscle, and is indicated whenever symptoms point to a failure of that function. Its tonic effects are best secured with a dose equal to the amount excreted—about 0.1 gram a day—though doses of 0.15 and 0.2 a day sometimes can be taken for weeks without the appearance of cumulative effects. Loss of tonicity is shown first by general symptoms—râles over the bases of the lungs, enlargement of the liver, and slight edema of the ankles. Digitalis is indicated, therefore, whenever these symptoms appear, and especially, he states, in cases in which the patient, after recovering from a severe break in compensation, shows a tendency to fail on the slightest exertion.

61. **Disease of the Gall-Bladder and Biliary Ducts.**—In 156 of 249 patients in whom the diagnosis of some disease of the gall-bladder and ducts has been made, Lichty made gastric analysis with the usual methods employed clinically to determine the secretory and motor condition of the stomach; eighty-four (54 per cent.) had hyperacidity; thirty-one (20 per cent.) had subacidity; and forty-one (26 per cent.) had normal secretion. The motor function, so far as could be determined, was normal in about the same percentage of cases. Of the 249 patients on whom these observations were made, fifty-one came to operation; thirty of these were subjected to gastric analyses; sixteen (about 53 per cent.) had hyperacidity; eight (about 26 per cent.) had subacidity; and six (about 20 per cent.) had normal acidity. In a number of the 249 cases the gastric analyses were made because there were definite symptoms of gastric disturbance associated with the gall-bladder symptoms, but in some it was made because the gastric symptoms were the only ones present, and later, when treatment did not produce the desired results, the abdomen was opened and either gall-stones were found, or adhesions from a local peritonitis, due to gall-bladder infection, had occurred between the gall-bladder and duodenum, between the gall-bladder and stomach, or both. In several cases both gall-stones and gastric ulcer were found. From these figures it would seem that about 75 per cent. of all gall-bladder cases may be associated with a disturbance of gastric secretion, and of this 75 per cent., two-thirds have hyperchlorhydria. Gastric motility, as well as gastric secretion, was disturbed in about the same proportion of cases.

62. **Dyspepsia of Old Age.**—The senile dyspepsias are divided into two classes by Niles, the hyperkoric and the akoric. In the first, or hyperkoric cases, the degeneration and insufficiency of the digestive organs simply keep pace with the rest of the body. With decreased muscular activity there are decreased assimilative powers, and the patient finds that articles of food now disagree which were formerly digested with ease. The second class, or akoric dyspepsia, is generally found in obese old people, or in those in whom the mental edge, perhaps once sharp and bright, has been either blunted or worn off. The normal tonicity of the stomach gives place to relaxation, its walls become flabby, and more food is required to give the sensation of comfortable fulness. Pyloric insufficiency is generally present, while atonic constipation supervenes almost as a matter of course. Hunger cannot be satisfied, elimination is imperfect, and the intestines veer between obstinate constipation and lenteric diarrhea. In the hyperkoric dyspepsia the food should contain a minimum of non-digestible, non-nutritious elements and lime salts. Most of the predigested foods on the market are unavailable on account of their high percentage of alcohol, but the meat juices, peptonized milk, malted milk, lactone buttermilk, malt extracts, eggs, and the farinaceous foods may usually be given, to which, if deemed advisable, the gastric and pancreatic ferments may be added. The proportion of cellulose, which should properly enter into the dietary of adults so as to promote peristaltic activity, may be omitted from consideration, and all foods should be given in the most concentrated form, and in the shape most easily assimilated. The management of the akoric type of senile dyspepsia will call for infinite tact and discretion. Cathartics should be used with caution, and gentle methods for cleansing the bowels should be combined with measures to overcome subsequent weakness.

63. **Tuberculosis of the Bronchial Glands.**—Tuberculosis of the bronchial glands, according to Stoll, often exists as a dis-

tinct clinical entity, capable of diagnosis. The presence of dilated veins over the anterior aspect of the chest, spinalgia, interscapular or vertebral dulness, and vertebral bronchophony speak strongly for enlarged bronchial glands, the tuberculous nature of which is perhaps assured when in addition to the above the individual is under weight and has a paroxysmal cough and the symptoms of a tuberculous toxemia. The recognition of the disease, while it is still limited to the bronchial glands, is of the utmost importance, as we know the most salutary results of tuberculin therapy are obtained in glandular tuberculosis.

65. **Urine Excreted During Anesthesia.**—If it can be concluded from Bovée's observations that the renal function is greatly lessened while the patient is in the Trendelenburg position, then the danger of that position is at once appreciated. In renal inefficiency, and cardiac and arterial lesions, it seems that the use of the Trendelenburg position introduces a special element of danger, and this less markedly when ether is used than when chloroform is employed as the anesthetic.

Southern Medical Journal, Nashville

January

- 67 *Study of Human and Bovine Bacilli, Isolated from Eleven Consecutive Cases of Cervical Adenitis. W. Litterer, Nashville.
- 68 Advance of Surgery. E. D. Martin, New Orleans, La.
- 69 Education of the Specialist. E. C. Ellett, Memphis, Tenn.
- 70 Treatment of Gastric and Duodenal Ulcers and Hyperchlorhydria. E. B. Block, Atlanta, Ga.
- 71 A Summary of Cases of Malaria. J. M. Swan, Watkins, N. Y.
- 72 *The Nausea of Pregnancy. G. H. Fonde, Mobile, Ala.
- 73 The Wassermann Reaction. J. O. Rush, Mobile, Ala.
- 74 Salvarsan in the Hospitals of Paris. A. L. Fowler, Atlanta, Ga.
- 75 First Measures Needed for Child Welfare on the Part of Municipal and Educational Authorities in the South. D. S. Hill, Nashville.

67. Abstracted in THE JOURNAL, Dec. 3, 1910, p. 2006.

72. Abstracted in THE JOURNAL, May 28, 1910, p. 1817.

New York State Journal of Medicine

January

- 76 *Diseases of the Stomach and Duodenum from a Surgical Standpoint. W. J. Mayo, Rochester, Minn.
- 77 Is There Such a Disease as Neurasthenia? W. Browning, Brooklyn.
- 78 Psychology of Tuberculosis. W. H. Kidder, Oswego.
- 79 *Care and Treatment of Epileptics. W. T. Shanahan, Sonyea.
- 80 Importance of an Early Diagnosis in Abnormal Pelvic Conditions. M. Gage-Day, Kingston.
- 81 *The Vein Sign in Abdominal Inflammations. W. W. Skinner, Geneva.
- 82 Old Truths About Infant Feeding Worth Repeating. C. G. Leo-Wolf, Niagara Falls.
- 83 Fibroid Uterus Didelphys. J. B. Conant, Amsterdam.
- 84 *Use of Antitoxin in Asthma. H. R. Parker, Barneveld.
- 85 Gunshot Wounds of the Abdomen. T. Wright, Buffalo.
- 86 Importance of Recognition and Treatment of Adenoids. A. H. Paine, Caledonia.
- 87 Relation of the General Practitioner to Refraction of the Eye. T. H. Farrell, Utica.
- 88 Typhoid Resulting in Death from Unusual Complication with Masked Symptoms. A. B. Sullivan, Liberty.

76. Also published in *St. Paul Medical Journal*, January, 1910.

79. **Care and Treatment of Epileptics.**—It is Shanahan's opinion that in brain tumor and traumatic cases of epilepsy, patients who are operated on early, before several seizures have occurred to produce permanent damage, may be benefited in many instances. Careful after-treatment with sedation when indicated is of the utmost importance. But, he says, the epileptic is too frequently a degenerate with an abnormal nervous system which cannot be readjusted and made anew by operative procedure. The congenital defect is beyond renovation by surgical skill. A regular occupation, preferably out of doors, is essential for the able-bodied epileptic. Special instruction in the ordinary school branches and especially in manual training, should be arranged for the younger patients. This is important to inculcate discipline as well as for the knowledge acquired. There is no specific medication to be used in epilepsy, although the proper use of the bromin preparations approaches this in selected cases. Bromids should be given early and continued over a period of years. If a maximum continued dose of from 75 to 90 grains during the twenty-four hours does not control the seizures in an adult, it is not wise, in the average case, to push the drug beyond this point. The elimination of sodium chlorid

from the diet aids materially in producing the full effect of the bromids. When associated cardiovascular conditions exist, digitalis, strophanthus, amyl nitrate, nitroglycerin, etc., prove of value. Shanahan finds that strychnin can be used without fear as a stimulant or tonic when indicated. Investigators have claimed much benefit resulting from the giving of calcium lactate, but a series of patients at Craig Colony to whom it was administered, failed to show much change, except one boy whose condition did improve some. The treatment of serial seizures, status epilepticus and the various mental disorders accompanying epilepsy is of great importance. Avoidance of constipation, proper exercise, a carefully regulated diet and frequent bathing are of the utmost value as prophylactic measures.

When status epilepticus is once established, the gastrointestinal tract must be emptied thoroughly by cleansing enemata and by stomach tube. Then chloral or amylene hydrate by enema should be used judiciously to control the convulsions. The bromids are of but little value in this condition. Chloroform may be given in the early stage until some chloral has been absorbed. Lumbar puncture to relieve this supposed increased intracranial tension may be used in severe cases. Venesection is used in plethoric individuals. Cold sponges or packs are of great value to control the temperature which may be elevated to 107 or 108 F. For stimulation when required, Shanahan has found enemata of strong black coffee and hypodermatic injections of brandy and aromatic spirits of ammonia to act very well. After the convulsions have ceased, a supportive diet and careful nursing are all-important. He warns that pneumonia and bed sores must be watched for. For the mental disturbances close supervision, nourishing food, due attention to the emunctories and hydrotherapy are sufficient. The diet in epilepsy may be fairly liberal, avoiding an excess of meats and all pastries, sweets, etc. Some patients do better without any meat; cooked cabbage and cauliflower are to be avoided. The food must be well masticated, not bolted. For chronic cases in which there is an organic basis, the individual should be placed in the special institution where with his fellow sufferers he may lead as cheerful an existence as his condition will permit. He can have regular and congenial occupation, and recreation with a suitably arranged simple life with avoidance of all undue excitement. Epilepsy is essentially a chronic disorder, consequently treatment must be continued over a long period of years and in all instances a closely regulated mode of living must be maintained throughout the remainder of life. Shanahan presents a few charts which illustrate clearly how many defectives propagate and why their marrying should be systematically discouraged.

81. Vein Sign in Abdominal Inflammations.—In one of his earlier operations for appendicitis Skinner observed, in making the incision near McBurney's point, that the subcutaneous and deeper veins presented a dark and swollen appearance. In the next case, he was aided in making the diagnosis in the presence of rather obscure symptoms of general abdominal pain, vomiting, and little, if any, localized muscular rigidity, by carefully observing the conditions of the superficial abdominal veins. Since then he has never attempted any operative procedure on the appendix, or indeed in any inflammatory intra-abdominal conditions, without subjecting the subcutaneous veins to the most careful scrutiny in a good light with the skin gently stretched in successive areas. Repeated and careful observations, extending now over a period of more than nineteen years, have convinced Skinner that this venous darkening furnishes one of the most valuable and accurate localizing signs in intra-abdominal inflammation; a sign incapable of stimulation and independent in its records and manifestations alike of systemic, nervous and psychic conditions. He has also noted this sign in ulcerative conditions of the sigmoid flexure; in inflammations of the Fallopian tube and of other tissues and structures enclosed in its broad ligament; in cases of septic collections or pus-pools in Douglas' cul-de-sac; and in acute inflammations of the pelvis of the kidney or ureter.

84. Antitoxin in Asthma.—Although convinced that antitoxin gives some positive relief in asthma, Parker also feels

that there is a large psychical element involved, and he has ceased to use antitoxin.

Yale Medical Journal, New Haven

December

- 89 Infantile Paralysis. J. G. Stanton, New London, Conn.
- 90 Id. L. F. Wheatley, Meriden, Conn.
- 91 A Case of Irregular Micturition. J. L. Buttner, New Haven, Conn.
- 92 Treatment of Infection Following Abortion, Miscarriage and Labor. C. A. Monagan, Waterbury, Conn.
- 93 Surgical Treatment of Gastric and Duodenal Ulcers. E. J. McKnight, Hartford, Conn.
- 94 Treatment of Fractures. G. W. Hawley, Bridgeport, Conn.
- 95 Principles of Intracranial Surgery. W. F. Verdi, New Haven.

Laryngoscope, St. Louis

January

- 96 Surgical Consideration of Tumors of the Larynx. J. F. Erdmann, New York.
- 97 *Analgesia of the Larynx by Alcohol Injection of the Internal Branch of the Superior Laryngeal Nerve. A. Lewy, Chicago.
- 98 Non-Suppurative Ethmoiditis. G. P. L. Marquis, Chicago.
- 99 Nasal Polypi. C. C. McCullough, Fort William, Ontario.
- 100 General Anesthesia in Operations in the Pharyngeal Region and About the Neck. M. Metzenbaum, Cleveland, Ohio.
- 101 A Modified Aural Speculum Especially Adapted for Incision of the External Canal. D. C. Smyth, Boston.

97. Analgesia of Larynx by Alcohol Injection.—Lewy describes a practical method for the relief of the pains in some cases of tuberculosis of the larynx which he has employed successfully in three cases. The injection is made directly through the skin of the neck. From 0.5 to 2 c.c. of 75 per cent. alcohol (with or without 1 per cent. cocain), warmed a little above body temperature is injected at a sitting. The patient's head is inclined to the side opposite the one to be injected; the skin, previously shaved, if necessary, is cleansed with alcohol; the operator's left hand grasps the larynx to steady it and hold it prominently under the skin of the side to be injected, in such a way that the thumb is on the uninjected side while the left index-finger seeks the comparatively tender point where the internal branch of the superior laryngeal nerve penetrates the thyrohyoid membrane, a point about half-way between the upper border of the thyroid cartilage and the hyoid bone, and about a centimeter in front of (mesially from) the superior cornu of the thyroid cartilage. The index-finger is held firmly in place while the needle is inserted at the point marked by the center of the nail to a depth of 1 to 1.5 cm. perpendicularly to the surface. If the nerve has been accurately located, this insertion will cause a pain radiating characteristically toward the ear. However, the injection may be made in this locality, drop by drop (after the pain caused by the insertion subsides), until the original pain ceases or until the full amount (2 c.c.) is used. The injection may be repeated next day, if necessary. In Lewy's cases there was no loss of the cough reflex or aspiration of food, which could be taken with comfort following the injection. An ordinary hypodermic syringe may be used, but a special obturator needle is perhaps preferable. No after-treatment is required. The puncture may be sealed with collodion if desired.

St. Paul Medical Journal

January

- 102 *Diseases of the Stomach and Duodenum from a Surgical Standpoint. W. J. Mayo, Rochester, Minn.
- 103 Ophthalmic Migraine. C. E. Riggs, St. Paul.
- 104 The Climate of Minnesota. H. L. Taylor, St. Paul.

102. Also published in *New York State Journal of Medicine*, January, 1910.

Medical Fortnightly, St. Louis

January 10

- 105 So-Called Chronic Rheumatism—Chronic Fibrositis: Treatment. M. Packard.
- 106 Salvarsan in Syphilis. J. L. Boehm, St. Louis.
- 107 Cause and Cure of Ingrowing Toe-Nail. C. C. Miller, Chicago.
- 108 Surgical Eponyms. M. Hagen, Chicago.

Alabama Medical Journal, Birmingham

December

- 109 Cesarean Section: Report of Seven Cases with Loss of Mother or Child. E. M. Prince, Birmingham.
- 110 Bismuth Paste in Thoracic Empyema. G. A. Hogan, Birmingham.
- 111 Home Treatment of Tuberculosis and Use of Tuberculin. C. M. Nice, Birmingham.
- 112 Ovarian Cystadenoma Weighing Seventy Pounds—Removal and Recovery. E. M. Robinson, Birmingham.

Albany Medical Annals

January

- 113 Public Health and Municipal Authorities. E. H. Porter, New York.
114 Public Health and the Municipal Authorities from the Standpoint of the Municipal Officer. C. C. Duryee, Schenectady, N. Y.
115 *Management of Pneumonia. R. W. Wilcox, New York.

115. **Management of Pneumonia.**—Success in the management of pneumonia, according to Wilcox, depends on the following points: 1. It is as important to know what sort of an individual has the disease as what disease he is suffering from. 2. No one has ever treated a "case of pneumonia" but a person suffering from this disease. 3. All therapeutic measures must be considered broadly as to method, remedy, disease and patient. Taking all into consideration, the treatment of pneumonia is especially satisfactory. Wilcox relies on: (1) The continuous, persistent and generous administration of creosote carbonate; (2) careful adjustment of mechanical conditions; (3) thorough evacuation of toxins by all possible means; (4) supplemental oxygen by inhalation, when required; (5) liquid diet until all physical signs disappear.

Interstate Medical Journal, St. Louis

January

- 116 Present Status of the Noguchi Method of Serodiagnosis of Syphilis. H. Noguchi, New York.
117 Means of Finding the *Spirochæta Pallida* by the India-Ink Method. J. S. Cohn, Chicago.
118 History and Methods of Application of Salvarsan. L. H. Marks, Frankfurt, Germany.
119 Syphilis of the Nervous System. E. Jones, Toronto.
120 Treatment of Syphilis with Salvarsan. A. L. Wolbarst, New York.
121 Recent Progress in Treatment of Syphilis. H. Hallopeau, Paris.
122 Giant Cells in Syphilis. J. A. Fordyce, New York.
123 Salvarsan. B. C. Corbus, Chicago.
124 The Public and Syphilis. I. Dyer, New Orleans.
125 Syphilis and Pulmonary Tuberculosis. R. H. Babcock, Chicago.
126 Syphilis as a Cause of Pauperism. A. Ravogli, Cincinnati.
127 Sanitary Supervision of Prostitutes. P. A. Morrow, New York.
128 The Scaphoid Seapula Syndrome; Its Connection with Syphilis in the Ascendants. W. W. Graves, St. Louis.

Pennsylvania Medical Journal, Athens

January

- 129 Venereal Affections Considered as Epidemic Diseases. J. F. Schamberg, Philadelphia.
130 Prophylaxis of Venereal Disease. M. F. Gates, Philadelphia.
131 *Prophylaxis of Gonorrhea. M. F. Gates, Philadelphia.
132 *Abortive Treatment of Gonorrhea. M. Brooks, Philadelphia.
133 *Treatment of Acute Gonorrhea. W. F. Donaldson, Pittsburg.
134 *Diagnosis and Treatment of Chronic Gonorrhea. T. L. Disque, Pittsburg.
135 *Clinical Experience with the Antigonococcus Serum and Vaccines in Gonorrhea and Its Complications. W. H. MacKinney, Philadelphia.
136 *Gonorrhea and Marriage. G. A. Holliday, Pittsburg.
137 *Enuresis from Thyroid Insufficiency. E. B. McCready, Pittsburg.
138 Herpes Zoster Ophthalmicus. E. E. Wible, Pittsburg.
139 *Method of Preserving Eyes which Are Usually Removed. E. L. Jones, Cumberland, Mo.

131, 132, 133, 134, 135 and 136. Abstracted in THE JOURNAL, Nov. 19, 1910, pp. 1838 and 1839.

137. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1671.

139. **Method of Preserving Eyes.**—Jones describes the method of injecting cyanid of mercury, 1 in 1,500, first advocated by Darier in 1903.

Louisville Monthly Journal

January

- 140 Acute Pulmonary Edema. J. A. Flexner, Louisville.
141 Organic Diseases of the Cardiovascular System. W. F. Bog-gess, Louisville.

Therapeutic Gazette, Detroit

January

- 142 *The Prophylaxis of Gonorrhea. M. F. Gates, U. S. Navy.
143 *Treatment of Acute Gonorrhea. W. F. Donaldson, Pittsburg, Pa.
144 *Gonorrhea and Marriage. G. A. Holliday, Pittsburg, Pa.
145 Treatment of Ascites by the Intraperitoneal Injection of Adrenalin. T. M. Tyson and H. D. Jnmp, Philadelphia.
146 Salvarsan. M. Silverberg, San Francisco.

142, 143 and 144. Abstracted in THE JOURNAL, Nov. 19, 1910, pp. 1838 and 1839; 142 and 143 are same as 131 and 133 above.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

January 14

- 1 *Surgical Treatment of Displaced Semilunar Cartilages of the Knee. D. Power.
2 *Conservative Surgery of the Nose. W. Stuart-Low.
3 Connection of Enlarged Cervical Glands with Carious Teeth, Enlarged Tonsils and Adenoids. H. Osborne.
4 *Draughts and Colds. R. C. Macfie.
5 Biologic and Statistical Errors in the Work on Parental Alcoholism by Miss Elderton and Prof. Karl Pearson. M. D. Sturge and Sir V. Horsley.

1. **Treatment of Displaced Semilunar Cartilages.**—When the patient is seen directly after the injury, Power says, every care should be taken to replace the injured cartilage in position by well-considered manipulation. Rest in an extended position must be insisted on until the swelling has subsided and time has been given for repair, massage being employed during the whole of this period. It must be borne in mind that no satisfactory result will be obtained if the injury be treated simply as a sprain by rest and cooling lotions. It is essential that the cartilage should be replaced, for otherwise it is useless to rest the joint as it would be to rest an unreduced dislocation. When these methods have failed, or when the original condition has been badly treated, and the patient is left with a chronically inflamed joint, which is insecure, painful and locking, the sooner an arthrotomy is performed and the interarticular cartilage is removed the better it will be for the patient. Power's inquiries show that the least satisfactory results are obtained when the patient has been allowed to go about with a damaged fibrocartilage for months or years, the best results when he has had only a few attacks of painful fixation of a joint. In these latter cases the ligaments have not become stretched, and the joint quickly resumes all its normal functions.

2. **Conservative Surgery of the Nose.**—The most beneficent surgery of the nose, Stuart-Low holds, is the most conservative as regards the preservation of the mucous lining, and is almost always attained by operating successfully in stages, rather by what he calls physiologic, than by severe, sweeping, sacrificial surgery.

4. **Draughts and Colds.**—The conclusion reached by Macfie is that draughts do occasionally play an auxiliary part in the production of colds, but that they are easily deprived of their dangers, and should be favored rather than feared. To endeavor to escape colds by avoiding all draughts must always be futile and foolish policy, and will not only defeat its own aim by fostering bacteria and by promoting vasomotor lethargy and incompetence, but will lead to deficient vigor through interference with skin reflexes, which play an important part in the respiratory and circulatory functions. When we wish to excite the respiratory center of the new-born babe we appeal to its skin reflexes, and in cases of night sweats a breeze on the skin seems to give tone to the whole vasomotor system. The skin is certainly meant to be exposed to moving air currents and to vicissitudes of heat and cold; it is meant to have a blood-supply that ebbs and flows according to the thermal needs of the tissues; it is meant to perspire and to transpire; and accordingly to shut it off from wind currents and to enclose it in a motionless layer of moist air is, Macfie declares, to depart very far from the ways of physiologic righteousness. The bracing effects of dry air and of seaside breezes are largely due to their stimulating effects on the excretory and reflex functions of the skin; and the man who endeavors to avoid colds by avoiding all draughts, will not only catch more than his share of colds, but will possess much less than his share of health and vigor.

Lancet, London

January 14

- 6 *Influence of Parental Alcoholism on the Physique and Ability of Offspring. T. B. Hyslop.
7 Sepsis and Antisepsis in Medicine. W. Hunter.
8 *Subtotal Hysterectomy for Fibromyoma Uteri. A. H. G. Doran.
9 *Gangrene of Limb During Convalescence from Diphtheria. A. S. Ransome and E. M. Corner.

- 10 Importance of Removing the Uterus in Certain Diseased Conditions of the Ovaries and Fallopian Tubes. J. M. M. Kerr.
- 11 The Association of Duodenal Uleer with Disease of the Appendix. H. J. Paterson.
- 12 *Treatment of Disseminated Sclerosis. E. F. Buzzard.
- 13 Torsion of the Left Broad Ligament and Fallopian Tube in a Child. M. A. Cassidy.
- 14 Massive Infarction of the Renal Cortex. J. A. Torrens.

6. Influence of Parental Alcoholism.—The theory discussed by Hyslop briefly stated is: Does parental alcoholism (of a pernicious kind)—apart from parental degeneracy, which, together with a tendency to alcoholism, is heritable—influence the physique and ability of offspring? He says that the association—in contra-distinction to causation—of alcoholism and degeneration in the parent is insufficiently understood, and the difficulty in distinguishing between cause and effect, both in the parent and offspring, is so great that the decision frequently must be mere guesswork. The present problem requires that parental alcoholism shall precede conception or the birth of the child; whereas, in the transmission of a psychoneurosis by direct inheritance, the parental alcoholic tendency may be latent, and not come into evidence until after the birth of the child. This necessitates complete differentiation between the two series. Alcoholism would appear to be responsible for a relatively greater number of births than would health or degeneracy without alcoholism, and there appears to be some evidence derived from experiments on animals treated by alcohol that their young, although in greater number, were much weaker. Epilepsy, some forms of insanity, defective inhibition and mental enfeeblement, deaf-mutism and stunted growth, although instances of what has been aptly termed the “general controlling determinant,” and transmitted by direct heredity, are apt to be not only intensified in the offspring, but make their appearance at a relatively earlier age, when parental alcoholism has been an additional factor. Parental alcoholism appears to accentuate the downward trend of inherited psychoneurosis, and with each successive generation the period of exemption from alcoholism and degeneracy becomes shortened, so that the offspring become alcoholic or degenerate at relatively earlier ages. Alcohol would in this way act as a complementary factor to parental degeneracy, and aid in the devolution of the stock. The inheritance of psychoneurosis (which would tend to diminish in severity with each successive generation, and with the introduction of new correcting influences through marriage) becomes intensified and prolonged when alcoholism becomes a complicating factor. In this way, the psychoneurosis is kept alight through a greater number of generations.

8. Subtotal Hysterectomy for Fibromyoma Uteri.—To the sixty cases previously reported, Doran adds forty—making a total of 100 cases. In forty cases, or 40 per cent., both ovaries were removed, and the menopause was neither immediate, nor complete in four; in three out of four the amputation was above the os internum. In thirty-nine cases, or 39 per cent., one ovary was saved, and the menopause was neither immediate nor complete in twenty-one; in eighteen out of the twenty-one the amputation was above the os internum. In twenty-one cases, or 21 per cent., both ovaries were saved. The menopause was neither immediate nor complete in eight; in seven, possibly all, of the eight the amputation was above the os internum.

9. Gangrene in Diphtheria.—Nine cases of gangrene of parts distant to the disease, such as a limb, following diphtheria, were found by Ransome and Corner recorded in the literature. The gangrene in these cases was connected with a definite vascular lesion. In seven cases the lesion was a definite embolism; in one it is termed Raynaud's disease, and in two the origin is obscure. In no less than six out of the nine cases the leg was affected; in one there were, in addition, widespread gangrenous lesions. In two other cases there was a widespread necrotic affection. Thus it would appear that in six out of the nine cases the gangrene was due to a vascular lesion, and that in two it was due to a vascular lesion with the addition of an infective or septic character in the embolus. In only one case, that here recorded, was the diphtheria treated with antitoxin. The majority of the patients were children. The origin of these emboli seems to be in the auricles, particularly the left auricle, because in only one

case was there also a pulmonary embolism. The embolus occurs during convalescence, at the time of reaction from the illness; in the authors' case on the seventeenth day of the illness. It seems to occur only after a severe diphtheritic attack. Subsequently to the embolism the temperature rose to 99.8 F. from subnormal, to which level it subsided, rising again in a few days' time from septic absorption from the gangrenous part.

12. Treatment of Disseminated Sclerosis.—The resemblance between cerebrospinal syphilis and disseminated sclerosis led Buzzard to suspect that the latter disease may be caused by some organism belonging to the same class as that of the treponema. The fact that this class of organism is best combated by mercury or arsenic induced him to commence the tedious experience of treating a few selected patients with disseminated sclerosis by repeated courses, or nearly continuous administration, of arsenic, on the same principle as that which makes the repeated administration of mercury the only effective method of preventing attacks of cerebrospinal syphilis in syphilitics. So far as the experiment has gone, there is nothing to show that it is useless, but Buzzard does not claim any success on the material at present available. He asks for cooperation.

Dublin Journal of Medical Science

January

- 15 Treatment of Fractures by Ancient and Modern Methods. W. I. de C. Wheeler.

Journal of Laryngology, Rhinology and Otology

January

- 16 Partial Petro-Mastoid Excavation with Preservation of the Tympanic Membrane and Ossicles. G. Mahu.

Annals of Tropical Medicine and Parasitology, Liverpool

December

- 17 *Enumerative Studies on Malarial Fever. R. Ross and D. Thomson.
- 18 A Case of Hemoglobinuric Fever (Blackwater Fever) Followed by a Peculiar Relapse Without Hemoglobinuria or Detectable Plasmodia. R. Ross, D. Thomson and G. C. E. Simpson.
- 19 *Hemoglobin Metabolism in Malarial Fever. G. C. E. Simpson.
- 20 *A Case of Sleeping Sickness. V. T. Korke.
- 21 Malaria in Relation to Splenic Enlargement and the Treatment of the Crescentic Stage. N. F. Surveyor.
- 22 *Peculiar Morphology of a Trypanosome from a Case of Sleeping Sickness and the Possibility of Its Being a New Species (*T. rhodesiense*). J. W. W. Stephens and H. B. Fantham.
- 23 *Pathogenicity of a Trypanosome from a Case of Sleeping Sickness Contracted in Rhodesia. W. Yorke.
- 24 Three New Species of the Genus *Glossina*, Together with a Description of the Hitherto Unknown Male of *Glossina Grossa*, Bigot. R. Newstead.
- 25 *Descriptions of a New Genus and Three New Species of Anopheline Mosquitoes. R. Newstead and H. F. Carter.

17. Studies on Malarial Fever.—It is believed by Ross and Thomson that there is a very decided correlation between the number of asexual plasmodia found in the peripheral blood and the fever. As a rule, no fever exists unless the asexual forms exceed some hundreds per cubic millimeter. The asexual forms do not always disappear between relapses (as often thought) but tend to persist in small numbers per cubic millimeter, and often increase again for some days before the actual febrile relapse occurs. These observations give a coherent theory of the malarial invasion, according to which the infection is kept alive indefinitely by the ordinary sporulation of the asexual forms, and not by parthenogenesis or by resistant forms; and fever occurs only when the parasites are numerous enough to produce it. The authors estimate from their cases that considerable continued doses of quinin reduced the asexual forms by from 50 to 80 per cent. There are strong reasons for supposing that the sexual forms require eight to ten days for development; that the often noticed long persistence of crescents is not due to their long life, as generally thought, but to constant replenishments of the stock by fresh broods; that they sometimes show a distinct tertian periodicity; and that quinin does not affect them when once generated, but ultimately reduces their numbers by destroying the generating cells. The sexual forms were never seen to produce fever. The leukocytes are below normal during febrile periods and above normal afterward. The percentage of mononuclears rises after paroxysms and is always in excess of the normal. Methylene blue, soamin, Roentgen rays and

faradic and galvanic currents had no results in a few experiments. The hemoglobin falls markedly with fever, but rises rapidly with convalescence. The fecal urobilin shows marked correlation with the occurrence of fever.

19. Hemoglobin Metabolism in Malarial Fever.—Simpson summarizes his paper as follows:

1. The main excretory channel for the pigment portion of the blood is the alimentary tract, and urinary urobilin represents only a small overflow from this source; the main elimination is in the feces, and this has been largely neglected by previous observers, in favor of the urinary overflow, which, however, would seem to be of importance only as an indication of the absorptive activity of the intestine and almost negligible for quantitative purposes.

2. The fall in the hemoglobinometer readings in malaria appears to represent an actual destruction of red corpuscles and elimination of their pigment by the normal excretory mechanism.

3. The hemoglobin breakdown during the pyrexia due to the malignant tertian (*P. falciparum*) infection appears to be greater than in other pyrexial diseases or than in benign malaria (*P. vivax*), and may be many times greater than would be accounted for by the number of corpuscles infected by the parasites.

4. As regards their effect of causing hemolysis, the parasites appear to be of different degrees of virulence in different individuals, and even in different paroxysms in the same individual (relatively at least, since the patient's resistance must be considered).

5. Normally, the ordinary channels of excretion are capable of dealing with the free hemoglobin and rapidly remove it from the blood-stream, and a very severe strain (over 25 per cent. of the total circulatory hemoglobin) can be sustained without their failure and the consequent onset of hemoglobinuria.

20. Sleeping Sickness.—The observations made in this case by Korke show that the coagulation time of the blood is passing from the negative to the positive phase as the leukocytosis is passing toward leukopenia. The number of the parasites and the nature of the hemoglobin index are subject to very little variation. Examinations of the cerebrospinal fluid and blood for trypanosomes were negative, but albumoses were found in the cerebrospinal fluid, not in the blood. The urine during life was examined for albumose. The reaction was negative; later, in the preserved specimen of urine, albumose was again found to be absent. The patient had a large collection of pus in the pleural cavity, consequently the possibility that the albumose was due to empyema was thus eliminated by the result of the blood and urine examinations. So that although the cerebrospinal fluid was tinged with blood, the process of exclusion leads to the conclusion that albumose was present in the cerebrospinal fluid only. The test used for cholin was that of Mott and Halliburton, viz., the production of characteristic octohedral crystals in the platinum double salt from the alcoholic extracts of the cerebrospinal fluid. The result was positive. Control tests were made with the 15 per cent. alcohol and absolute alcohol used in the original test, but these were negative. Cholin was absent in the blood. The brain tissue was examined by Korke. The perivascular spaces around the blood-vessels in the substance of the brain were infiltrated with mononuclear leukocytes, chiefly lymphocytes. This change is typical of the sleeping-sickness brain where the infection is due to *T. gambiense*. The infiltration was not enormous.

22. Morphology of a Trypanosome From a Case of Sleeping Sickness.—The peculiarity of this Rhodesian trypanosome discovered by Stephens and Fantham is that among the stout or stumpy forms, some have the nucleus at the posterior (non-flagellar) end. They have never found them, though persistently looked for, in the films from the same animals infected with the laboratory strain of *T. gambiense*, treated in the same way, i. e., dried films. Further, they have examined the new trypanosomes by *intra vitam* staining with methylene blue; by this method the posterior position of the nucleus can be seen. Finally, they have fixed wet films with sublimate-alcohol and with osmic vapor respectively, and subsequently stained them with hematoxylin, and found the same forms. They also attach some importance to the fact that the patient from whom this strain was derived was never, as far as careful enquiries could elicit, in a *Glossina palpalis* area, but had been in many *Glossina morsitans* areas, and very probably in a small *Glossina fusca* area. On account of its peculiar morphology features, the authors propose a distinct designation as *T. gambiense rhodesiense* or *Trypanosoma rhodesiense*.

23. Pathogenicity of a Trypanosome From a Case of Sleeping Sickness.—Yorke's observations as to the morphology of the parasite confirm those of Stephens and Fantham regarding the existence of posterior nuclear forms in infected rats, guinea-pigs and rabbits. He has not, however, succeeded in

finding these forms in the blood of the patient himself, in spite of very careful daily examinations during a period of over three months.

25. A New Genus and Three New Species of Anopheline Mosquitoes.—This new genus is the dactylomyia. The head is clothed with upright forked scales; the palpi are rather densely scaled. There is a distinct and very pronounced cylindrical-shaped tubercle or finger-like process projecting obliquely from the prothoracic region, mid-way between the dorsum and venter, and arising from the anterior margin. Thorax and abdomen are clothed with hairs. The wings are covered with dense lanceolate scales. Judging by the character and distribution of the scales, this genus comes near *Anopheles*; but owing to the remarkable structures mentioned above it is easily distinguishable from any other known genus of the *Anophelinae*. Three species are described by Newstead and Carter: (1) *Dactylomyia Ceylonica*; (2) *Pyretophorus cardamatisi*; (3) *Cellia cineta*.

Practitioner, London

January

- 26 Neurasthenia and Associated Conditions. F. W. Mott.
- 27 Neurasthenia and Drugs. D. Ferrier.
- 28 Traumatic Neurasthenia. W. Harris.
- 29 Neurasthenia and Eye-Strain. E. Clarke.
- 30 Neurasthenia and Gastralgia. R. A. Fleming.
- 31 Neurasthenia in Children. C. Riviere.
- 32 The Sexual Element in the Neurasthenia of Men. G. Holmes.
- 33 The Sexual Element in the Neurasthenia of Women. H. MacNaughton-Jones.
- 34 Mental Therapeutics in Neurasthenia. H. C. Thomson.
- 35 Neurasthenia and Insanity. A. F. Tregold.
- 36 Neurasthenia and Movable Kidney. C. W. Suckling.
- 37 Neurasthenia Minor. P. C. C. Smith.
- 38 The More Certain Control of Traumatic Neuroses. T. A. Williams.
- 39 Neurasthenia and Diet. D. N. Paton.
- 40 The Educational Treatment of Neurasthenia. F. Beach.
- 41 Treatment of Neurasthenia by Rest, Diet and Massage. C. W. Buckley.
- 42 Electrical Treatment of Neurasthenia. S. Leduc.
- 43 Climatic, Balneotherapeutic and Sanatorium Treatment of Neurasthenia. N. Wood.
- 44 Treatment of Neurasthenia by Physical Methods. J. A. Riviere.
- 45 Treatment of Neurasthenia by Hypnotism and Suggestion. C. L. Tuekey.

Journal of Tropical Medicine and Hygiene, London

January 2

- 46 *Zambesi Ulcer. W. J. Bruce.
- 47 Isolation of a Parathyroid Bacillus from a Drinking-Water Supply. A. May.
- 48 Filaria Loa. G. C. Low.

46. Zambesi Ulcer.—The main points about this ulcer according to Bruce are:

- 1. It is found, with rare exceptions, in one part of the body—below the knee.
- 2. It is usually single, rarely double, and more rarely in the form of two, or perhaps three, small ulcers on the same leg.
- 3. It does not spread, but exhibits immediate sloughing of the area attacked, remains a week or more and then heals by granulation.
- 4. It produces no constitutional disturbances nor enlargement of the lymphatic glands.
- 5. It is invariably associated with the presence of a spirillum and a large fusiform bacillus.

It is said that one attack gives considerable protection but not complete immunity, as years later the same person may develop mild small ulcers. It is said also to be met with only in the flat grass lands, such as the Zambesi delta, but this statement is not reliable.

Annales de l'Institut Pasteur, Paris

November, XXIV, No. 11, pp. 833-920

- 49 Experimental Research on Epidemic Poliomyelitis. (Maladie de Heine-Medin.) K. Landsteiner and C. Levaditi.
- 50 Antianaphylaxis. (Le procédé des petites doses et les injections subintrantes.) A. Besredka.
- 51 Method of Preserving Plague-Infected Organs for Examination. (Procédé de conservation des organes pesteux pour le diagnostic.) C. Broquet.
- 52 Relation Between Fowl and Mammalian Tuberculosis. (Rapport entre la tuberculose aviaire et celles des mammifères.) D. A. de Jong.
- 53 Eighth Antimalaria Campaign in Algiers. E. Sergent.

Presse Médicale, Paris

January 4, XIX, No. 1, pp. 1-8

- 54 Auto-Intoxication with Intestinal Obstruction. H. Roger.
- 55 Apparatus for Chloroform Anesthesia. P. Fredet and E. Merry.

January 7, No. 2, pp. 9-16

- 56 Methylene Blue in Treatment of Malta Fever. V. Audibert and Rouslauroix.
- 57 Structure and Development of Connective Tissue. J. Jolly.

Semaine Médicale, Paris

January 4, XXXI, No. 1, pp. 1-12

- 58 Presence of Blood Pigments in Urine in Malaria. (Nouveau signe pathognomonique du paludisme.) C. L. Urriola.

January 11, No. 2, pp. 13-24

- 59 Allowing Parturients to Get Up Early. (Le lever précoce des nouvelles accouchées.) R. de Bovis.

Archiv für Kinderheilkunde, Stuttgart

LIV, Nos. 4-6, pp. 241-484. Last indexed Nov. 12, 1910, p. 1769

- 60 *Amyotonia Congenita. (Myatonia congenita von Oppenheim.) J. P. C. Griffith (Philadelphia) and R. Lewin.
61 Viscosity of Blood in Healthy and Sick Infants. F. Lust.
62 *Diagnosis and Epidemiology of Pulmonary Tuberculosis in Children. K. E. Ranke.
63 Use or Harmfulness of Bacteria in Intestinal Tract. (Bedeutung der Bakterien im Intestinaltractus. Infection und Sterilisation desselben.) P. S. Medowikow.
64 *An Epidemic of Poliomyelitis. (Steiermarkische Poliomyelitis-epidemie im Jahre 1909.) K. Potpeschnigg.
65 Influence of the Dwelling on Development of the Child. (Einfluss der Wohnung auf die Entwicklung.) E. Gindes.

60. Abstracted in THE JOURNAL, May 21, 1910, p. 1712.

62. **Pulmonary Tuberculosis in Children.**—Ranke has had about four thousand children under continuous observation during the last three years in his work as school inspector and physician to the tuberculosis dispensary, and he has thus been able to trace the course of pulmonary tuberculosis in them and to correct mistaken impressions. He learned that apical catarrhal processes in children have nothing to do with tuberculosis. When they are of a tuberculous nature, they are merely one manifestation of a generalized tuberculosis. With the latter it is often the only sign indicating involvement of the bronchial glands, aside from radiography. This point, he says, is very important. Mild generalized tuberculosis is so frequent in children and so often runs a favorable course without any treatment, that its differentiation is imperative from the graver, pulmonary form which always requires strict measures and years of treatment. Apical symptoms, therefore, he declares, must be estimated entirely differently as they are observed in children and in adults. True pulmonary tuberculosis in children scarcely ever affects the apices first. He seldom if ever found associated chronic bronchial catarrh with pronounced phthisis in children. When bronchial catarrh occurs, it runs its course the same as in the non-tuberculous. In young children the glands and serous membranes are the seat of the tuberculous processes while in adults the lungs are the main site; these two forms of the disease do not blend into each other, he says, but are separated by a striking gap in the mortality curve. They actually seem almost two separate diseases, or more like the three phases of syphilis. The generalized form runs its course and heals, leaving a kind of immunity, though some minute focus may persist whence the bacilli may pass into the blood later. The lungs, the great blood filter, are especially endangered by this irruption of the bacilli into the blood, and after a period of weakness and anemia with occasional febrile attacks—the picture characteristic of the insidious form of a relatively mild generalized tuberculosis—a process like that in the lungs of adults may develop as adult age is reached.

Tuberculosis in any form in children should be combated, he declares, along the same lines as in adults. But scarcely a step has been taken in this direction. In the great world movement against the white plague only a few isolated pediatricists have taken part; and yet this is particularly the work of pediatricists, Ranke declares. Not only the theoretical solution for the problem of the origin of tuberculosis lies in the child material but also a large part of the practical success of the movement. The hygienic and other measures introduced into Germany in the last few years have reduced the adult mortality from pulmonary tuberculosis amazingly, he remarks, but it is equally surprising that the mortality from tuberculosis in children has shown practically no decline during this period. In some of the states it has even increased. Pediatricists are confronted here by a task which is no less important than the reduction of infant mortality from gastrointestinal disease. Under modern hygienic conditions tuberculous adults live longer and thus the period in which they can infect others has been lengthened. Tuberculosis in children can be prevented only by removing children from contact with the tuberculous family or by isolating the tuberculous member of the family in an institution. Neither can be realized at present,

Ranke remarks, and it is the task of pediatricists to rouse the public to the necessity for these measures and to select the children who need treatment out of the millions already infected. Such children tire easily, show a moderate anemia, positive tuberculin reaction and higher temperature after playing and after retiring. In normal children the rectal temperature is not over 37.5 C. (99.5 F.); if it is above this figure over long periods, and other causes can be excluded, the child is ill and probably tuberculous. Small cheesy glands are responsible for the temperature in these cases. Careful supervision will reveal occasional sudden intercurrent attacks of fever for a day or for two or three days, resembling the tuberculin reaction. It may be impossible to detect any local manifestations. In many cases of ephemeral fever in children, an insidious generalized tuberculosis may be incriminated. The glands in the neck swelled in three of his cases in less than four weeks after infection and remained enlarged for nearly two years. Glands once the seat of a tuberculous process may subside to normal size but generally are unusually hard, and are adherent to the surrounding tissues, while recently infected glands are movable. The hilus glands may also subside after having been enlarged, but they cast a shadow with radiography thereafter into adult life; such shadows, therefore, are not necessarily a sign of an active tuberculous process.

64. **Acute Poliomyelitis.**—Potpeschnigg states that about 600 cases of acute anterior poliomyelitis developed in 1909 in the Steiermark district which has a population of 1,750,000. Question blanks were sent to all the medical men in the district and 235 returned them, bringing out a number of important points in regard to the disease. The onset frequently was not accompanied by fever, but when there was high fever sweats were common. Sore throat was almost constantly observed as a prodromal symptom. Sharp pains in the breast were also noted in some cases. In others the first sign of trouble was intense pain in one limb and when the paralysis developed, this limb was first affected. On suspicion of the disease, the child should be kept in bed. He relates several instances of serious trouble following premature use of the limbs in what promised to be otherwise mild forms of the disease. The patients should be kept unconditionally in bed for weeks even in the mild cases, and brief active movements commenced gradually and with extreme caution. He illustrates by a number of examples the fact that even the absence of fever and pain and subjective disturbances is no guarantee that the disease has been arrested or run its course. No benefit was observed from lumbar puncture in his experience but no harm resulted. Occasionally the paralysis disappeared abruptly, but never could any connection between this and any special measures be detected. He begins cautiously with faradization and massage two or three weeks after the acute process has begun to decline. Plaster and other splints were applied to prevent secondary contracture from preponderance of the muscle antagonists. The limbs were also placed so as to prevent passive overstretching of the paralyzed groups of muscles. The deltoid is generally the muscle most affected and to prevent overstretching he has the arm placed over the head during the night. In prophylaxis some recommend throat and mouth sprays and gargles with from 1 to 3 per cent. hydrogen dioxid. In scarcely any other disease, he adds, is it possible for the patient and his environment to render so much more favorable the final outcome of the disease. If the paralyzed patient is allowed to lie still in bed undisturbed, and nothing is done but a little faradization and massage, complete atrophy and secondary contracture are almost inevitable, but suitable measures to combat this tendency, energetically and perseveringly applied, accomplish wonders even in the most apparently hopeless cases. Intelligent cooperation on the part of the patient is a great aid in this respect. It was found that several cases retrospectively diagnosed had occurred in the district previous to the 1909 epidemic. The incubation was as long as five, six and ten days in some instances. The mortality was 7.51 per cent. in the younger children and 24.25 per cent. over the age of 14. Death was the result of paralysis of the muscles of respiration. Anatomic research shows that islands of normal tissue may be found in the apparently totally paralyzed muscle, or there may be paralyzed patches in nearly normal muscles.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXXI, No. 1, pp. 1-316

- 66 *Present Status of Transplantation of Living Human Bone. E. Streissler.
67 Meckel's Diverticulum in Congenital Inguinal Hernia. Schede.
68 Cause of Congenital Torticollis. (Entstehung des angeborenen muskulären Schiefhalses.) H. Schloessmann.
69 Alkaptonuria a Degeneration from Inbreeding. (Ueber Ochro-nose.) H. Kolaczek.

66. Present Status of Transplantation of Living Human Bone.—This article of 208 pages is a summary of this subject from its early history to date. Extensive experimental research is also reported.

Berliner klinische Wochenschrift

December 19, XLVII, No. 51, pp. 2330-2380

- 70 *Chronic Duodenal Ulcer. E. Melchior.
71 *Relations Between Tumors in Female Genital Apparatus and Diabetes Mellitus. F. Hirschfeld.
72 *Leprosy and Cancer. M. Sjøegaard.
73 *Importance of Antitrypsin Reaction in Diagnosis and Prognosis of Cancer. A. Pinkuss.
74 Treatment of Progressive Paralysis with Sodium Nucleinate. J. Donath.
75 Physiology of Respiration. (Neue Untersuchungen zur Physiologie der Lungenatmung.) A. Loewy.
December 26, No. 52, pp. 2381-2412
76 Case of Splenomegaly, Left Hydronephrosis and Carcinoma of Ureter. J. Israel.
77 *Relations Between Status Lymphaticus and Addison's Disease. F. v. Werdt.
78 Metastatic Gonorrheal Conjunctivitis. W. Rusche.
79 Vestibular Nerve Symptoms in Disease of the Internal Ear. (Vestibuläre Reiz- und Ausfall-Erscheinungen bei Labyrinth-erkrankungen.) I. Herzfeld.
80 Oil Suspension of Salvarsan. (Ein 40 proz. Dioxydiamidoarsenobenzol-Oel.) C. Schindler.
81 Action of Injections of Metallic Mercury. E. Richter.
82 Principles for Treatment of Placenta Prævia. E. Runge.

70. Chronic Duodenal Ulcer.—Melchior is inclined to believe that chronic duodenal ulcer is the result of a predisposition and that it is useless to excise the ulcer as the conditions inducing the predisposition remain after excision. The best means of treatment is to exclude the entire duodenum; this is effectually done by a gastro-enterostomy if the pylorus is closed at the same time; if the pylorus persists permeable the operation does not remedy conditions. He reports the details of four typical cases to illustrate the benefit that will follow treatment on these principles. Even with fulminating hemorrhage from a chronic duodenal ulcer, it is better, he says, to avoid any direct operative procedure on the ulcer itself. The gastro-enterostomy permits complete exclusion of the duodenum; with gastric ulcer the region can never be so completely excluded. Cancerous degeneration of a duodenal ulcer is extremely rare, he declares. He even advocates gastro-enterostomy as a prophylactic measure, not waiting until the surgeon's hand is forced. Although the affection may seem harmless yet it is a Damocles' sword hanging over the patient's head, perforation peritonitis or severe hemorrhage being liable to occur at any moment. This does not of course refer to the ecchymosis or hemorrhagic erosions of the duodenum liable to follow amputations; he has observed this in three cases and has found records of nine others. The trouble in these cases is probably the result of minute arterial emboli; in every case there was a suppurating focus elsewhere. In no instance, however, he adds, has a chronic duodenal ulcer been traced to an accident of this kind in the past. It always seems to be due to some reduction of the vital resisting power of the duodenal wall in respect to the peptic action of the gastric juice. This assumption is confirmed by the frequent multiplicity of such tumors and their association with gastric ulcers.

71. Genital Tumors and Diabetes.—Hirschfeld reports two cases in which diabetes preceded or accompanied uterine fibromyoma and cites four others from the literature. In three of the cases the diabetes retrogressed or became attenuated after removal of the tumor. In his clinical experience diabetes in women under 50 has run a more rapid course than in men and after 50 a much slower course. The conditions with an accompanying genital tumor are much the same as with pregnancy. The rapidly growing tumor may cause changes in the organs concerned in the carbohydrate metabolism; the influence of menstruation can be detected and also the lessening of the hemorrhage from the tumor on an antidiabetic diet.

72. Cancer in Lepers.—Sjøegaard has studied the records of the leper asylums in Norway and found only nineteen deaths from cancer in the 2,269 deaths recorded, that is, only 0.84 per cent., while the cancer mortality in the population at large was 3.5 per cent. in 1865; 5.1 per cent. in 1880; 7.5 per cent. in 1897; and 8.5 per cent. in 1906. The lepers in Norway are isolated.

73. Antitrypsin Reaction in Diagnosis of Cancer.—Pinkuss states that the reaction was positive in nearly 94 per cent. of ninety-eight patients with certain cancer and he thinks that it can be accepted as a valuable sign of the presence of cancer and as an index of the results of operative treatment, radiotherapy, fulguration, etc. The technic is that described by Brieger, Marcus and Trebing. B. Fränkel, von der Heide and Krösing have also reported from 90 to 100 per cent. positive reactions with the method. The test is based on the fact that normal blood-serum contains sufficient antibodies to inhibit the digestive action of a 1 per cent. solution of trypsin on the Loeffler plate in the proportion of 1 to 3. This inhibiting power is materially increased in cancer patients, ranging between 1 to 10 and 1 to 20. It was described in THE JOURNAL, July 4, 1908, page 83. Pinkuss found that the test was liable to fail after excessive losses of blood, and he warns that it is a biologic reaction which should be estimated in connection with the clinical picture as a whole.

77. Relations Between Addison's Disease and the Status Lymphaticus.—In v. Werdt's two cases pronounced hypoplasia of the chromaffine system accompanied the typical Addison's disease, while the lymph glands were enlarged.

Deutsches Archiv für klinische Medizin, Leipsic

CI, Nos. 3-4, pp. 209-420. Last indexed January 28, p. 311

- 83 Metabolism of Matter and Energy During Fever. (Stoff- und Kraftwechsel im Fieber.) E. Grafe.
84 Formation of Blood in Spleen and Liver After Posthemorrhagic Anemia. (Zur Frage der extramedullären Blutbildung bei posthämorrhagischen Anämien.) A. Skornjakoff.
85 Pulse and Respiration-Rate. (Studien über Puls und Atmungsfrequenz.) K. v. Korosy.
86 *Changes in Gastric Mucosa with Acute Infectious Diseases. (Veränderungen der Magenschleimhaut bei akuten Infektionskrankheiten.) E. Jerusalem.
87 *Tryptophan Test and Acetic-Acid Test in Early Diagnosis of Gastric Cancer. H. Oppenheimer.
88 *Inhibiting Influence of Emotions on Gastric Secretion. (Nem-mende Einfluss der Psyche auf die Sekretion des menschlichen Magens und seine Bedeutung für die diagnostische Verwertbarkeit des Probefrühstücks.) K. Grandauer.
89 Functioning of Diseased Kidneys. W. Schlayer and Takayasu.
90 Direct Injury from Extreme Tachycardia. K. F. Wenckebach.
91 Histology of the Intestines with Pernicious Anemia. L. Aschoff.

86. Changes in the Gastric Mucosa During Acute Infectious Diseases.—Examination of the bodies of persons dying from acute infectious diseases showed invariably serious pathologic conditions, mostly an interstitial gastritis with proliferation of connective tissue. Whooping-cough with complicating bronchopneumonia was the only disease in which the changes were merely a slight interstitial degeneration. Jerusalem examined the cadavers twenty-four hours after death, and remarks that the pathologic conditions found readily explain the lack of appetite, vomiting, etc., observed in acute infectious diseases.

87. Early Diagnosis of Gastric Cancer.—Oppenheimer reports the findings with Neubauer and Fischer's glycytryptophan test constantly negative in five normal persons, in twelve with gastric ulcer and in seven with non-malignant stomach troubles, while the findings were constantly positive in six cases of certain cancer in the stomach and in three clinical cases while they varied in the suspects. In only one case were the findings contradictory of the clinical history. (The test was described in THE JOURNAL, Jan. 1, 1910, page 86.) It is evidently not infallible, as even this one case shows, but positive findings are certainly strong evidence in favor of presumptive cancer. Acetic acid, Oppenheimer adds, can also be used to differentiate cancer. Forty minutes after the Boas test breakfast some stomach content is withdrawn and a 3 per cent. solution of acetic acid is added a drop at a time to a few cubic centimeters of the filtered gastric juice. In case of the presence of cancer the fluid turns turbid and persists turbid

even when the fluid is diluted with water to five times its volume. The turbidity vanishes, however, if large amounts of acetic acid or a little hydrochloric acid are added. The only source of error seems to be the presence of mucus, as this also produces turbidity when the acid is added. But the turbidity from this cause does not clear up on addition of hydrochloric acid while it vanishes when the fluid is much diluted. If the filtrate of stomach content is very turbid to start with, the test is not applicable, but it is generally possible to obtain a limpid filtrate by slowly filtering the fluid through a moistened folded filter. The tryptophan and acetic-acid tests paralleled each other with precision in his experience, but the latter test is more reliable, he thinks, as the findings are not affected by the presence of blood, trypsin or bacteria, while the acetic-acid technic can be applied to vomitus as well as to siphoned-out stomach content. The findings were constantly negative in seven healthy persons, in twenty-four with gastric ulcer and hyperacidity and in nine with non-malignant stomach affections while they were positive in all the cancer cases except one in which the findings with the tryptophan test likewise contradicted the clinical course.

88. Inhibiting Influence of Emotions on Gastric Secretion.—One practical point brought out by Grandauer is that the gastric secretions are influenced, often to an unsuspected extent, by the mind during the process of the test meal and obtaining stomach content for examination. He found that the findings differed widely on different examinations, the fluctuations growing less and less marked as the individuals became accustomed to the procedures involved. The psychic hypersecretion or hyposcretion may nullify the conclusions to be drawn from the findings; even the psychic difference between taking the arbitrary test meal and an ordinary meal may have a marked influence.

Deutsche medizinische Wochenschrift, Berlin

January 5, XXXVII, No. 1, pp. 1-48

- 92 *Injury of the Eye. (Pathologie und Therapie der Verletzungen des Auges.) A. Elschmig.
- 93 A Post-Mortem Auscultation Phenomenon. H. E. Hering.
- 94 *Antiphlogistic Action of Lime. (Entzündungswidrige Wirkung löslicher neutraler Kalksalze.) H. Leo.
- 95 *Nutrient Intravenous and Subcutaneous Injection of Sugar. (Intravenöse und subkutane Ernährung mit Traubenzucker.) W. Kausch.
- 96 Scrum Sickness. J. v. Bokay.
- 97 Salvarsan. K. Kreibich.
- 98 Herpes Zoster After Injection of Salvarsan. S. Bettmann.
- 99 Paralysis of Ocular Muscles After Salvarsan. C. Stern.
- 100 Carcinomatous Meningitis. M. Lissauer.
- 101 Importance of Corpus Luteum for Periodicity of Sexual Cycle in Mammals. L. Loeb.
- 102 Clinical Importance of Diathermia. F. Nagelschmidt.
- 103 Medical Education in the United States and Canada. C. Bäumler.
- 104 Quadricentennial of Ambroise Paré. W. Haberling.

92. Injury of the Eye.—Elschnig presents the general principles in treatment of trauma of the eye, remarking in regard to the prognosis that all nervous disturbances in the orbit resulting from pressure of extravasated blood in the region are capable of complete retrogression, while direct lesions of the nerves usually persist unchanged. Special care must be taken to prevent the drying or ulceration of the cornea when the eyeball protrudes or the lids do not close perfectly. If inflammation develops in the orbit from infection from the nose, the prognosis is almost inevitably bad. Emphysema, on the other hand, has an excellent prognosis. Treatment of all fractures deep in the orbit should be exclusively conservative. With much suppuration a compressing bandage, ice-bag and complete repose may be indicated. Only with extreme protrusion of the eyeball or very severe emphysema is it necessary to relieve by evacuation of the blood at the most swollen part of the orbital tissue. Direct operative measures are necessary if there is a fracture of the walls of the orbit with dislocation. Compound fractures should be treated by the usual surgical principles. Elschmig adds, in conclusion, that in every extensive compound fracture of the orbit, as also in every case of extensive injury of the soft parts in which contamination with soil cannot be absolutely excluded, a preventive injection of tetanus antitoxin should be given.

94. Antiphlogistic Action of Lime.—Leo expatiates on the importance of the statements of Chiari and Januschke in

regard to the power of a neutral solution of lime salts to prevent the development of pleural effusions and edema in general. (Their statements were summarized in THE JOURNAL Dec. 10, 1910, page 2102.) Subcutaneous injection of a few cubic centimeters of a 5 per cent. solution of calcium chlorid proved able to prevent the development of inflammatory edema in the conjunctiva of the rabbit's eye after instillation of mustard oil. They explained this hitherto unknown powerful action of calcium chlorid by assuming that the lime rendered the vessel walls less permeable. Leo has been repeating their experiments, his results confirming theirs in every particular. He has further demonstrated that 1 c.c. of a 2.5 per cent. solution of calcium chlorid can be injected subcutaneously into man without any local or general harm resulting. Chiari and Januschke used the intravenous route without by-effects, but Leo found the results less prompt and reliable than after subcutaneous injection. The effect was even more pronounced by the mouth than by intravenous injection, probably because the lime is eliminated too rapidly after the latter. The action is slower by the mouth than by subcutaneous injection, but 100 c.c. of a 2 per cent. solution of calcium chlorid given by the mouth cured the rabbit's conjunctivitis in six days, by the end of the week the eye appearing entirely well. He and others have repeatedly taken this dose without disturbances. His experiences further show that instillation of the same solution has a surprisingly curative action on conjunctivitis. As no unfavorable action from the instillation of 100 c.c. of a 2.5 per cent. solution of calcium chlorid in the rabbit was perceptible, he thinks that this measure can be applied in the eye clinic. A typical experiment was instillation of a drop of mustard oil in one eye; three hours later when the conjunctiva and skin around showed intense inflammation, a few drops of the calcium chlorid solution were instilled several times in the course of five minutes. Three hours later the swelling had considerably subsided, while in the control animal it was still intense. The solution was then instilled again and the next morning the lids of the control animal were firmly glued together and secreting thick pus, the conjunctiva swollen and red, and the cornea turbid. The animals treated with lime had much improved and in two days there was scarcely a trace of the inflammation, while it persisted in the control animals with great intensity and was perceptible six weeks later. Repeated series of experiments gave the same results and he regards the discovery of this local antiphlogistic action as of great importance. He thinks that it may prove useful in tonsillitis, rhinitis, gastritis or ulcer and inflammation of other mucous membranes. Other neutral soluble salts of calcium may prove effectual, particularly the lactate. Calcium chlorid may be found useful in rectal injection for enteritis, in a 1 or 2 per cent. solution; calcium carbonate has already been advocated for this purpose.

95. Nutrient Intravenous and Subcutaneous Injection of Sugar.—Kausch reports that his extensive research for some means of feeding otherwise than by the mouth has shown that grape sugar can be given in a 10 per cent. solution by intravenous injection and by subcutaneous infusion up to 5 per cent., to a daily dose of 1,000 c.c. This nourishes the patient while supplying fluids and he has found it extremely useful as a postoperative measure. He commends it as an important adjuvant in surgical affections and in cholera, uncontrollable vomiting and other troubles, draining the body of fluids.

Jahrbuch für Kinderheilkunde, Berlin

December, LXXII, No. 6, pp. 661-782

- 105 *Immunity to Scarlet Fever. F. v. Szontagh.
- 106 *Scarlet Fever. (Zur Kenntnis des Scharlachs.) A. Gigon.
- 107 Bacteriologic Study of Infants' Stools. K. Blühdorn.
- 108 *Orthostatic Albuminuria. (Zur Lehre von der lordotischen Albuminurie.) A. Lury.

105. One Attack of Scarlet Fever Does Not Confer Immunity.—Szontagh has one patient who has had scarlet fever three times in less than three years. Each time it ran a typical course without complications. Another little girl had scarlet fever twice in one year, succumbing to the complications of the second attack. The mother had suppurative tonsillitis during the child's first attack and typical scarlet

fever along with the second attack. A Budapest physician who had charge of the scarlet-fever ward for five years, and had never had any eruptive fever except erysipelas at the age of 12, developed scarlet fever himself at the age of 41, a year after giving up his charge of the contagious ward, although he had not seen a case of scarlet fever for twelve months. Another Budapest physician died on the fifth day of an attack of scarlet fever acquired at 42, although he had been repeatedly in contact with scarlet-fever patients during his entire practice. These and other facts cited seem to demonstrate that scarlet fever does not confer immunity and that the causal germ is ubiquitous. The sore throat and eruption are manifestations of the action of toxins, not the foci of infection. The prevailing theory as to the etiology of scarlet fever can no longer be maintained, Szontagh declares, and he adds that the prophylactic measures at present in vogue have no value. The conditions are far more complex than we have hitherto assumed; possibly, he says, the study of anaphylaxis may throw light on the problem.

106. **Scarlet Fever.**—Gigon reviews the experiences with 453 cases of scarlet fever at the Basel contagious service since 1907. Twenty-nine of the patients were between 20 and 50; the mortality was 1.77 per cent., but all in children. The child of a mother with scarlet fever was born with the disease. In seventeen cases the scarlet fever developed after trauma—severe burns in twelve of the cases. A recent Zurich thesis also reports six cases of severe burns among twenty cases of traumatic scarlet fever. Although Gigon kept the children in the hospital ten weeks and every precaution was taken to prevent the infection of others, yet there were five return cases. The third week seems to be the period of special predisposition for lymphadenitis, nephritis and post-scarlatinal fever and heart trouble. Scarlatinal rheumatism was observed almost exclusively in adults. In three cases fatal pneumonia developed during the third week. In three cases the nephritis persisted for over seven months, and in two cases uremia developed; great improvement was observed in one of these cases after venesection. In three instances the children in a family developed hemorrhagic nephritis at the same date in the disease; in three other instances, otitis on the same date, and in another family two sisters developed scarlet fever the same day and both developed severe jaundice during the fifth week. It was generally noticed that the course of the disease seemed of the same character in all the children from a family. Varicella in connection with scarlet fever was unusually severe but other eruptive diseases ran an unmodified course. In seven cases the disease was an actual scarlatinal diphtheria, in one scarlatinal croup with typical false membranes, but no diphtheria bacilli could be cultivated from the throats.

108. **Orthostatic Albuminuria.**—The experiences reported by Lury confirm the assumption that induced lordotic albuminuria and possibly also lordotic or orthostatic albuminuria occur only when the kidney is abnormally movable. He experimented with 100 children, having them stand for five minutes in moderate lordosis after the urine had been found to be free from albumin. In thirty-six of the children albuminuria resulted. Other experiments confirmed the assumption of the connection between movability of the kidney and the transient albuminuria.

Medizinische Klinik, Berlin

January 1, VII, No. 1, pp. 1-44

- 109 *Diabetes Mellitus. C. v. Noorden.
- 110 *Cancer of the Uterus. (Kampf gegen den Gebärmutterkrebs.) F. Schauta.
- 111 Salpingitis After Abortion. (Zur Frage der Selbstinfektion.) L. Aschoff.
- 112 Abdominal Pain. (Die Schmerzempfindung innerhalb der Bauchhöhle und ihre Bedeutung für die Diagnose.) M. Wilms.
- 113 Ileus from Dilatation of Gall-Bladder. W. Anschütz.
- 114 *Hereditary Displacement of the Patella. (Erbliche angeborene Kniegelenkverrenkung.) L. Wrede.
- 115 Functional Capacity and Oxygen Requirement with Maximal Physical Labor. (Leistungsfähigkeit und Sauerstoffbedarf bei maximaler Arbeit.) N. Zuntz.
- 116 Capacity and Weight of Lungs and Heart in the Horse. M. Müller.

109. **Diabetes.**—Von Noorden states that the liver is evidently the source of sugar production, and that this function is controlled by the pancreas and the suprarenals—the pancreas

inhibiting sugar production and the suprarenals stimulating it. The pancreas in turn is under the control of the thyroid, the secretion of which has an inhibiting action on the functioning of the pancreas as is shown in the increased tendency to glycosuria with thyroid hyperfunctioning. After thyroidectomy, the pancreas exerts such a strong inhibitory action on the liver that it is almost impossible to induce glycosuria. The hypophysis cerebri seems to have the same action on the pancreas as has the thyroid; with tumor of the hypophysis there is remarkable tolerance for large amounts of sugar. The suprarenals are under the control of the sympathetic nervous system and are very sensitive to the action of certain toxins. Formerly it was assumed that the glycosuria resulting from puncture of the medulla ("sugar puncture") was due to direct stimulation of the liver from the central nervous system, but recent research has demonstrated that this stimulation is transmitted by the left sympathetic nerve and at first to the left suprarenal, whence the stimulation is forwarded to the right suprarenal by the connecting nerves. If the left suprarenal is cut off from the left sympathetic nerve, no glycosuria follows the sugar puncture. Puncture of the medulla stimulates the suprarenals to greater secretion, and this secretion in turn stimulates the liver to an excessive output of sugar. A number of toxic influences act in the same way, partly by the influence on the sugar center in the medulla, partly by stimulation of the sympathetic nerve or the suprarenals thus causing exaggerated functioning which entails overproduction of sugar in the liver. These facts, v. Noorden says, explain the influence of the central nervous system on the intensity of diabetic glycosuria and show the necessity for studying each individual case with special care, and the importance of warding off emotional stress and injurious nervous and toxic influences. He is convinced that there is no disease in which physicians neglect to such an extent this individual study of the patient as in diabetes. There is no other affection, he declares, which is so rich in complications of all kinds, whose treatment requires such comprehensive regard for all the organs and their functional capacity and which makes such high demands on the individualistic estimation of the details and of the whole clinical picture. In regard to dietetic treatment, he says that diabetics must resign themselves to watch carefully over every mouthful they take and that this must be kept up indefinitely. It is especially hard for them as they do not feel ill. No drug can take the place of restriction of carbohydrates in the diet, and the benefit claimed for certain remedies is always due to the dietetic regulations imposed with them. The physician treating a diabetic in 1911 must keep long years to come constantly in view, and not let himself be deterred from his plan of treatment by the momentary complaints of the patient or his family.

110. **Uterine Cancer.**—Schauta states that for the last ten years he has been systematically operating by the vaginal route in all cases of uterine cancer in order to obtain a reliable set of statistics. His mortality was at first 10 per cent., but in his later series this has been reduced to 4 per cent.; the operability was between 50 and 60 per cent.; the permanent cures average between 40 and 50 per cent., while the permanent "absolute cures" have been 13 per cent., 15 per cent. in recent series and the proportion will be still higher next year as he will have 28 per cent. with an interval of over four years since the operation. In from 10 to 15 per cent. of his total material the physician first consulted neglected gynecologic examination, and this is where improvement must come in the future. The physician must absolutely refuse to have anything to do with the case unless the woman applying for any gynecologic trouble at the cancer age will permit local examination. If he gives her any advice or writes a prescription the woman is satisfied with the "treatment" and does not return for weeks or months, and then she is lost. He insists that hemorrhage during the climacteric period should never be ascribed to the influence of the menopause until all other causes for it have been scrupulously excluded. He states that it is far better to examine ninety-nine women needlessly than to let cancer in the hundredth escape detection in time. The fear of

cancer in the public should not deter from this course; a woman can be relieved of this fear in a few hours by going to a physician for examination if she is free from malignant disease while the physician can assure her that she can be cured if he discovers an incipient cancer. He adds that surgeons have come to the limit of technical skill; the burden of the campaign against uterine cancer rests now on the shoulders of the general practitioner and the public.

114. **Hereditary Displacement of the Patella.**—In the family described by Wrede, bilateral luxation of the patella was observed in the grandfather, in the father, in his sister and one of his five brothers, and in the son and daughter.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

December, XXXII, No. 6, pp. 641-754

- 117 Pregnancy in a Dwarf. (Fall von hypoplastischem Zwergwuchs mit Gravidität nebst Bemerkungen über die Aetiologie des Zwergwuchses.) B. Aschner.
- 118 *Status Epilepticus and Pregnancy. E. Sachs.
- 119 Gas in the Uterus. (Zur Lehre von der Tympania uteri.) H. Rimann.
- 120 Subcutaneous Symphyseotomy and Suprasymphyseal Delivery. (Ueber den subcutanen Symphysenschnitt und die suprasymphyseale Entbindung.) F. Frank.
- 121 Postoperative Protection of Abdominal Cavity. H. Sellheim.
- 122 Pseudomyxoma in Peritoneum After Appendicitis. H. Cramer.
- 123 Radioactive Ferments in Treatment of Inoperable Cancer. A. Sticker and E. Falk.
- 124 Local and Spinal Anesthesia in Gynecology. G. A. Wagner.

118. **Status Epilepticus and Pregnancy.**—Sachs reviews the literature on this subject and reports the case of a woman with a tendency to epilepsy since puberty as also her two sisters. The sisters have been healthy since their marriage and have borne healthy children, but Sachs' patient found the epilepsy aggravated by her first pregnancy, so that violent seizures recurred every day. After failure of other measures, premature delivery was induced with the inflatable bag, after incision of the cervix, the uterus being emptied immediately after the cervix was sufficiently dilated. Hemorrhage was arrested by the Momburg belt constriction but the woman died without regaining consciousness. Necropsy showed none of the changes in the internal organs characteristic of eclampsia. Sachs is convinced that the measures adopted did harm rather than good; the long-continued irritation from the method of delivery and other measures kept up a constant stimulation of the cortex contrary to the general principles imperative in treatment of epilepsy. Possibly better results might have been obtained if the uterus had been emptied rapidly by vaginal Cesarean section. Only two cases are on record, he says, in which the intensity of the status epilepticus developing in pregnancy equaled that in his patient. Differentiation from eclampsia is difficult, and he thinks that some cases on record may have been mistaken for eclampsia. He has been unable to find any record of a case of status epilepticus or epilepsy in any form in which the patient was cured by interruption of the pregnancy. The aim should be to ward off everything that might irritate the central nervous system. If delivery is urgent, the shortest technic should be employed. The history, epileptic equivalents, possibly knowledge that the bromids have been abruptly suspended, may give the clue to the epilepsy, while an unusually low freezing-point of the urine and hyperleukocytosis suggest eclampsia. He emphasizes the importance of differentiating them as the treatment is diametrically opposite for the two affections. Pregnant women with a history of epilepsy should have their bodily functions supervised with exceptional care, the bromids should never be abruptly suspended, and excesses of all kinds should be avoided. Albuminuria is the rule in eclampsia to such an extent that the lack of it has caused some writers to dispute the diagnosis in otherwise apparently typical eclampsia. At the same time, repeated epileptic seizures are liable to induce albuminuria.

Münchener medizinische Wochenschrift

January 3, LVIII, No. 1, pp. 1-64

- 125 *Salvarsan: Retrospect and Outlook. (Salvarsantherapie.) P. Ehrlich.
- 126 Digipuratum. R. Gottlieb and R. Tambach.
- 127 Technic for Treatment of Cleft Palate and Harelip. (Behandlung der mit Wolfsrachen komplizierten einseitigen Hasenscharten.) B. Riedel.
- 128 *Siphonage of Stomach Content Through the Nose in Peritonitic Ileus. M. Kappis.

- 129 Four Cases of Sepsis from Friedländer Bacillus. F. Rolly.
- 130 *Recurrence of Syphilis in Nervous System After Mercurial Treatment. (Syphilitische Neurorezidive.) J. Benario.
- 131 Intrathoracic Goiter. S. Kreuzfuchs.
- 132 *Injurious Action of Pure Oxygen on the Lungs. (Zur Chloroformsauerstoffnarkose.) A. Schmidt and O. David.
- 133 *Butenko Reaction in Urine in Paralysis. P. Beisele.
- 134 Technic of Carbon Dioxid Snow Treatment of Skin Disease. (Technik der Kohlensäureschneebehandlung.) A. Strauss and H. Fründ.

125. **Retrospect and Outlook for Salvarsan Therapy.**—Ehrlich here reviews the subject to date saying that his preliminary connection with the drug is now practically closed. He regards his method of distributing the drug for extensive investigation by leading medical men as the only proper method of introducing a new drug. He states that he never claimed that the drug would cure in a single dose, and he also insists that the cases in which the drug has been applied contrary to the indications he so carefully specified should not be placed to its discredit. He compares it to chloroform; in the healthy not more than one fatality is known in 50,000 applications of chloroform, while this proportion increases to 1 in 2,070 for the average hospital material, and the proportion is far higher in heart disease. The few bladder disturbances that have been reported are probably traceable to defective vials with oxidation of the drug by contact with air, the resulting compound being much more toxic than the salvarsan. He discusses in detail the cases reported by Benario and others in which the recurring manifestations of the syphilis were in the optic or auditory nerve and he relates a number of instances in which similar recurrences in the nervous system have been observed after mercurial treatment or without any treatment. The chief argument against their being results of toxic action from the salvarsan is that they were rapidly cured by salvarsan; if the salvarsan had been responsible, another dose of the drug would have aggravated the lesion. The only case of blindness reported from it was in Finger's patient, whose case was mentioned in THE JOURNAL, Jan. 7, 1911, page 83, but this patient had within the year been given thirty injections of arsacetin in addition to other arsenical medication. Ehrlich had previously warned against giving the salvarsan to any patient who had been taking any arsenical preparation. He regards these recurrences in nerves as a sign that the spirochetes elsewhere have been practically exterminated and that this was their last refuge. The sterilization had been almost complete, and a dose of salvarsan rapidly cured seven of Benario's ten patients in whom these recurrences developed after mercurial treatment alone. In conclusion, Ehrlich says, that salvarsan has won a permanent place for the treatment of syphilitic mouth and throat affections and those of the nasal mucosa, the cutaneous syphilids of the secondary and tertiary phases, "galloping" syphilis and congenital syphilis and the cases refractory to mercurial—for all these salvarsan has proved itself the most powerful weapon, uniting, he asserts, the action of mercury and iodid, while surpassing both in the reliability and rapidity of the effect.

128. **Retention Stomach Tube in Peritonitic Ileus.**—THE JOURNAL, April 9, 1910, page 1244, mentioned Westerman's method of continuous siphonage of the stomach content by a stomach tube introduced through the nose, and Kappis here relates a number of experiences with this measure which confirm its clinical value. A broad, soft stomach tube slips easily through one nostril down into the stomach and it is left there, the stomach contents being readily siphoned out. In peritonitic ileus the vomiting and hiccough stop at once and the patient can drink freely. Some of the fluid thus passing through the stomach is probably absorbed, especially an alcoholic or sugar solution, while the abdomen is left in peace and is relieved of the pressure of the filled stomach. This siphonage by the nose has been applied in ten cases of severe peritonitic ileus in his service with the best results. If it does not succeed, enterostomy is indicated without too long waiting, for fear of decubitus in the esophagus from the stomach tube. He found such at necropsy in one case in which the tube had been left in the esophagus for forty-eight hours. Since then he never leaves it more than twelve hours at a time, reintroducing it if necessary. The measure is also urgently indicated, he declares, in postoperative obstruction

of the duodenum, in acute dilatation of the stomach, and in gastric succorhea.

130. See abstract No. 125.

132. **Chloroform-Oxygen Anesthesia.**—Schmidt and David describe research on mice which shows that breathing air containing over 90 per cent. oxygen induces changes in the lungs similar to the picture of croupous pneumonia. The same changes were induced in guinea-pigs with from 40 to 60 per cent. oxygen, and they think that there is no doubt that the oxygen has an unmistakably injurious action on the bronchial and alveolar epithelium. This property of oxygen has not been regarded sufficiently hitherto; they think that there seems to be some analogy between it and caisson disease.

133. **Specific Urine Reaction in Paralysis.**—Beisele found Butenko's reaction positive in twenty-five out of twenty-seven cases of paralysis, that is, in 94 per cent. The reagent is a solution of mercurous nitrate in water with a little nitric acid, the combination known as liquor Bellostii. The reaction was never positive in seventy-three other patients examined.

Therapeutische Monatshefte, Berlin

December, XXIV, No. 12, pp. 669-762

- 135 *Treatment of Exophthalmic Goiter. (Zur Behandlung der Basedowschen Krankheit.) W. Ebstein.
136 *Advantages of Dry Treatment of Leukorrhea. (Behandlung des Fluor albus.) W. Liepmann.
137 Veronal in Treatment of Seasickness. (Seekrankheit und Veronal.) E. Schepelmann.
138 Pharmacologic Tests for Atropin, Physostigmin and Pilocarpin. J. Pohl.
139 Cause of Therapeutic Action of Electric Currents. P. Steffens.

135. **Treatment of Exophthalmic Goiter.**—Ebstein reports four new cases to show the remarkable benefit liable to follow the cure of severe chronic constipation in cases of exophthalmic goiter. In one of the cases all the symptoms subsided and there has been no recurrence during the fifteen years since. The constipation in all these cases yielded only to persevering, systematic injections of oil. The diarrhea with exophthalmic goiter may also yield to injections of oil. He is convinced that auto-intoxication from chronic constipation is liable to have an injurious influence on the thyroid, and when the source of these toxins is dried up by the cure of the tendency to constipation, the disturbances resulting from the pathologic thyroid functioning are liable to subside with it. His patients were women between 18 and 47 years old.

136. **Treatment of Leukorrhea.**—Liepmann has obtained better results in treatment of leukorrhea since he has discarded lavage and merely applied an absorbent powder after sponging the vagina dry. Nassauer has long been proclaiming the advantages of bolus alba for the purpose on account of its absorbent properties.

Wiener klinische Wochenschrift, Vienna

January 5, XXIV, No. 1, pp. 1-42

- 140 Photodynamic Action of Fluorescent Substances. II. H. Pfeiffer.
141 *Experiences with Tuberculin Treatment. J. Sörgo and E. Suess.
142 Dispensary Tuberculin Treatment. (Tuberkulindiagnostik und ambulatorische Tuberkulinbehandlung.) M. Laub.
143 *Lordotic Albuminuria and School Hygiene. L. Piesen.
144 Generalized Herpes Zoster. G. Nobl.
145 Diagnosis of Sporadic Cases of Cholera. (Zur Verwendung der Blutplattenmethode und der Komplementbindungsreaktion in der Diagnose sporadischer Cholerafälle.) M. Gioseffi.
146 Diet and Kitchen from Chemical, Physical and Physiologic Standpoints. W. Sternberg.

141. **Tuberculin Treatment.**—Sörgo and Suess are in charge of the Alland sanatorium and they have had such favorable experiences with tuberculin treatment that they hope to see it become a routine measure in the hands of the general practitioner. The patients must be warned that they may be obliged to spend a few days in bed when the reaction is unusually severe, and patience and perseverance are required by both the physician and the patient. There is no doubt, they declare, that tuberculin is an important weapon against pulmonary tuberculosis. They usually begin with 0.000001 or 0.00001 gm. but they warn that it is folly to waste time with doses below those which the patient can tolerate; it is necessary to begin with the smallest doses in some cases, but with a little experience it is possible to select those in which larger doses can be commenced from the first.

143. **Lordotic Albuminuria.**—Piesen found that the children inclined to lordotic albuminuria developed it when they were obliged to sit with their arms crossed behind them, a frequent school attitude. Study of the subject in a large number showed that this attitude has a directly injurious influence on the kidney and is liable to induce albuminuria. The predisposition to lordotic albuminuria seems to be more pronounced, the taller the child for its age. The facts observed confirm Lury's assumption that movability of the kidney is the decisive factor in lordotic albuminuria.

Zeitschrift für Urologie, Berlin

December, IV, No. 12, 897-1036

- 147 Technic for Pyelolithotomy. S. P. v. Federoff.
148 Partially Intraligamentary Developed Bladder. J. Voigt.
149 Congenital Cysts in Genital and Perineal Regions. C. Gutmann.

Zentralblatt für Chirurgie, Leipsic

January 7, XXXVIII, No. 1, pp. 1-32

- 150 *Autodrainage for Elephantiasis, Etc. (Eröffnung neuer Abfuhrwege bei Stauung in Bauch und unteren Extremitäten.) O. Lanz.
151 *Transplantation of Nerve from One Side to the Other. (Nervenüberpflanzung von der einen Seite auf die entgegengesetzte.) D. Maragliano.
152 Femoral Hernia. (Zur Radikaloperation der Schenkelhernie.) A. Hammesfahr.
153 *Subungual Hematoma. G. v. Lobmayer.

150. **Autodrainage for Elephantiasis from Congestion of Lymph.**—Lanz was able to obtain a complete cure in the case of a man of 49 whose right leg had been gradually enlarging in size for five years, without pain, the disfigurement and discomfort resulting from the enormous size of the entire limb incapacitating the patient at times. Lanz kept the man in bed for ten days with the limb raised, and then incised the thigh down to the bone and bored into the femur at the lower, middle and upper thirds. He then cut some narrow strips from the fascia lata and worked them into the three holes drilled in the bone, his aim being to induce a collateral circulation of lymph, opening a passage from the subcutaneous lymphatics into the intramuscular, subperiosteal and marrow network of lymph vessels. Before suturing he made also a number of openings for drainage through the fascia lata. The silk suture the length of the thigh may also have contributed to the result. Relief was immediate and permanent. Now, three years later, no difference is apparent between the right and left leg, except that the skin of the right thigh seems a little thicker than the other. The fascia lata is an absolute barrier for the lymph routes, and by artificially opening passages through this barrier the whole trouble was cured. If the desired effect had not been attained he had intended to connect the lymphatics in the thigh with those of the seminal cord, pushing the latter over to the fossa ovalis.

151. **Transplanting the Femoral Nerve to the Other Side.**—Maragliano implanted a branch of the left femoral nerve in the totally paralyzed right femoral nerve in the case described. The patient was a child of 2 with total paralysis of the right leg from acute poliomyelitis nearly a year before. Arthrodesis at the hip-joint, knee and ankle would have been necessary to enable the child to walk, but excellent functional results were obtained by drawing the isolated branch of the left femoral nerve through a subcutaneous tunnel and suturing it with the finest catgut to the entire peripheral stump of the right femoral nerve.

153. **Subungual Hematoma.**—Lobmayer trephines the nail and thus releases the accumulated blood without pain and without injury of the nail. He has applied the method in forty cases, complete working capacity being restored in three or four days while the relief from pain was immediate.

Zentralblatt für Gynäkologie, Leipsic

January 7, XXXV, No. 1, pp. 1-48

- 154 Asepsis in Laparotomies and the Origin of Emboli. O. v. Franqué.
155 *Oxygen in Resuscitation of New-Born Infants. (Die Sauerstoffdruckatmung zur Bekämpfung des Scheintodes Neugeborener.) F. Engelmann.
156 Nomenclature in Obstetrics. J. Reich.
157 Walling Off the Small Pelvis After Infectious Operations. (Die Abkapselung des kleinen Beckens nach infektiösen Operationen.) E. Holzbach.

155. **Resuscitation of Asphyxiated New-Born Infants.**—Engelmann gives an illustrated description of the small oxygen tank and mask which has permitted the prompt resuscitation of a number of asphyxiated new-born infants with the least delay and trouble. The mask consists of a broad rubber ring which fits over the face, the roof of the mask forming a rubber balloon opening on the mask proper.

Zentralblatt für innere Medizin, Leipsic

January 7, XXXII, No. 1, pp. 1-32

158 Digestion of Carbohydrates. A. Jolles.

Gazzetta degli Ospedali e delle Cliniche, Milan

December 27, XXXI, No. 155, pp. 1641-1648

159 Iodin Sterilization of Field of Operation. (Sterilizzazione del campo operativo col metodo Grossich.) D. Vaudini.

January 1, XXXII, No. 1, pp. 1-16

160 Acidity of the Urine in Respect to Diagnosis and Prognosis. (L'acidità urinaria indagata come grado, persistenza e aumento.) L. Castriota.

January 3, No. 2, pp. 17-24

161 Treatment of Venereal Adenitis. G. Dal Fabbro.

Policlinico, Rome

December 18, XVII, No. 51, pp. 1603-1634

162 Urinary Concrements in Children. (Litiasi urinaria dei bambini.) G. Di Cristina.

January 1, XVIII, No. 1, pp. 1-36

163 *Clinical Importance of Two Precipitates in Acetic-Acid Seroreaction. F. Rivalta.

163. **Acetic-Acid Seroreaction.**—THE JOURNAL, July 9, 1910, page 178, described Rivalta's technic for this reaction with blood and serum, and the conclusions he drew from the findings in regard to the prognosis. He now announces that continuing the dilution still further, after all trace of precipitation had ceased, he found that in certain serums another precipitable substance made itself manifest when the dilution had reached a certain point. The behavior of this second precipitate indicates, he thinks, that it is due to the presence in the serum of certain elements resulting from breaking down of tissue, while the first precipitable substance seems to be an element of the defensive reaction. Comparison of the two may thus throw light on the prognosis. The second precipitate was evident in dilutions up to 1 to 15,000 in cases of advanced tuberculosis, for example.

Riforma Medica, Naples

December 19, XXVI, No. 51, pp. 1402-1428

164 *Carcinoma of Thyroid. (Carcinomi della ghiandola tiroide.) G. Morone.

165 Advantages of Temporary Cecostomy in Treatment of Muco-membranous Colitis. G. Doglioni.

164. **Cancer of the Thyroid.**—Morone reports three cases of cancer in the thyroid with an extremely rapid course; in two there was a preceding colloid goiter. One patient was a woman of 25, the others were over 40. In another case the symptoms suggested subacute inflammation of the thyroid; the intermittent fever was probably due to the absorption of the pathologic secretions of the gland.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

STUDIES ON LEPROSY. XII. NOTES ON THE STUDY OF HISTORIES OF LEPROS FROM THE STANDPOINT OF TRANSMISSION. By Donald H. Currie, Passed Assistant Surgeon and Director Leprosy Investigation Station. XIII. **A CONTRIBUTION TO THE STUDY OF RAT LEPROSY.** By Donald Currie and Harry T. Hollmann, Acting Assistant Surgeon, Leprosy Investigation Station, P. H. & M.-H. S. Investigations made in Accordance with the Act of Congress approved March 3, 1905. Public Health Bull. No. 41, U. S. P. H. and M.-H. S., Treasury Department, November, 1910. Paper. Pp. 36. Washington: Government Printing Office, 1911.

ACCIDENTAL INJURIES TO WORKMEN. With Reference to Workmen's Compensation Act, 1906. By H. Norman Barnett, F.R.C.S., Surgeon, Cripples' Home, Belfast. With Article on Injuries to the Organs of Special Sense, by Cecil E. Shaw, M.A., M.Ch., M.D., Lecturer on Ophthalmology and Otology, Queen's University of Belfast, and Legal Introduction by Thomas J. Campbell, M.A., LL.B., Barrister-at-Law. Cloth. Price, \$2.50. Pp. 376. New York: Rebman Co., 1911.

THE WORK OF THE DIGESTIVE GLANDS. Lectures by Prof. I. P. Pavlov, Director of the Physiological Section of the Imperial Institute of Experimental Medicine. Translated by W. H. Thompson, Sc.D., M.D., F.R.C.S. (Eng.), King's Professor of the Institutes of Medicine, Trinity College, Dublin. Second English Edition. Cloth. Price, \$3 net. Pp. 266, with 43 illustrations. Philadelphia: J. B. Lippincott Co., 1910.

A HANDBOOK OF PRACTICAL TREATMENT. By Many Writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. Volume 1. Cloth. Price, \$6 net. Pp. 909, with 233 illustrations. Philadelphia: W. B. Saunders Co., 1911.

REMEDIAL GYMNASTICS FOR HEART AFFECTIONS. Used at Bad-Nauheim. By Dr. Julius Hofmann and Dr. Ludwig Pohlman, Berlin and Bad-Nauheim. Translated by John George Garson, M.D., Edin., Physician to the Sanatoria and Bad-Nauheim, Eversley, Hants, from "Die Gymnastik der Herzleidenden." Cloth. Price, \$2 net. Pp. 128, with 42 illustrations. New York: Paul B. Hoeber, 1911.

FOURTEENTH ANNUAL REPORT OF THE LOOMIS SANATORIUM FOR THE TREATMENT OF TUBERCULOSIS. Oct. 31, 1910. Liberty, Sullivan County, New York. (Medical Supplement prepared in accordance with the suggestion of the National Association for the Study and Prevention of Tuberculosis, by Herbert Maxon King, M.D.) Paper. Pp. 80.

THE TREATMENT OF SYPHILIS BY THE EHRLICH-HATA REMEDY (DIOXYDIAMIDOARSENOBENZOL). A Compilation of the Published Observations by Dr. Johannes Bresler, Chief Physician to the Provincial Medical Establishment at Luben, Silesia. Second Edition. Cloth. Price, \$1. Pp. 122, with illustrations. New York: Rebman Co., 1911.

AERZTLICHE FORTBILDUNGSKURSE DER FREIEN ORGANISATION FÜR DIE MEDIZINISCHEN KURSE AN DER K. K. UNIVERSITÄT WIEN. (Post-graduate medical work under the patronage of the free organization for medical courses at the i. r. University of Vienna.) 2. Ausgabe. Paper. Pp. 116. Vienna: Urban & Schwarzenberg, 1911.

DISCURSO LEIDO EL DIA 2 DE JULIO EN LA APERTURA ANUAL DE LOS ESTUDIOS DE LA UNIVERSIDAD PONTIFICIA DE STO. TOMAS, DE MANILA. Por Don Leon M. Guerrero, Professor de la Facultad de Farmacia en la misma Universidad. Edicion oficial. Paper. Pp. 88. Manila: Estab. Tipog. del Colegio de Sto. Tomas, 1910.

AN INTRODUCTION TO VERTEBRATE EMBRYOLOGY. Based on the Study of the Frog, Chick and Mammal. By Albert Moore Reese, Ph.D. (Johns Hopkins), Professor of Zoology in West Virginia University. Second Edition. Cloth. Price, \$1.50 net. Pp. 340, with 118 illustrations. New York: G. P. Putnam's Sons, 1909.

HISTORY OF ANTHROPOLOGY. By Alfred C. Haddon, M.A., Sc.D., F.R.S., Fellow of Christ's College, University Reader in Ethnology, Cambridge. With the Help of A. Hingston Quiggin, M.A., Formerly of Newnham, Cambridge. Cloth. Price, 75 cents. Pp. 206, with illustrations. New York: G. P. Putnam's Sons, 1910.

THE HEALTH INDEX OF CHILDREN. By Ernest Bryant Hoag, M.A., M.D., Medical Director of Berkeley Schools. With Prefatory Note by Frank F. Bunker, Ph.B., Superintendent of Berkeley Schools. Cloth. Price, 80 cents. Pp. 188, with illustrations. San Francisco: Whitaker & Ray-Wiggin Co., 1910.

SYPHILIS: ITS DIAGNOSIS AND TREATMENT. By F. J. Lambkin, Col. R.A.M.C., Lecturer on Syphilology, Royal Army Medical College, London. With Preface by Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. Cloth. Price, \$2.25 net. Pp. 195. New York: William Wood & Co., 1911.

PROCEEDINGS OF THE 64TH ANNUAL MEETING OF THE NEW YORK STATE TEACHERS ASSOCIATION. Held at New York City, Dec. 28-29, 1909. New York State Education Department Bulletin 483. Paper. Pp. 703. Albany: University of the State of New York, 1910.

RADIUM: ITS PHYSICS AND THERAPEUTICS. By Dawson Turner, B.A., M.D., F.R.C.P., Edin., Lecturer on Medical Physics, Surgeons' Hall, Edinburgh. Cloth. Price, \$1.75 net. Pp. 86, with 27 illustrations. New York: William Wood & Co., 1911.

COMPEND OF GYNECOLOGY. By William Hughes Wells, M.D., Associate in Obstetrics in the Jefferson Medical College. Fourth Edition. Cloth. Price, \$1 net. Pp. 290, with 153 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

WE YOUNG MEN. The Sexual Problem of an Educated Young Man Before Marriage: Purity, Strength and Love. By Haus Wegener. Introduction by Sylvanus Stall. Paper. Price, 70 cents. Pp. 204. Philadelphia: Vir Publishing Co., 1911.

AN INTRODUCTION TO SURGERY. By Rutherford Morison, M.A., M.B., F.R.C.S., Edin. and Eng., Professor of Surgery, University of Durham. Cloth. Price, \$2.50 net. Pp. 162, with 151 illustrations. New York: William Wood & Co., 1911.

A HANDBOOK OF INTESTINAL SURGERY. By Leonard A. Bidwell, F.R.C.S., Surgeon, West London Hospital. Second Edition. Cloth. Price, \$2.50 net. Pp. 215, with 120 illustrations. New York: William Wood & Co., 1911.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE OF THE UNITED STATES. For the Fiscal Year 1909. Cloth. Pp. 274. Washington: Government Printing Office, 1910.

PERSONAL HYGIENE AND PHYSICAL TRAINING FOR WOMEN. By Anna M. Galbraith, M.D., Author of "Hygiene and Physical Culture for Women," etc. Cloth. Price, \$2 net. Pp. 371, with illustrations.

MAKERS OF MAN. A Study of Human Initiative. By Charles J. Whitby, M.D., Author of "The Logic of Human Character," etc. Cloth. Price, \$3. Pp. 424, with illustrations. New York: Rebman Co., 1911.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Reprints. Vol. XI. 1910. Paper. Pp. 419, with illustrations.

STATE REGISTRATION FOR NURSES. By Louie Croft Boyd, R.N., Graduate Colorado Training School for Nurses. Paper. Price, 50 cents. Pp. 42. Philadelphia: W. B. Saunders Co., 1911.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 7

CHICAGO, ILLINOIS

FEBRUARY 18, 1911

PLICATION OF THE ROUND AND ANTERIOR FOLD OF THE BROAD LIGAMENT ON THE ANTERIOR SURFACE OF THE UTERUS FOR RETRODISPLACEMENT *

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ANATOMIC AND SURGICAL PRINCIPLES

This presentation is made more to illustrate the anatomic and surgical principles underlying the entire subject of the treatment of retroversion, than to set forth any specific mechanical detail. The uterus is very largely an intra-abdominal organ. All intra-abdominal organs are supported almost entirely by peritoneal folds. The peritoneum is supported in turn by a loose connective tissue which holds it loosely but persistently to the abdominal wall except at its upper attachment, where it is firmly fixed and blended with the diaphragm. Strictly speaking, the abdominal organs, which we refer to as intraperitoneal, are all extraperitoneal, inasmuch as every organ lies between two layers of peritoneum made as if the organ had been pushed into the peritoneal sac from the outside, and had become adherent to it.

New ligaments are formed during fetal development and rotation, by the contact of two peritoneal surfaces which adhere, blend, and become obliterated at point of contact. This may be illustrated by the rotation of the colon, which goes upward and to the right and adheres to the peritoneum of the posterior abdominal wall and thereby forms the mesocolon. The spleen rotates to the left, comes in contact with the peritoneum of the posterior abdominal wall, adheres to it, obliterates the endothelial coverings and thereby the ligament of the spleen is formed and it is fixed on the left side. The omentum grows from the lower border of the stomach down over the transverse colon and adheres to it at the point of contact, its surfaces blend and we have the gastrocolic ligament or gastrocolic omentum. If the peritoneal surface of the stomach is plicated by bringing the anterior superior border and the anterior inferior border together and holding them firmly by peritoneal sutures, all of the space enclosed by this line of sutures becomes obliterated. If the omentum is sutured to the abdominal wall and held firmly, the surfaces blend and a complete partition is made across the abdomen. If the lesser omentum is plicated for a gastropexy, Beyer has found that the surfaces blend and the omentum or ligament is permanently shortened.

The Kelley operation proves more conclusively than anything else the certainty of the blending of peritoneal surfaces, for we find that after Dr. Kelley's operation (which does not use one-twentieth the amount of peritoneum found supporting other organs of equal weight), in only a small percentage of cases does the uterus fall backward, and in nearly all of those cases in which the uterus does fall backward, the ligament is found, not broken, but attenuated to a thread. This operation has probably been done more times than any other intraperitoneal operation, with the exception of the removal of the appendix, tubes or ovaries; and with remarkable success when we consider that it first struck the vital point of treating displaced organs. Alexander unwittingly used the same principle in drawing out the round ligament and with its covering of peritoneum which blended at the internal ring, shortening the anterior fold of the broad ligament just so much as there was of peritoneum passing through the internal ring. The operation was later spoiled by meddlers who pushed the peritoneum back off the ligament, as a result of which the operation has fallen largely into disuse. The Gilliam, the Mann, the Simpson, the Baldy-Webster and all operations which are used to-day and have been found to be successful, use the peritoneum of the broad ligament; consequently I think the formulation of the following rule is justified: "Two peritoneal surfaces brought together and held firmly in an aseptic state, adhere, blend, and obliterate and the contiguous surfaces lose their endothelial covering, becoming continuous at the point of peritoneal contact."

The uterus, however, differs from the other peritoneal organs in that it is permitted a wider range of motion because of its functions; also, in that it is connected directly with the outside and therefore must be protected from extrusion. Because of the necessity for extraordinary mobility, the peritoneum of the broad ligament, the principal ligament, is attached extensively before and behind to the sides of the uterus and well down near its middle between fundus and cervix. Thus a very extensive attachment of peritoneum supports the uterus and, because of the large amount of loose connective tissue holding the peritoneum to the fixed wall of the pelvis, gives it a wide range of mobility. According to Nature's law of conservation, the uterus, which is so loosely attached, is turned in the pelvis, so that it lies practically crosswise.

Owing to the fact that such a variety of positions must be assumed, it becomes necessary to have some other means of automatically or involuntarily poising this organ and keeping it in this position at right angles to the body. Therefore the round ligament becomes a necessity, and is, histologically, perfectly constructed for such a function, as indicated by the following definition, taken from Sobotta:

* Read in a symposium in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910. Some articles of this symposium appear on later pages of this issue and others, with the discussion, will be printed next week.

In addition to the broad ligament, the uterus possesses other ligaments which are to be regarded as a continuation of its musculature. The most important of these is the round ligament, which is essentially a cylindrical or slightly flattened muscular cord, 12 to 15 cm. in length, which takes origin on either side from the anterior surface of the uterus in the vicinity of the uterine extremity of the tubes, and runs at first almost horizontally, then forward and downward between the two layers of the broad ligament covered mainly by the anterior one. In the vicinity of the uterus the ligament is thickened and consists solely of connective tissue and non-

an extraordinary precaution to prevent the uterus from being extruded. It is therefore very evident that the function of the round ligament must be that of automatically poising the uterus during the various positions assumed by the individual and thus preventing it from becoming a dead weight on the broad ligament.

OPERATION

Following the early operations of double salpingectomy and oophorectomy, in which the broad ligament was tied

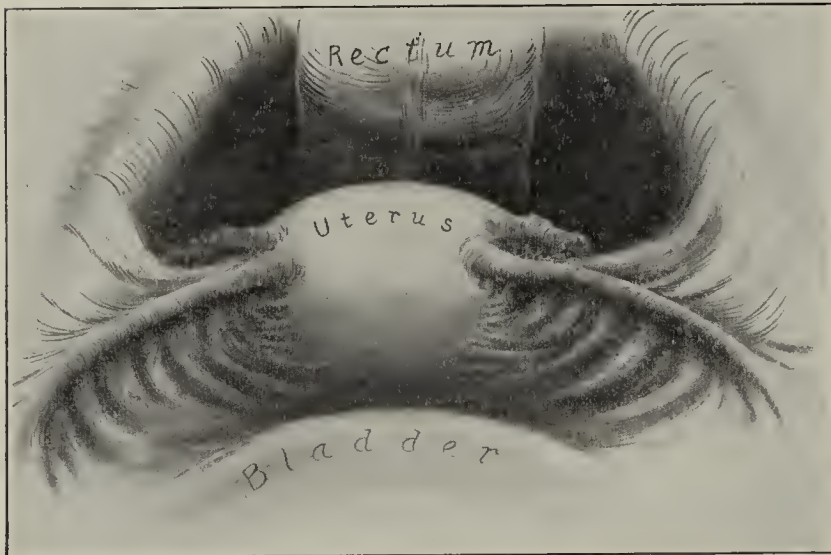


Fig. 1.—Relations in partial retrodisplacement of the uterus.

striated muscle but in its course through the inguinal canal it usually receives fasciculi of striated fibers from the internal oblique and transversalis which are continued on it for a varying distance, frequently extending almost to the uterus but never passing externally beyond the inguinal ring. He further says: "Similar continuations of the uterine musculature are the recto-uterine which run in peritoneal folds of the same name and connect the superficial musculature of the rectum with that of the uterus. The uterosacral ligaments are connective-tissue fasciculi which accompany the muscular similarly named folds to the region of the second and third sacral vertebrae where they fuse with the peritoneum.

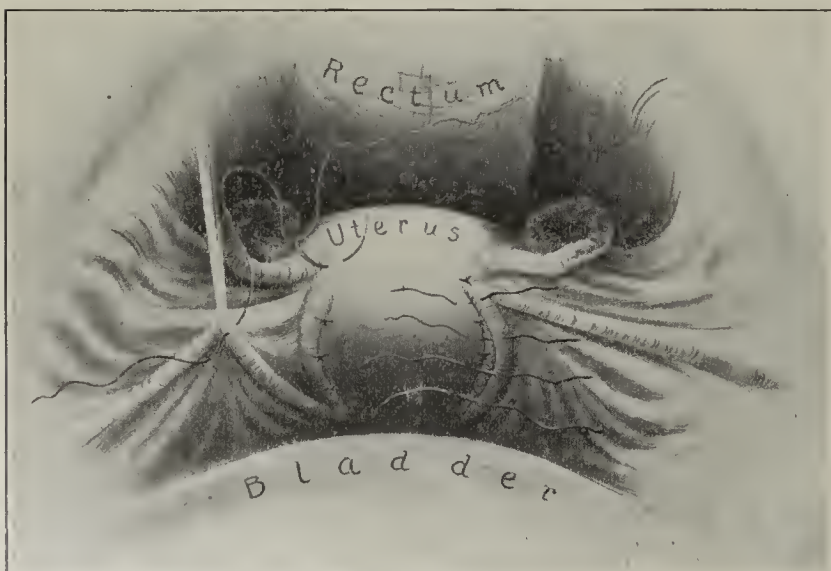


Fig. 3.—Second step in author's operation.

Taking up the physiology, we find that a muscle fiber has no other function than that of contraction and producing motion. We also know that a muscle fiber will under no circumstances stand a continuous strain, and that a muscle is therefore totally unfitted for taking up the work of a ligament proper; consequently, the only physiologic function for which the round ligament could be used would be for producing motion, aside from the function performed by the connective tissue, which is

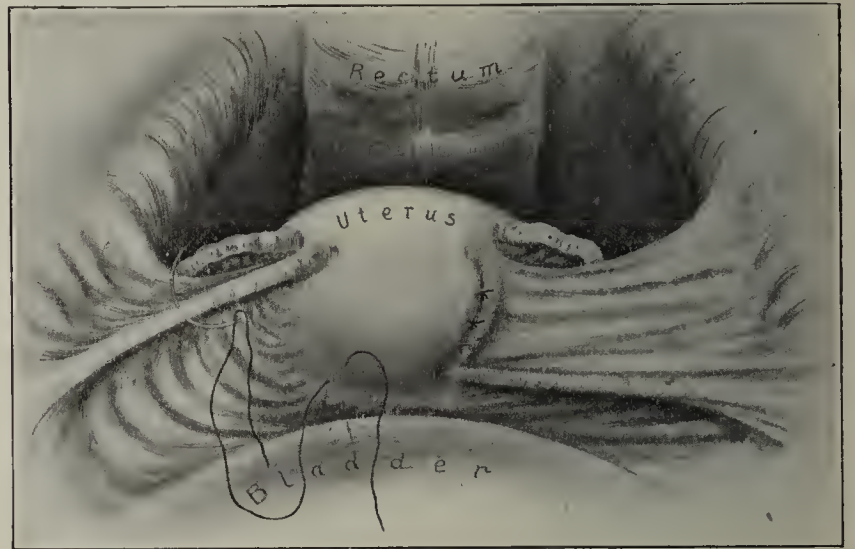


Fig. 2.—First step in author's round and broad ligament plication.

off *en masse*, and in which the round ligament was frequently included, a large percentage of the patients developed a retroversion. If one or both round ligaments are destroyed by traumatism, retroversion will usually take place later on; therefore it seems that the round ligament and the broad ligament are equally essential to the proper holding of the uterus in position—the broad ligament to carry the constant weight, the round ligament to poise it on this support in a manner making it easy to carry. Such being the case, the ideal operation for retrodisplacement of the uterus should shorten the broad ligament and at the same time avoid



Fig. 4.—Third step in author's operation.

permanently fixing and thereby hampering the movements of the round ligament. Therefore I submit the following operation:

Before beginning the operation proper, break up adhesions, treat adnexa, lifting the uterus, and pack a sponge back of it which leaves it in the position shown in Figure 1. Then seize the round ligament about an inch and a half from the uterus, and with a No. 2 or No. 3 chromicized catgut, stitch to the anterolateral border of the uterus at the beginning of

the vesico-uterine fold. Place three or four similar sutures between this point and the uterine end of the ligament (Fig. 2). Thus a double fold of the broad ligament is brought over to the side of the uterus.

Seize the ligament an inch and a half further on and bring it up to a point just above and internal to the uterine end of the round ligament and fasten with a chromicized catgut suture. Place three or four more sutures between this and the first suture at the vesico-uterine fold (Fig. 3). Thus, two more peritoneal or broad ligament layers are brought over to the side and front of the uterus.



Fig. 5.—Sectional view, showing scheme of plication operation.

With a No. 1 or 2 chromicized catgut continuous suture, bring a fold of peritoneum from each side over the line of interrupted chromicized sutures. This continuous suture may include as much of the peritoneum as necessary to bring it taut; care must be made to avoid pulling in the bladder.

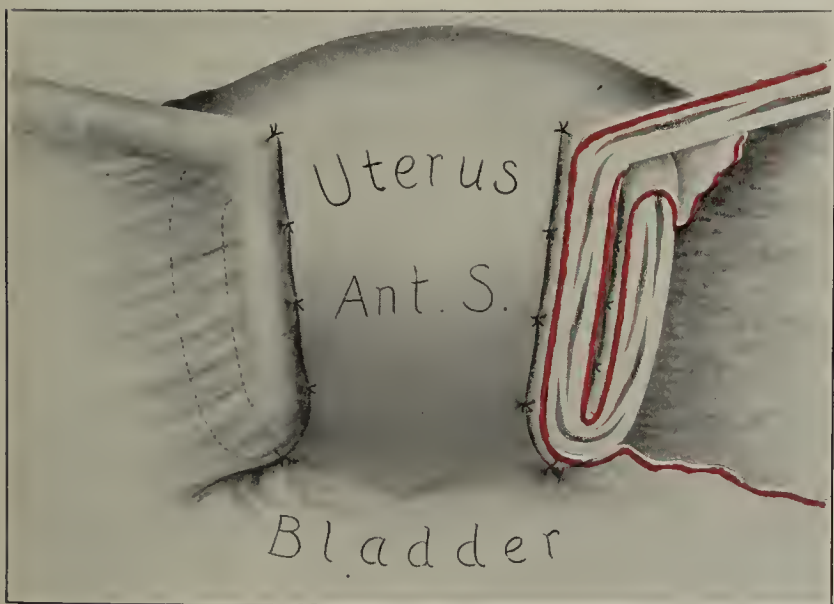


Fig. 7.—Scheme of second step of operation shown in perspective on the left and in sectional view of the right.

(Fig. 4). Be careful not to include the entire thickness of the round ligament in any of the rows of sutures.

I have personally performed 272 operations for retro-displacements of the uterus by using this method. In twelve other cases continuous sutures were used all through, in an attempt to shorten the operation. After the twelve operations by the continuous method, four patients relapsed very soon and the other eight have not been heard from. After the 272 operations by the

method described, using the interrupted sutures, I have heard of only two cases of recurrence; one after an operation for prolapsus in an old woman, another in which the operation was followed by volvulus, requiring a secondary operation and drainage. In fact, I have not examined these patients and do not know that recurrence has taken place. I have learned directly of eighteen women who have borne children since. In these, no dystocia has been noticed. I have personally examined

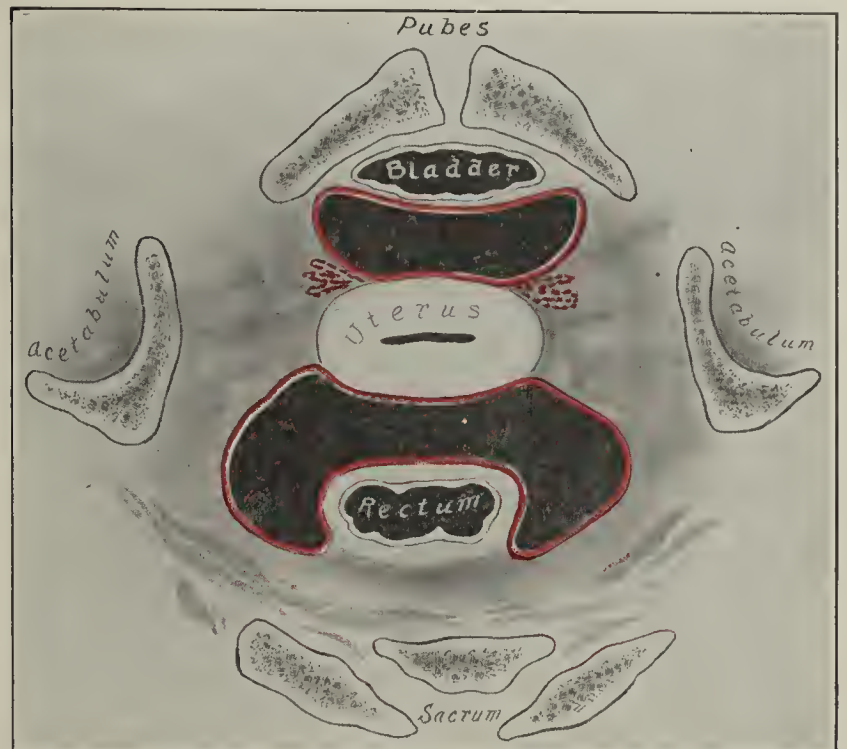


Fig. 6.—Sectional view, showing end-results of plication operation. Dotted lines represent obliterated peritoneal areas.

four of the eighteen after labor and found the uterus in good position. The other fourteen have been examined by the family physician and the uterus has been found in good position. Of the 272 patients five have

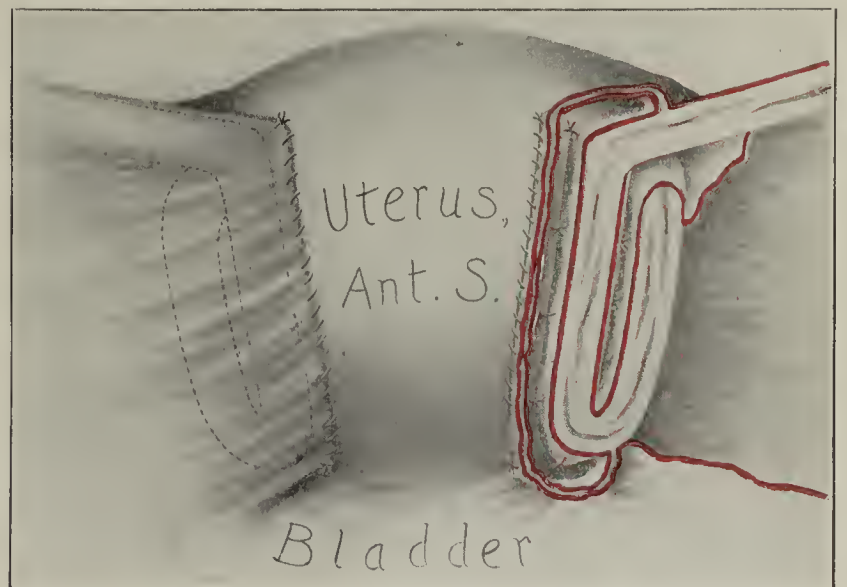


Fig. 8.—Scheme of third step of operation shown in perspective on the left and sectional view on the right.

required a later operation for other diseased conditions in the lower abdomen, which has given an opportunity to observe the condition following the operation. In all five cases, the broad ligament was found holding the uterus in perfect position. The ligament was normal except that the anterior fold seemed slightly thicker. The round ligaments, one of which in all cases, and both of which in some cases, had been attenuated to the size of a very small cord, had regained their normal size

and their normal position under the peritoneum and, in fact, had reestablished relations that were normal in every respect. Therefore I feel justified in presenting Figures 7 to 11 to illustrate the manner in which the round ligament unquestionably restores itself to its normal condition. I may here state that this is easily proved by making a cloth uterus and broad ligaments in which a round ligament made of an elastic cord is placed. By folding the round ligament and the broad ligament on the surface of the cloth uterus, as I have

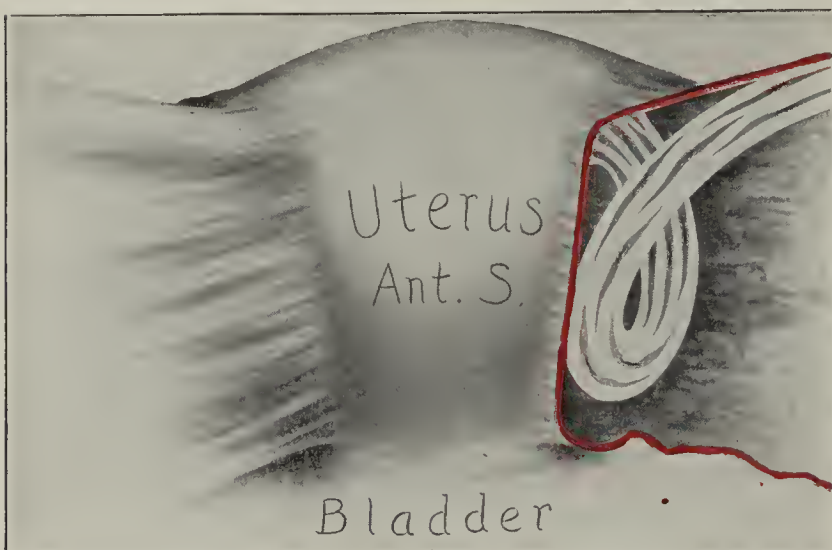


Fig. 9.—Round ligament freeing itself and straightening under the peritoneum.

done in the operation, taking care to glue the cloth broad ligament to the surface of the cloth uterus, thus corresponding to the blending of the peritoneum; by using sutures which can be either withdrawn or cut, in order to free the elastic cord, it will be found that the cord will slip out from between the layers of the cloth broad ligament, producing exactly the same condition I have found in my cases, minus the blending of the

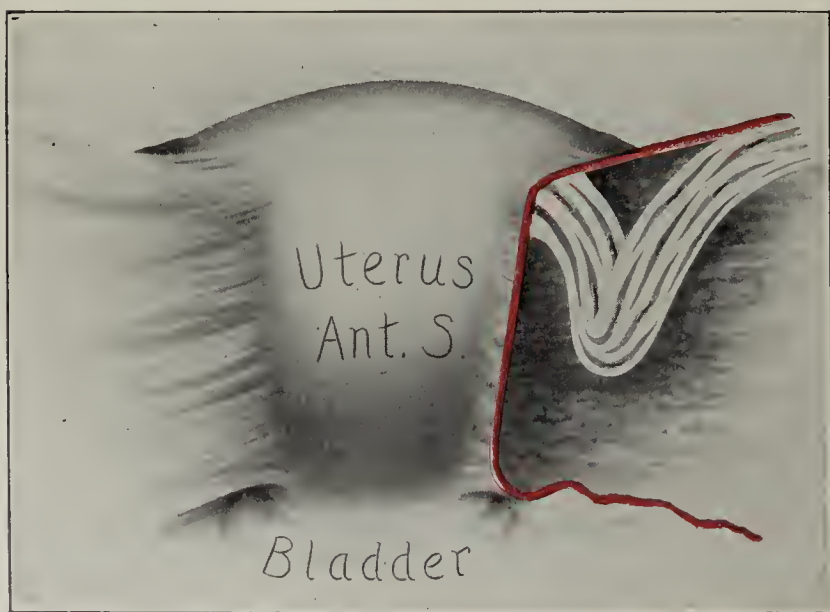


Fig. 10.—Final step; round ligament straightening itself under the peritoneum of the broad ligament.

adjacent peritoneal surfaces which obliterates all peritoneal spaces.

Figure 7 shows the second step of the operation in perspective on one side and a sectional view of the same step of the operation on the other side. In the sectional view, representing the round ligament as being very much attenuated, the muscle cells are few.

Figure 8 shows the completed operation in perspective on one side and a sectional view of the completed opera-

tion on the other side with the same attenuated ligaments.

Figure 9 shows a broad ligament some weeks after operation on one side, and on the other side, the theory of the gradual freeing of the round ligament under the broad ligament as represented. The round ligament has had time to rest, the catgut sutures have been partially absorbed, the muscle fibers, performing their normal function of contraction, are coming closer together, thereby straightening the ligament out under the peritoneum.

Figure 10 is an extension of the same process, in which the round ligament is becoming straighter and shorter and the muscle fibers are becoming correspondingly more numerous.

Figure 11 shows the round ligament straightened out under the broad ligament and the establishment of a normal cord:

In this operation, as proved by results seen afterward, all the requirements of the anatomic and surgical principles set forth have been fulfilled. The broad ligament, which is the principal support of the uterus, has been shortened, and the action of the round ligament has not been permanently hampered but on the contrary, it has

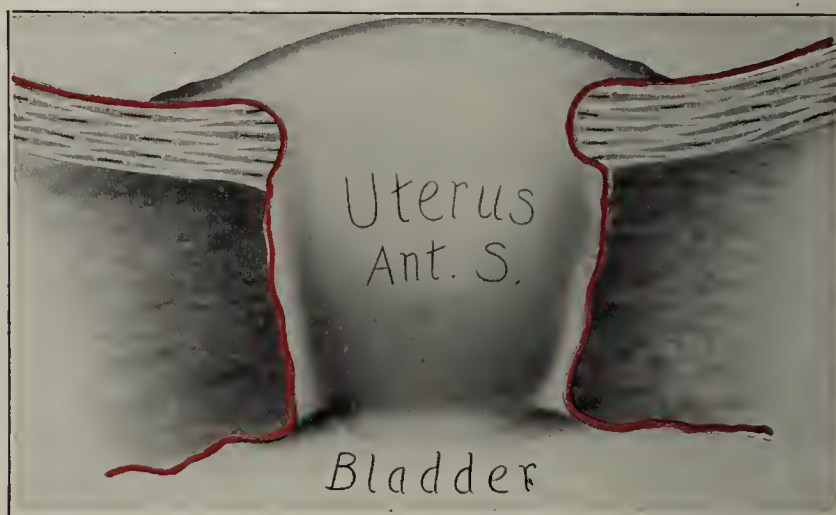


Fig. 11.—Round ligament restored to normal position under the peritoneum.

been permitted to regain its normal strength so that while the uterus is supported constantly by the broad ligament, it may also be poised to suit the changing positions of the body by the restored round ligament.

Dr. W. B. Holden, my office neighbor, has done this operation more than 50 times without recurrence as far as he knows, and states, in a personal communication that the results are so satisfying that he never thinks of doing any other operation for retroversion of the uterus.

Dr. Suttner of Walla Walla, Wash., has done the operation regularly for some time (more than 150 operations), and patients have been pleased with it. The observations of all these operators, taken with my own, seem to indicate that the comfort to the patient is greater in this operation than in any other operation having the same object. The absence of the backache, which is represented as following operations which permanently fix the round ligament, is a very noticeable feature. Previous to the development of this operation, I had done approximately 200 Kelley operations with very good success as far as holding is concerned. The anatomic condition left after the operation was unsatisfactory in a considerable number of cases. Labor was difficult in a proportion of the patients.

In some cases habitual abortion occurred and a very large percentage of the patients complained of the old backaches, pulling on the abdomen, and a train of nervous symptoms which were even worse than the original. I may here state that I followed Suttner's lead in performing the plication operation in cases in which the uterus was already pregnant. Suttner deliberately did this plication operation in two cases at the second month of pregnancy in order to prevent abortion, which had previously been habitual about the third month as a result of the displaced uterus. In each instance, the child went on to full term and was born without difficulty. In one of my cases the patient was pregnant at the time of operation but did not know it. She went on to full term and was delivered. In another case, the patient, an unmarried woman, was found to be pregnant two months. The plication operation was done regardless of the condition. The wedding ceremony was performed the night after the operation. Pregnancy went on to full term and the child is now several months old. I presume that these pregnancies would continue with any of the other round ligament operations in just the same way, but I mention these cases to show that while this operation seems to comprise a good deal of surgery the traumatism must necessarily be of a superficial nature.

Corbett Building.

THE RELATION OF THE TEETH TO THE DEVELOPMENT OF THE JAWS AND FACE *

FREDERICK B. NOYES, B.A., D.D.S.
CHICAGO

In considering the structure of all multicellular organisms, and, in fact, in the very simplest aggregations of cells into tissues, it becomes apparent that there are two essential parts: the cells, which are the vital units; and intercellular substances, which give the physical characteristics to the tissue. The latter are always material which have been produced by the vital activity of the protoplasm, but which are not living matter; that is, they have no vital properties but are dependent on the protoplasm for formation and for the maintenance of their chemical character. In tissues, the vital characteristics are given to the protoplasm by the cells, the physical characteristics by the intercellular substance. Protoplasm, which has long since been recognized as the physical basis of life, is always of a soft and more or less gelatinous character, and of it alone, nothing resembling a highly organized creature could be formed. Other substances therefore have been produced by the protoplasm for the purposes of protection, support, rigidity and strength. Always the protoplasm is the active agent by whose chemical activity the protecting or supporting substance is formed. There are two types of formation. The first consists of cells which develop substances inside of the protoplasm to give rigidity or strength. This class is illustrated by certain cells found in the lobster and other similar creatures, but this type of supporting cell has apparently proved insufficient or not adapted to higher developed forms. In the other type the protoplasm develops, on its surface or about it, formed materials which give protection and support, either in the form of rigidity, or strength, or both. The simplest example of this class is found in the cell walls of plants.

It is important to note that the necessity for physical properties which are impossible for protoplasm itself is the cause of the appearance of intercellular substances.

In the very beginning of evolution, therefore, physical conditions and necessities led to the formation of substances by the protoplasm which gave it support and protection. In the higher animals certain tissues have developed such materials for the support and assistance of the more vitally active tissue, and therefore have been called the supporting or connective tissues. In these tissues the cells form and maintain materials which give qualities of strength and rigidity to the tissue and enable it to serve as the framework of the organism. The intercellular substances have been called into existence to meet physical and mechanical conditions. The connective tissues are the most adaptable of all tissues and respond most quickly to conditions of environment. The mutation of these tissues or their power to change from one variety to another is their most striking characteristic. The cells control the intercellular substances to form more, to destroy what has been formed, or to change its character; and their activities are excited in response to physical or mechanical conditions.

In the process of growth and function they are continually changing. Embryonal connective tissue develops into fibrous tissue, fibrous tissue into cartilage, and cartilage into bone. In bone, which is the highest form of tissue for rigidity, mutation is the most striking characteristic. It may be formed from fibrous tissue directly or through the medium of cartilage, and it always retains a large amount of cellular elements which can at any time destroy and reform the intercellular substances. In fact, bone should always be considered as a fibrous tissue which has developed in itself intercellular substances of a different sort to meet special mechanical conditions. In other words, there is always in contact with the calcified intercellular substance of bone, on its surface and in spaces within it, undifferentiated connective tissue, the cells of which are capable of developing into any sort of connective tissue cells. It is the presence of these embryonal cells which makes bone a plastic tissue. There are three varieties of bone: subperiosteal, Haversian system, and cancelous. In other papers I have emphasized the characteristics of these classes, and I assume that all are familiar with the minute structure of each. At present I wish to emphasize the transformation from one variety to another that occur in growth and which are in fact going on continually throughout life under the influence of mechanical conditions.

In bone showing subperiosteal bone on the surface, a portion of compact or Haversian system bone, and cancelous bone beyond, if this bone is growing in one direction subperiosteal bone will be laid down in layers parallel with the surface. When a certain thickness has been formed large spaces or canals will be absorbed out of it, forming what are known as Haversian spaces and around these concentric layers will be laid down, converting them into Haversian systems. Only enough compact bone is formed to meet the mechanical stress of the position. As soon as an excess has been formed absorption begins in the Haversian canals, cutting out large spaces around which a few lamellæ are formed, producing cancelous bone. If the bone is growing in the opposite direction concentric layers will be laid down around the spaces of the cancelous bone, making it more compact and large absorptions will occur under the periosteum, cutting deep into the Haversian system bone, after which a few layers of subperiosteal bone will be

* Read in the Section on Stomatology of the American Medical Association, Sixty-First Annual Session, at St. Louis, June, 1910.

added to the surface. In such absorptions the entire surface is not attacked at one time, but in one area there will be a large absorption while in an adjoining there is a slight rebuilding.

Figure 1 illustrates the first type. It is a section of the buccal cortical plate of the mandible of a sheep. On the surface is shown a little subperiosteal bone in which only one or two Haversian systems have been formed. Next is seen the Haversian system bone which has been destroyed from within and rebuilt with bone of more open structure. The first type of growth occurs in the direction toward which force is being exerted; the second type occurs on the surface from which force is being exerted. It may be stated as a generalization that the bone is more dense, but less in amount on the side

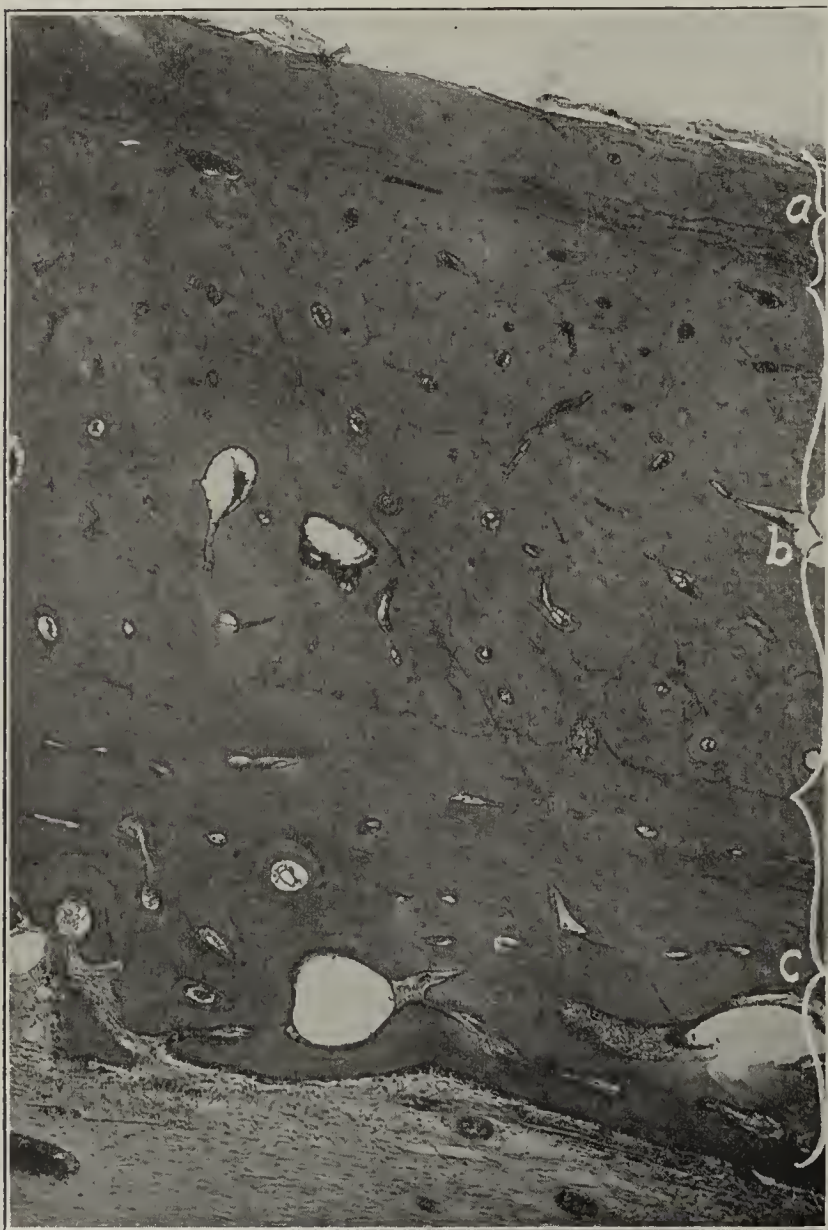


Fig. 1.—Buccal cortical plate of mandible of sheep; a, subperiosteal bone; b, Haversian system bone; c, rebuilt bone of more cancellous character.

toward which force is exerted, and greater in amount, but less dense on the side from which force is exerted. These generalizations become important in orthodontia. These conditions are illustrated in Figures 2 and 3. Growth has been progressing toward the buccal side. In other words that is the direction toward which force has been exerted, and the compact bone is less in amount, more dense in structure, while on the lingual side it is greater in amount but less dense in structure.

Professor Cope, in a long article,¹ elaborates the idea that the bones have developed in response to mechanical conditions, that the form, size and structure

are the expression of adaptation to mechanical environment. He treats the subject entirely from the evolutionary standpoint. If we consider the subject from the standpoint of the development of the individual we are led to similar conclusions, and become more and more impressed with the fact that bone is formed in response to mechanical stimuli. This is true of the bone as an organ, and equally true of the minute structure within it.

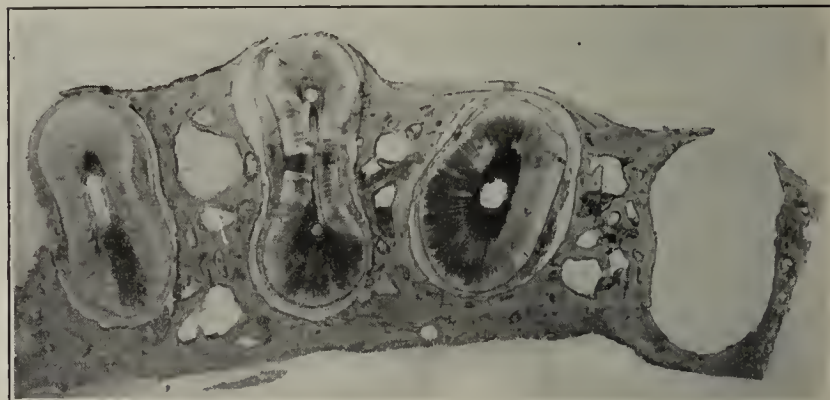


Fig. 2.—Transverse section through the alveolar process and the roots of the first and second bicuspid and first molar teeth; the buccal plate above the lingual plate below; the alveolus of the first bicuspid, to the right, empty.

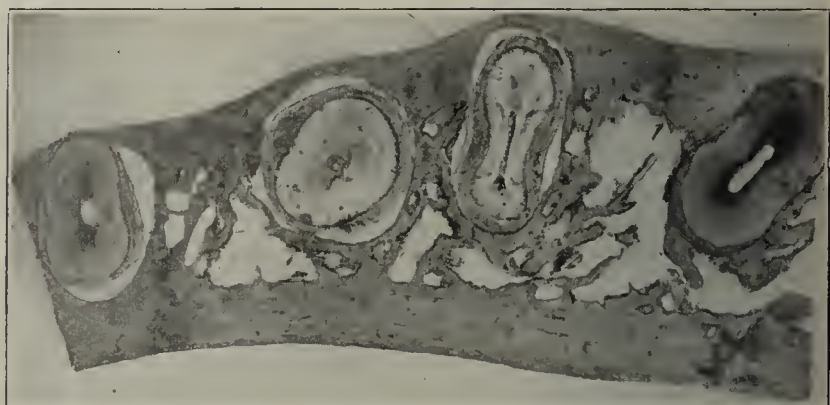


Fig. 3.—Transverse section deeper in the process; the buccal plate above, the lingual plate below, the first bicuspid to the left.

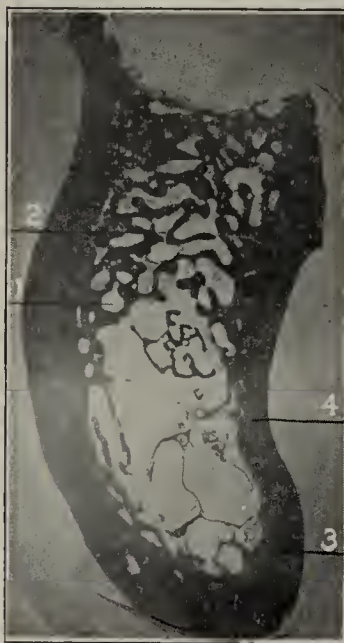


Fig. 4.—Section of human mandible between second and third molars.

Some years ago, Walkoff, in an elaborate study of the jaws by radiographs, showed that the direction and character of the spicules of cancellous bone within the substance of the bone are not the result of chance, but that their direction and arrangement were determined by the forces to which the compact bone of the cortical plates was subjected. If we examine sections of the mandible we shall find that not only is its general form determined by the mechanical conditions to which it has been subjected, but the cancellous bone is being continually reformed to adjust it to the stresses received on its surfaces.

Figure 4 is a decalcified section of a human mandible which was made to study the arrangement of the lamellae as a record of the growth of bone. The subperiosteal layers are very few at almost all parts of the section. The cancellous bone in the alveolar region has been built and rebuilt to support the cribriform plates forming the

1. Cope, E. D.: The Mechanical Causes of the Development of the Hard Parts of the Mammalia, Jour. Morphol., 1888, iii.

walls of the alveoli for the roots of the molars during their movements in development, and the record of this rebuilding is left in the arrangement of the lamellæ.

Figure 5 shows a field from position 1, Figure 4. Notice how plates have been cut off and built on with layers in a new direction and how additions have been made at different times.

Figure 6 is taken from position 2, Figure 4. These spicules are a regular patchwork. At *a* is a bit of old spicule which ran in an entirely different direction, and there is another at *b*. These changes have not been the result of chance, but each new formation has been the response to some mechanical stimulus received through the substance of the bone.

Figure 7 is from 3, Figure 4, and shows the rebuilding that occurs during growth. There are large areas showing lamellæ which were at one time parallel with the surface in which comparatively few Haversian systems have been formed. This was probably during the most

mechanical influences on the jaws. Probably the first and most important is the force exerted by the growth of organs enclosed in, or surrounded by the bones. This includes the growth of the tongue and the muscles surrounded by the jaws, and the muscles which lie against their surfaces, but more important, the growth of the teeth which are enclosed in the substance of the bone. Not much is known about the nature or the amount of the force generated by the growth or multiplication of cells. More has been done in regard to the growth



Fig. 5.—Cancellous bone from 1 in Figure 4, showing the rebuilding of the spicules and addition of layers at different times.

active period of growth, the later subperiosteal layers being much more completely replaced by Haversian systems.

Figure 8, a field at 4 of Figure 4, shows wonderfully well the outline of the absorption spaces that have been rebuilt and at several places on the surface the marks of removal of bone by the periosteum, and in one or two places slight rebuildings.

In the growth of the jaws, therefore, bone is formed on the surface by the periosteum, the periodontal membranes, and the articular cartilage, and is absorbed and rebuilt within, adapting it to all of its mechanical influences. We may say, therefore, that the adult bones are the result of all the mechanical conditions to which they have been subjected.

It would be impossible within the limits of this paper to consider in detail all of the forces which exert



Fig. 6.—Cancellous bone from 2 of Figure 4; *a* and *b*, bits of old spicules.



Fig. 7.—Compact bone from 3 of Figure 4, showing formation of Haversian systems in old subperiosteal bone.

of plant than animal cells but our knowledge is very meager. The force is probably very considerable, but acting through very small space. The growing roots of plants move stones, and some experiments have been made to determine the weight that could be lifted by the growth of a rootlet. The phenomena of osmotic pressure are involved in the problem and this involves the question of blood-pressure. There are some analogies

between the force exerted by the growth of protoplasm and that generated by the expansion of wood fiber, by the absorption of water, but the whole subject is too deeply complicated for any such superficial analysis. Whatever may be the explanation, the growth and the multiplication of cells produces very considerable force; and the growth of the teeth within the substance of the jaw produces mechanical conditions which are very important in the development of the bones of the face.

In a paper recently read before the Illinois State Dental Society I presented a more elaborate analysis of this topic, only the more important phases of which can be given here. While the temporary teeth are erupting they are continually being carried occlusally by the growth of their roots, the alveolar process growing up around them. As the roots of the anterior teeth are completed, they are still pushed forward, upward and outward, by the development of those distal to them. As soon as the temporary dentition is complete, the temporary teeth—alveolar process and all—are forced to move, by the development of the permanent teeth, which lie in crypts below them. In the paper referred to, the relation of these crypts to the roots of the temporary teeth was examined in detail; here it is sufficient to say that the growth of the permanent incisors and cuspids

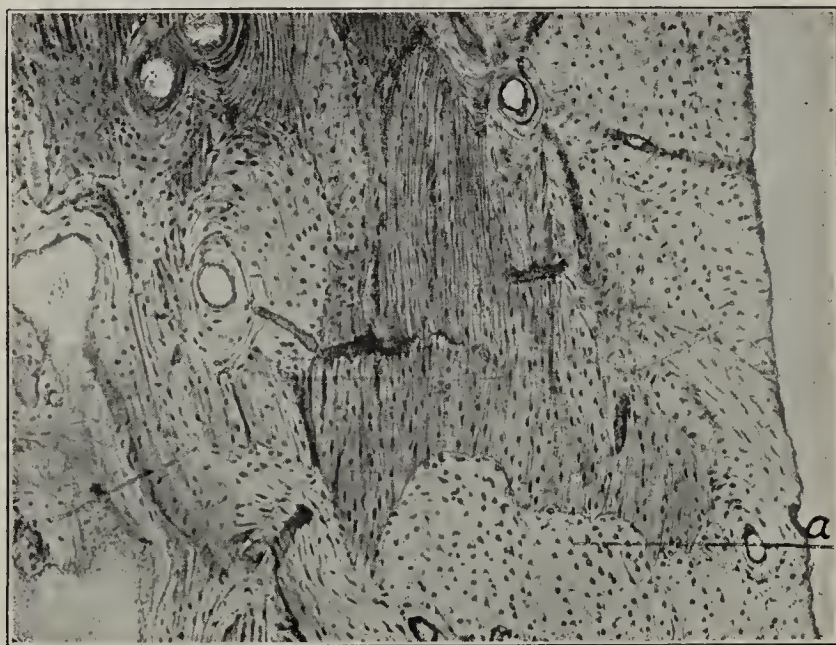


Fig. 8.—Compact bone from 4 of Figure 4; *a*, a rebuilt portion.

first causes the development between the median line and the region of the mental foramen and later the development of the bicuspid and second and third molars cause the growth which increases the distance from the mental foramen to the ramus. The development of the long roots of these teeth will carry the temporary teeth, alveolar process and all, downward, forward and outward in the upper jaw, upward, forward and outward in the lower. If we examine sections of the alveolar process about the temporary teeth we shall see that this growth is accomplished by the formation of subperiosteal bone on the outer and inner surfaces, and subperidental bone at the margin of the process and around the alveolar.

In the production of the alveolar process the peridental membrane and the periosteum work together. As soon as a certain amount of solid layers have been formed, large absorptions occur, which are partly rebuilt by concentric or Haversian system lamellæ, which may be again partly rebuilt and destroyed. The important factor is that the teeth are moving in an occlusal direction and the bone is being built and rebuilt under the

influence of the mechanical conditions, so that at the later stages of their use the bone of the temporary alveolar process shows an immense number of formations at different periods. The growth of the permanent tooth does not cause absorptions simply of the bone forming the immediate wall of its crypt but osteoclasts appear all through the bone enlarging the spaces and opening up the structure. Apparently the bone is weakened in this way until what is left can spring under the force and then a new formation is begun to strengthen the tissue.

I have been especially impressed with the way the force exerted by the growth of the teeth in the crypt is responded to all through the substance of the bone covering them or in fact throughout the jaw. The result of these tissue changes is that when the temporary teeth are finally pushed off there is only a remnant of the temporary alveolar process left, and to this additions are at once started to attach the erupting permanent tooth. The influence of the growth of unerupted teeth continues to cause growth of bone and movements of the previously erupted teeth until the third molars have taken their places. During all of this period the action of muscles has been reacting on the bone. First, the muscles of mastication attached to the ramus and the coronoid process rest against the digastrics, geniohyoids and geniohyoglossi attached to the anterior part, the teeth and especially the first molars acting as the fulcrum. It is apparent, therefore, that if the first molars are in abnormal relation the position of the fulcrum is shifted, and the balance of the forces is disturbed, and it is very apparent that if the lower first molars are mesial of their normal relation the result is an overdevelopment of the mandible; if they are distal there is an underdevelopment. This is the necessary result of the changed distribution of forces in response to which bone is formed.

The effect of the function of swallowing, I believe, has not been appreciated. Every normal person swallows about once every two minutes. In each set of muscular contractions which constitute the act there is a distinct and considerable thrust against the lingual surfaces of the bones and the teeth. Every thrust is a stimulus to the connective tissue cells. The mouth if normally closed is entirely occupied by the tongue, and the base of the tongue is held against the palate and the pillars of the fauces in such a way that a partial vacuum is produced, which assists in the support of the weight of the mandible. This constitutes a mechanical impulse to the growth of bone which is very important in lowering the roof of the mouth and consequently increasing the depth of the nasal cavity from above downward.

The normal action of the lips and cheeks is a most important factor, as we are reminded by the disturbance of growth caused by abnormal function of these muscles. Finally, to sum up the entire matter, I have endeavored to show that both phylogenetically and ontogenetically, bone is produced in response to mechanical stimuli; that in bone formation living cells produce formed material to give strength and that the vital activity of these cells is excited in response to mechanical influences. We have examined some of the many sources of force or energy which affect the vital activity of the cells, and as a result of these considerations we may say that the adult bones are the result of all the forces exerted on them and distributed through their substance by the occlusion of the teeth. If the occlusion is normal the forces are perfectly balanced, and a harmonious and symmetrical development is the result. In proportion

as the occlusion deviates from the normal there is a disturbance of the harmony of development. The preservation of normal occlusion is necessary therefore not only for the proper mastication of food, but for the proper development of the face and proper function of respiration and swallowing.

ABSTRACT OF DISCUSSION

DR. M. H. FLETCHER, Cincinnati: I have done some of this class of work, and I have derived an enormous amount of pleasure and profit out of it. Those who have tried to do work of this character know that it entails an enormous amount of labor. A filling which may be too high, or the moving of teeth, or the treatment of the diseases of the sockets, and in fact almost everything we do in the matter of treatment of live tissue, brings these laws into play. I have been especially interested lately in the growth and repair of the cementum, and in several places Dr. Noyes has shown features that are especially instructive to me. I should like to see specimens more in detail as to the growth of cementum—where it begins and where it ends. The tissues lying about the roots of the teeth are subject to disease and repair to a marked degree, and we must understand these laws that we may intelligently treat diseases of the bones and teeth.

DR. B. E. LISCHER, St. Louis: I yield to none in my appreciation of the valuable contribution to dental science which Dr. Noyes has given us. I question one point, however, on which he laid much stress while explaining some of the slides on the screen. I refer to the theory of the elongation of roots and their probable rôle as a mechanical factor in the dentitional process. It was advocated many years ago by Wedl and since found wanting. Other theories proposed as a plausible explanation of the mechanism of eruption are the pressure theory (pressure of succedaneous teeth), the alveolar theory of Albrecht, the granular theory of Baume, the pulp theory of Wallisch, the functional theory of Robin and the blood-pressure theory of Constant, also as modified by Tomes. The latter is the only accepted one. The objections to the theory of the elongation of roots are as follows: (a) many impacted teeth with fully developed roots never erupt; (b) in the crocodile the developing teeth travel sideways for a considerable distance at right angles to the long axes of the roots; (c) most teeth in the course of eruption travel a greater distance than the entire length of their root or roots; (d) many teeth are erupted before their roots are fully formed.

DR. STEWART L. MCCURDY, Pittsburg: These hypertrophies of bone come from inflammatory conditions, from irritation, or from the projection of bone into the tissues or into the muscles following accident. The presence of syphilis stimulates not only hyperostosis but also endosteitis, and in addition the growth of the entire shaft of the bone, the entire bone becomes involved. Then in another instance diminished growth of the shaft occurs, as in achondroplasia, yet the epiphyses grow just as though the shaft were normal. In other words, the epiphyses are supplied by blood-vessels from entirely different sources than the shaft. Again, there may be hyperostosis of the epiphysis of a long bone, the shaft remaining perfectly normal. This entire subject of growth and development of bone is much clearer in my mind since I have heard Dr. Noyes' paper. The architecture and the reconstruction of the bone bring to my mind most strongly the law of conservation. As nearly as I can repeat that law, it is: Bone is deposited in the various parts of the body as it is needed; then Nature immediately begins to reconstruct that bone, and when it is not needed absorption takes place to diminish the bone to the normal size to perform its function. This is Wolf's law.

DR. EUGENE S. TALBOT, Chicago: I think that Dr. Noyes has demonstrated that these forms of absorption are due to irritation. The point which Dr. Lischer makes is rather in Dr. Noyes' favor. All these conditions he mentions act as stimulants to bone development and assist in bone absorption and regeneration. In animals, the animal is either losing the function of bone, or he is developing rudimentary structures, so that cannot be considered here. Dr. Noyes has shown

absorption due to irritation. There are, however, two points on which he did not touch, and which Dr. McCurdy mentioned in regard to the bone development and absorption, and that is the nervous system. In the case of arrest of development we have arrest in ontogeny, due either to some condition *in utero* or to disease, such as scarlet fever, pneumonia, or any other constitutional disease early in life. On the other hand, large jaws, those measuring $2\frac{1}{2}$ inches in diameter, are due to want of resistance in phylogeny; in other words, arrest of development in phylogeny from the lower animals, such as the anthropoid apes, etc. In that case the large developed bones take the line at least resistance toward the lower vertebrates.

DR. M. H. FLETCHER, Cincinnati: I did not discuss the idea of pressure in the eruption of teeth or any other force, because I leave that just as I leave the differentiation of cell life in any other part of the body. If anyone can tell why a blade of grass grows, or why union of the male and female cell finally produces the epiblast, the mesoblast and the hypoblast, or why the presence of the dentin against the periosteum of the dental follicle induces a layer of cells which produces cementum then I think we are near to answering these questions. The practical feature I get from this is that under certain conditions Nature will reproduce certain tissue, and that in order to reproduce the new she must first carry away the old. Now it seems more important for us to know in what condition to put tissues in order to have repair, when there is broken-down tissue from disease, and the presentation of Dr. Noyes is a beautiful display of these laws.

DR. FREDERICK NOYES, Chicago: I did not emphasize the elongations of the roots alone, and I did not emphasize the succedaneous teeth alone, or any one thing alone, but what I did try to state was that connective tissues are tissues of environment, and that they respond to mechanical stimuli, and that the elongation of the root necessarily produces a mechanical stimulus. It cannot help it. Consider for a moment the form of the root, the relation to the surrounding tissues and the fact that there is multiplication of cells in that space which produces force. So long as the root continues to grow it must exert a mechanical influence. The objections cited were that action and reaction are equally opposed in direction and if the resistance above the tooth is greater than the resistance at the apex, the apex will move and not the crown. I emphasized the fact that in the development of the tooth the floor of the crypt was pushed through the cancellous bone and did not react on the plate above until it reached the cortical plate at the lower border of the jaw, and the resistance was greater below than above and then the other end had to move.

DR. MCCURDY brought out several things which I could not go into, and, in particular, the idea that with mechanical stimulus without nourishment, growth is impossible. There may be mechanical stimulus, but if the blood-supply be cut off there can not be growth. I did not mention this because it is an inhibiting factor, not a developing factor. It is an important factor in the discussion, however.

DR. TALBOT referred to the influence of the nervous system, and that is a field which has important bearings in this connection. The point cited by Dr. McCurdy, that we would have changes throughout the substance of the bone beyond the region of the inflammation, indicates a nerve connection between the two, which, when a growth is set up in this position in response to mechanical stimulus, continues its action in a field beyond. In the same way, an irritation of one tooth may cause development of dentin within the pulp chambers of all the teeth within the same nerve-supply.

The most important thing which I wanted to bring out was that from a phylogenetic standpoint, from the beginning of evolution apparently connective tissues respond to mechanical conditions. Dr. Brooks stated as the greatest characteristic of life, the ability of adaptation to environment, and the characteristic of the connective tissue cell is to adapt itself to mechanical conditions. Following that idea through, we find that it is the mechanical influence to which the vital activity of the connective tissue cell responds with the changes in the structure of the tissue both in reconstruction and in production.

ELECTRIC ANALGESIA, AND ELECTRIC RESUSCITATION AFTER HEART FAILURE UNDER CHLOROFORM OR ELECTROCUTION*

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Electric analgesia was applied successfully for the first time, in animal, then in human surgery, by myself. Successful local application of this analgesia in human surgery is reported by Dr. M. M. Johnson.¹ I administered this analgesia. I have reported successful application of this analgesia in animal surgery and electric sleep in clinical work in all the issues of the *Journal of Mental Pathology*, commencing with 1906. The part of this paper treating of electric analgesia and sleep will be published elsewhere for reason of want of space here.

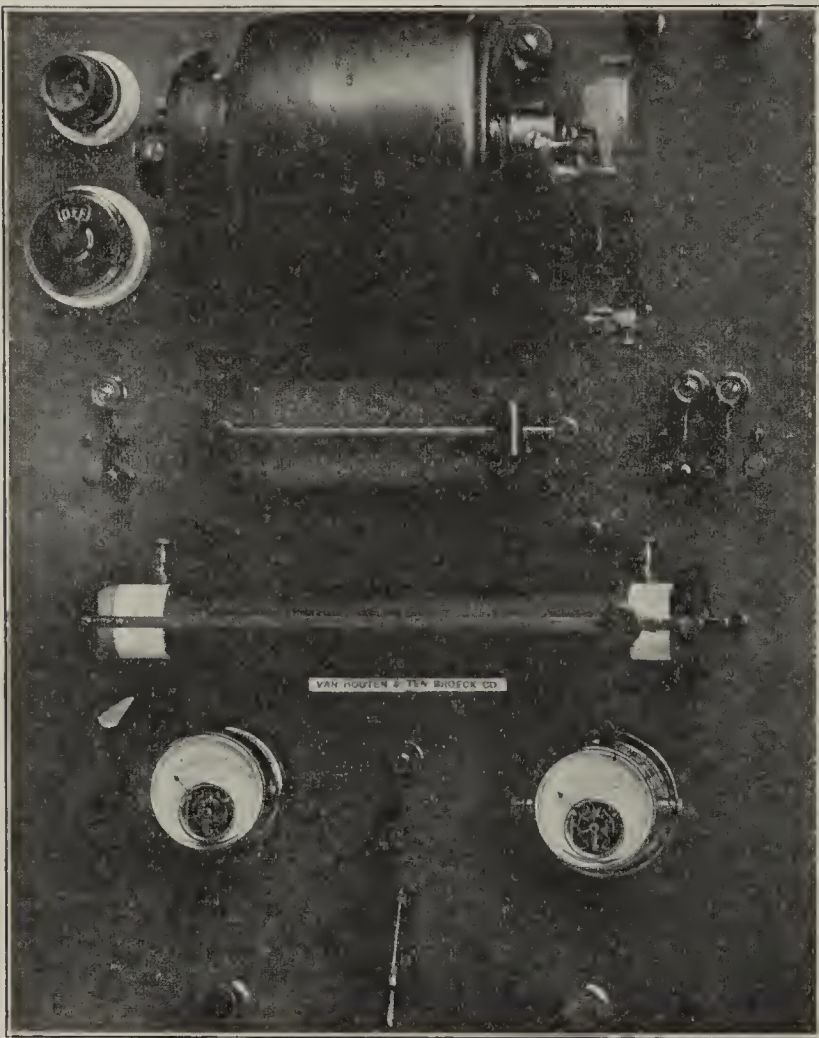


Fig. 1.—Author's model of wheel interrupter with fixed period of passage of current.

It is possible to resuscitate, by means of electric currents, subjects in a condition of apparent death caused by chloroform, ether, morphin, electrocution, etc. The first important researches into resuscitation of electrocuted subjects were made at about the same time by Professor Battelli² in Europe, and Dr. R. H. Cunningham, in this country.³ Both authors used enormous currents for causing single electric shocks with which they attempted to restore life after ventricular tremulation had set in. Professor Battelli used 4,800 and

2,400 volts respectively, of alternating currents (amperage not stated). The means was not practical because one shock caused with such high voltage was all the heart could stand; a second shock killed the animal definitely, if it was not already dead.

Professors Leduc and Rouix⁴ tried to resuscitate animals by means of direct interrupted currents of low tension, but they committed their predecessors' error of including the animal's head in the circuit. Besides, they used the lethal current for producing the shocks. The method was useless in cases of dogs.

While experimenting on the cerebral circulation during electric epilepsy⁵ I saw, through a trephined opening in the skull, that every electric shock caused profound anemia of the brain at the time of the closure of the circuit. This led me to exclude the animal's head from the circuit during the rhythmic excitations, in order to exclude the medulla oblongata with the cardiac and respiratory centers and avoid any further anemia of these centers during apparent death, while the electric rhythmic excitations were being practiced. I also reduced the current to minimal doses for the first rhythmic excitations, because I found that useful cardiac and respiratory excitability was rapidly exhausted within the few minutes of apparent death. The maximum potential at the end of the resuscitation did not exceed

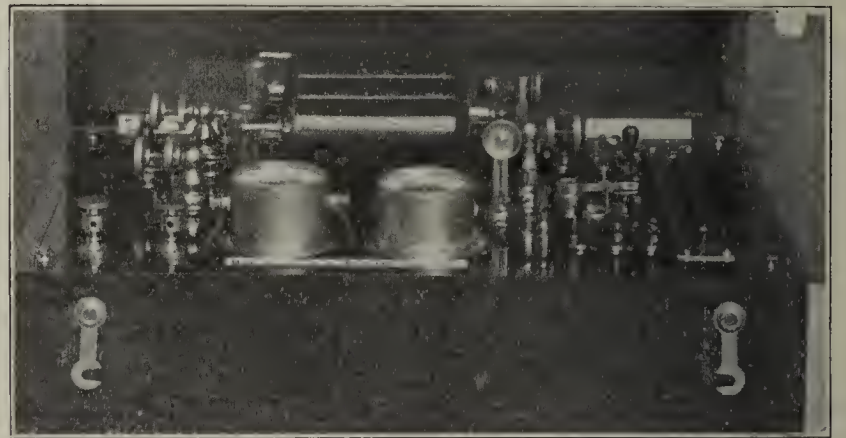


Fig. 2.—Author's triple interrupter of direct currents (20,000 to 40,000 interruptions). For resuscitation in ambulance service.

120 volts. Even this is too high voltage: in dogs it causes marked vagus stimulation so that the heart beats are very slow during a long period of time after resuscitation; and the wave form of the beat does not resemble the normal form. In ordinary severe cases, 70 volts is a good maximum potential.⁶

The method of resuscitation consists in causing artificial blood-pressure and respirations by means of rhythmic electric excitations, until normal function is restored. My choice electric current is the one I use for causing electric sleep and analgesia: a direct current, inter-

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Johnson, M. M.: *The Med. Rec.*, April 23, 1910.

2. Battelli, F., and Prevost, J. L.: *La mort par les courants électriques: courant alternatif à bas voltage et à haute tension*, *Jour. de physiol. et de path. gén.*, May, 1899.

3. Cunningham, R. H.: *The Cause of Death from Industrial Electric Currents*, *New York Med. Jour.*, 1899, lxx.

4. Quoted by Robinovitch, Louise G., in *Sommeil électrique épilepsie électrique et électrocution*. Thèse, Paris, 1906.

5. Robinovitch, Louise G.: *General and Cerebral Blood-Pressure During an Attack of Electric Epilepsy*, *Jour. of Ment. Path.*, 1907, viii, No. 3.

6. Robinovitch, Louise G.: *Method of Resuscitating Animals in a Condition of Cardiac and Respiratory Syncope Caused by Chloroform*, *Jour. Ment. Path.*, 1907, viii, No. 3. *Method of Resuscitating Electrocuted Animals*, *Ibid*; *Méthode de rappel à la vie des animaux en syncope chloroformique et des animaux en mort apparente causée par l'électrocution*. Effets différents de différents courants électriques Importance d'exclusion du circuit électrique de la tête de l'animal pendant les excitations rythmiques, *Compt. rend. Soc. de biol.*, Feb. 1, 1908; *De l'emploi des courants électriques pour le rappel à la vie, dans les cas de mort apparente causée par le chloroforme ou par l'électrocution*. Nécessité d'exclusion du circuit la tête, pendant les excitations rythmiques. Expériences pratiquées sur le chien. Application clinique, *Bull. Soc. clin. de méd. ment.*, November, 1908; *Resuscitation of Subjects in a Condition of Apparent Death, etc.*, *Jour. Ment. Path.*, 1909, viii, No. 4.

rupted from 6,000 to 8,000 times per minute, period 1/10. Next in value is a direct current interrupted from 25,000 to 40,000 times per minute with my triple interrupter.⁷ The last choice, and the one that I do not recommend if the first two can be had, is an induction current obtained with my special model of induction coil, an ordinary Dubois-Reymond coil, the special feature of which is the diameter of the wire of the coil, 1.2 mm. for the primary and 0.6 mm. for the secondary coil.⁸ In cases of grave forms of apparent death, currents supplied by coils with fine wire will kill the animal, if it is not already dead.⁹ Induction currents are alternating currents, the wave form of the current running above and below the base line. The physiologic effects of anodal and cathodal stimulations are distinctly different; the anodal stimulations are particularly dangerous in pulmonary and cardiac area when the current is obtained from a secondary coil, the wire of which is finer than 0.6 mm. Alternating and direct currents are deadly to cellular life, especially during apparent death.¹⁰ But if nothing else can be had, rhythmic excitations may be practiced with these currents, rather than make no attempt to save life.

PROCEDURE

The dog's back is shaven in two places—on the back of the chest covering the pulmonary area and over the loins. The negative electrode is applied under the chest, the upper border reaching to the root of the neck. It is dangerous to use the positive pole under the chest. The positive electrode is applied over the loins. The electrodes measure 12 by 25 cm. for dogs of large size. They are made of zinc and are covered with a thick layer of absorbent cotton wet in a salt solution, 7 per 1,000. In man the chest electrode measures 25 by 30 cm.

Chloroforming is performed intensively, admitting little or no air and causing arrest of respiration and heart beats as quickly as possible. When breathing is no longer registered by the pneumograph and the manometer does not register any blood-pressure, the chloroforming is discontinued at once. An assistant catches hold of the animal's tongue with a tongue forceps, cleanses the mouth of mucus and pulls the tongue outward to allow free access of air during the rhythmic excitations.

The instrumentation with the preferred current is the same as that used for electric sleep. The operator now opens the switch of the cathode line, turns on a current of some 20 to 25 volts by means of the potentiometer. The circuit is then closed by means of the switch during a period of a fraction of a second. A deep inspiratory movement takes place. The mouth opens, the flabby, lifeless tongue that was lying on the roof of the mouth (the animal is on its back) contracts and is drawn inward; the fore paws are thrust upward with marked force; the posterior limbs are extended; the diaphragm is pushed downward and all the respiratory muscles enter into play. The chest is fully expanded and the pneumograph registers an ample artificial inspiration. The manometer

may also register an artificial blood-pressure; but in cases of severe cardiac syncope the first few rhythmic excitations cause respiratory reaction without artificial blood-pressure. The operator breaks the circuit by opening the switch. This is followed by a deep expiratory movement, and all the muscles that entered into play to cause the artificial inspiration are now again flabby and lifeless; the expanded chest collapses and the pneumograph registers an ample expiration; the anterior paws fall one on each side of the body, the tongue falls to the roof of the mouth, lifeless, the mouth closes and the whole body is again lifeless and relaxed. The switch is kept open for a period of from one-half to one second, according to the gravity of the case. If the first voltage used caused an ample respiratory reaction and the manometer showed a momentary rise of blood-pressure, the succeeding rhythmic excitation is caused with the same voltage, but as a general rule it is necessary to increase the current to 30 volts or more; the excitations are now practiced with the increased current, the aim being to obtain ample respiratory reaction and blood-pressure with this minimal voltage within the shortest possible time, because useful cardiac excitability is quickly exhausted during apparent death. It is generally necessary to increase the current to 35, 40, 50, 60 and 70 volts within the course of three or more minutes of apparent death; the excitations are being practiced while the voltage is being increased. In favorable cases ample respiratory reaction and artificial blood-pressure are soon established, then accompanied by feeble spontaneous respiratory and cardiac reactions; these soon increase in amplitude; they are alternated with ample artificial reactions if necessary, taking care not to encroach on the spontaneous heart-beats and respirations, but rather precede or follow them. The operator judges by the spontaneous cardiac and respiratory reactions when it is advisable to discontinue the rhythmic excitations. If they are discontinued too soon death may set in after resuscitation, because in chloroform poisoning the blood is asphyxiated, dark; the feeble respirations and heart-beats may not be sufficient to cause useful oxygenation of the blood. But once ample spontaneous reactions are established the carotid artery is tied, the wound closed and the animal lives without showing any ill effects. I have kept such dogs during a period of one year and longer after resuscitation; they were in excellent condition.

LIMITATIONS

The period of apparent death is short; four minutes (including the time of the rhythmic excitations) is a long time, and five minutes is an exceedingly long period. But once resuscitated, the animal lives and shows no after-effects.

In chloroform poisoning death may take place in various ways: by respiratory arrest and final cardiac failure. This is the usual form; by primary cardiac failure;¹¹ this is a rare form in dogs, but quite familiar to surgeons in human beings, by simultaneous cardiac and respiratory arrest. In the majority of cases death sets in by respiratory paralysis, followed by cardiac failure. The accompanying tracing (Fig. 3) shows the usual form of apparent death from chloroform and the mode of resuscitation by means of electric rhythmic excitations with a gradually increasing current. The amperage

7. Robinovitch, Louise G.: Triple Interrupter of Direct Currents for Resuscitation. Portable Model for Ambulance Service. Jour. Ment. Path., 1909, viii, No. 4.

8. Robinovitch, Louise G.: Bobine à induction pour rappel à la vie, etc., Bull. Société clin. de méd. ment., November, 1908; Induction coil for Purposes of Resuscitation, Jour., Ment. Path., 1909, viii, No. 4.

9. Robinovitch, Louise G.: Thesis cited (Note 4), p. 82 and trace 26.

10. Robinovitch, Louise G.: Different Effects of Various Electric Currents for Purposes of Resuscitation, etc., Jour. Ment. Path., 1909, viii, No. 4.

11. The tracings of resuscitation after primary cardiac syncope from chloroform and ventricular tremulation caused by electrocution are omitted here for want of space.

cannot be read in these experiments because the closures are too short, but there is generally between 4 and 40 milliamperes, corresponding to the currents used—20 and 70 volts. This amperage is obtained on dogs sacrificed for this purpose, so that the closures may be prolonged.

Electrocuted dogs are resuscitated less easily than are chloroformed dogs. It is especially difficult to resuscitate when ventricular tremulation sets in, but the tracing that I present¹¹ shows that resuscitation is possible even in this condition.

All experimenters on this subject agree that artificial respiration and the Sylvester method are useless when ventricular tremulation sets in.^{2, 3, 12} My method seems to give the best results known to-day for practical application, because it produces ample artificial blood-pressure as well as respiration.

APPLICATION IN ACCIDENTAL ELECTROCUTION

According to personal information given me by practical electricians both in Europe and this country, death does not always take place instantaneously in accidental electrocution with moderate industrial currents. The workingman generally touches the "live" wire with his hand or foot; contact is generally "bad," but it is sufficient to cause cardiac and respiratory paresis, from which the patient may die within from a few minutes to

able as regards the range of time during which the heart's action may be restored. Unfortunately, his method presents physiologic limitations; resuscitation after a period of seven minutes (in man), counting from the time of cardiac arrest, becomes useless, because the anemia of the brain during this time is fatal to the life of the brain cells; restoring heart action becomes useless from the point of view of restoration of life.

My method has the great advantage of simplicity; it does not necessitate opening the carotid artery and injecting a pint or so of solutions into the heart; it does not necessitate opening the trachea. The method may be applied immediately, when the first sign of cardiac or respiratory failure appears. Before an operation is commenced the electrodes may be put in their proper places under the patient; the chest electrode (25 by 30 cm., the loin electrode (12 by 25 cm.). The apparatus and chosen electric source should be in readiness before the operation is commenced.

The accompanying tracing (Fig. 3) shows that it is possible to resuscitate dogs after respiratory and cardiac function is no longer registered during a given period of time. It should not be assumed, however, that resuscitation is easy in all grave cases. There are not two subjects alike as regards physical vitality. For practical application in surgery the safest method is to commence practicing rhythmic electric excitations at the first sign

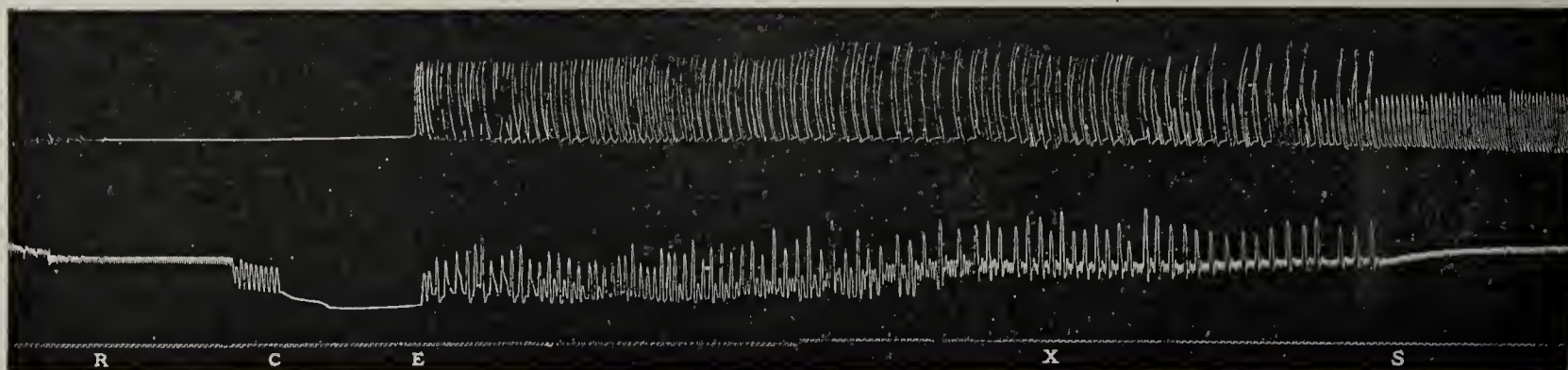


Fig. 3.—Tracings made during usual form of apparent death caused by intensive chloroforming in a dog. Upper tracing, respiration; second tracing, blood-pressure in carotid artery; third tracing, time; two lines indicate one second, during cardiac failure only. In rest of tracing: one line indicates one second. R, respiratory syncope; C, cardiac syncope; E, commencement of electric rhythmic excitations (direct current interrupted 8,000 times per minute, period 1/10); gradual increasing current from 20 to 65 volts. The ample respiratory and cardiac reactions are artificial, caused by the rhythmic excitations; then the small spontaneous heart-beats appear and alternate with the ample artificial ones. The cross shows where the first small spontaneous respiration appeared; ample artificial respirations alternate with the small spontaneous ones. S, synchronous respirations and heart-beats; final resuscitation.

one-half hour after the accident. These are facts observed in daily accidents, regardless of some experimenters' claim that all is well if the patient's heart beats and he breathes when taken out of the circuit.

The blood is asphyxiated, dark, after the slightest shock; a few rhythmic electric excitations will help to whip up the circulation and respiration if the excitations are practiced immediately following the accident or as soon as possible—before the patient is removed to a hospital. Without this help the patient may die when he is brought into the ward—some half hour after the accident. The blood remains asphyxiated even after resuscitation. This asphyxia may continue during many hours.

APPLICATION IN SURGERY

Direct and indirect cardiac massage has claimed its victims of chloroform poisoning in surgical work.¹³ Dr. Crile's method of resuscitation is brilliant and admir-

able as regards the range of time during which the heart's action may be restored. The surgeon does not fold his arms and wait until both the respiration and the heart have failed. In a series of experiments on dogs I commenced the rhythmic excitations a few seconds after respiratory syncope set in—in imitation of what a surgeon would do if he had a patient showing signs of syncope from chloroform or ether. Resuscitation was easy and complete in these experiments after a few rhythmic excitations. Resuscitation is more difficult, of course, when heart failure dominates the accident.

Considered in its proper light, the method should really serve as a preventive measure against grave forms of syncope, because a few rhythmic excitations, practiced in time, promptly oxygenate the blood by reason of the ample respiratory and cardiac reactions.

CLINICAL APPLICATION

November, 1908, I had occasion to revive a patient in a condition of profound syncope caused by chronic morphin poisoning. She was in Dr. Magnan's service, Ste. Anne Asylum, Paris. Dr. Magnan had revived her after she had had a first attack of syncope. A second attack

12. Rodenwaldt, Ernest: Ueber Verletzungen durch elektrische Starkstroeme vom gerichtsaerztlichen Standpunkte, Vrtljschr. f. gerichtl. Med. 3 Folge, xxxvii, 1.

13. White, Charles S.: The Rôle of Heart Massage in Surgery, Surg., Gynec. and Obst., October, 1909.

set in within a few minutes; his assistants attempted to revive her by applying the Sylvester method and rhythmic traction of the tongue; this proved useless during a period of twenty minutes. The patient's face became "blue" from asphyxia. As is known in morphin poisoning, the respiratory center is paralyzed first, heart failure following, as is the case in ordinary asphyxia. The patient's respirations were about 3 or 4 per minute; the pulse was hardly perceptible and death seemed to be imminent. I applied electric rhythmic excitations; the patient revived definitely after a period of from twenty-five to thirty seconds.^{8, 14}

OPERATION FOR RETRODISPLACEMENT OF THE UTERUS*

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PHILADELPHIA

I am not greatly interested in the minute anatomy, the exact relative normal position of the organ and ligaments when I am faced with a displacement of the uterus. There are so many factors entering into the new position, and so much uncertainty as to which one or which combination causes the trouble that the question to be solved is rather, how the uterus can be held in such a position as to relieve the untoward symptoms and at the same time do no future damage. It matters little to us whether the means used are the natural ones or not. As a matter of fact, this is exactly what is done by each and every operator without exception, no matter how learnedly in the first instance he discusses the natural supports.

In further discussion I shall merely present the procedure with which I have been experimenting for the past twelve years or so, which is, I think, fully established and amply justified by results, and which has taken the place of all other procedures in my practice for this class of cases.

The operation is not new. I first referred to it in a paper in 1902 after a few years' trial only. I have performed it almost constantly ever since, modifying it here and there at times as apparent difficulties arose and as it seemed necessary to overcome certain objections and certain faults in results; and I find at the present time a completed technic which is, I think, perfect.

Primarily the operation was done empirically with no idea of its true mechanics; and, this being so, it may readily be appreciated why apparent difficulties were hard to overcome and why changes were necessarily but blindly made from time to time. And yet, with it all, the general principles have remained the same from the first, viz., "the round ligaments brought through an opening made in the broad ligaments and united behind and to the uterus." The proposition is simple, the resulting advantages being manifest only when the procedure is properly carried out. The mechanism is plain, but has never to my knowledge been fully appreciated or fully pointed out, even by Webster, who has for the same length of time performed an operation with exactly the same principles but varying slightly in technic.

What is the position and condition of the uterus in the normal female pelvis? The fundus is bent slightly

on the cervix and well forward of the direct axis of the pelvis, it is freely movable in all directions within certain well-defined limits, moving always with the cervix as a movable pivot. The whole organ is so high in the pelvis as to allow the top of the fundus to arise well above the iliopectineal lines of the bony pelvis. The ovaries are suspended correspondingly high and rest on the upper posterior portion of the broad ligaments. Any operation which does not take these conditions fully into consideration and which does not leave the organs approximately in these conditions and positions cannot be considered as ideal.

In all the confusion of anatomy, physiology and pathology, sight is lost of the fact that in the vast majority of cases there is a general relaxation and stretching of all the supports, often of the whole of the abdominal contents, and that the uterus as well as the ovaries lie down, as it were, in the pelvis limp and inert; the stretching of the ligaments is that of overstretched rubber, not that of hypertrophy of tissue which may subsequently undergo involution. The loss of support is

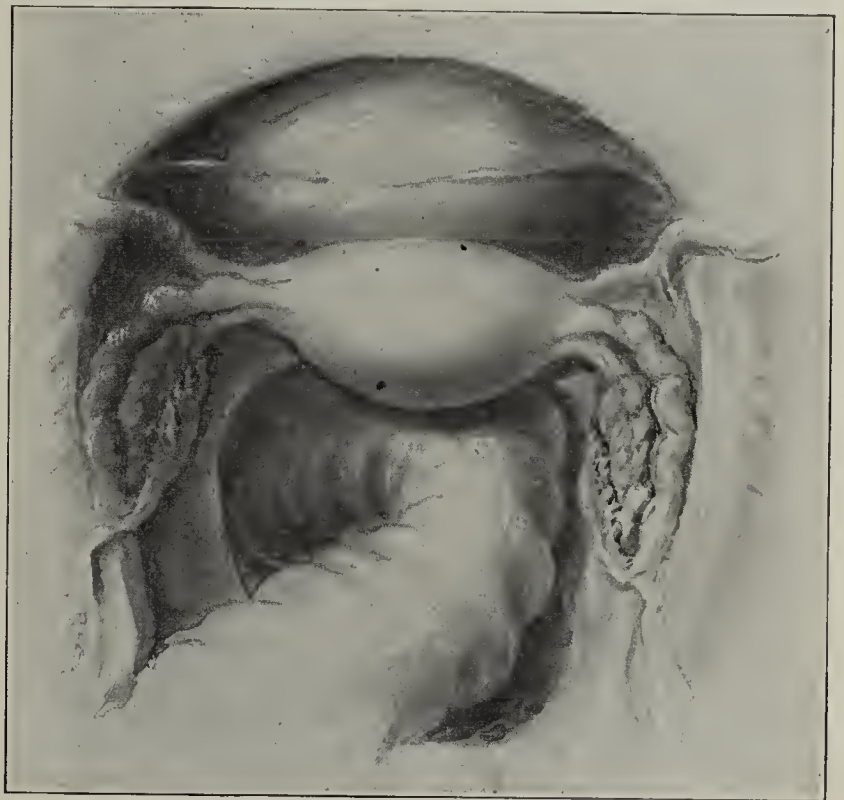


Fig. 1.—Uterus and appendages low in the pelvis and inclined backward. This is brought out more clearly by contrasting Figure 1 with Figure 2, in which one side is raised by the fingers well up above the iliopectineal lines while the opposite side remains low down in the pelvis.

a complex one, not merely the defect of one ligament; and the ratio of loss in each individual element of support is impossible of estimation, nor is it worth while to try to estimate it. The point is not to tell just what is the degree of relaxation of one of the uterosacral ligaments or both, what that of the right uterovesical ligament or both, or what that of the broad ligaments, and then to attempt to devise an operation for each and all these supposed defects, but to recognize the fact that before us is a group of organs which for some reason or other (it matters not what) are in a false position and being so are exposed to traumatism and other influences which will eventually or have already brought about a train of symptoms which it is very desirable to abate. These organs having lost the use of their natural supports, can we successfully substitute others to take their place? These are the lines on which I have worked most successfully and this is the basis of the accompanying operation. The round ligaments are used as artificial supports in an artificial manner to accomplish

14. Robinovitch, Louise G.: Resuscitation of a Woman in Profound Syncope Caused by Chronic Morphin Poisoning, Jour. Ment. Path., 1909, viii, No. 4.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

what Nature originally accomplished, viz., "a uterus with the fundus forward of the direct line of the axis of the pelvis, freely movable in all directions on the cervix as a movable pivot, the fundus raised up to and above the iliopectineal lines and the ovaries swung correspondingly high and free from all attachments on the posterior side of the broad ligaments." The simple procedure of drawing the round ligaments around the posterior side of the uterus, fastening them together as they meet, and then fastening them to the uterus itself

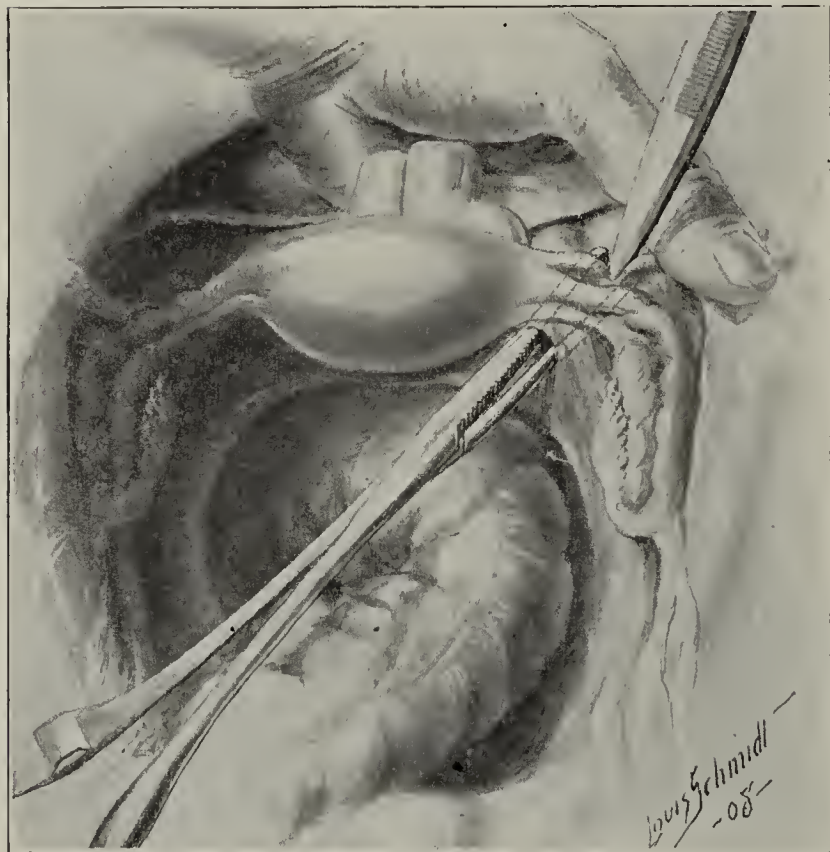


Fig. 2.—Fundus drawn well forward and away from the sigmoid flexure; hemostatic forceps perforating the broad ligament from behind to its anterior aspect, on which lies the round ligament. A pair of tissue forceps is grasping the round ligament and carrying it into the bite of the perforating hemostatic forceps.

at a selected point, fulfils perfectly each and every one of these indications.

A study of the accompanying illustrations, which were drawn at the operating-table, will render the operation and its results perfectly clear.

Contrast Figure 1 with Figure 5 and note the following points: the distance from the fundus to the sigmoid, the distance from the fundus to the pubis, the height of the fundus and ovaries as shown by the shadows and the iliopectineal lines; also the uterosacral ligaments.

It will readily be recognized how well forward of the axis of the pelvis the fundus is brought, how high it rises in the pelvis and how high are the ovaries and Fallopian tubes.

The question at once arises: What forces are brought into play to bring these organs into such perfect position and how do they act to retain them there?

The uterus is upheld by the encircling round ligaments (Fig. 5, *a-b*).

The ovaries and Fallopian tube are upheld by the passage of the round ligaments under the ovarian ligaments (Fig. 5, *d*).

The uterus is held forward by three forces, viz.:

1. The pressure of the intra-abdominal force on its posterior aspect.
2. The resistance of the encircling band of round ligaments (Figs. 7, 8, *B-C*; Fig. 5, *a-b*).

3. The pull forward and downward of the round ligaments at their attachment at the uterine cornua (Figs. 5 and 8, *b*; Fig. 9, *A*).

The whole structure is steadied by those portions of the round ligament running to the normal abdominal attachments (Fig. 8, *A-C*; Fig. 5, *a-c*).

It will be noted by reference to the illustrations (Fig. 2) that the forceps perforate the broad ligament close to the uterus and directly under the ovarian ligament. This is essential to the best results. A too low perforation in the broad ligament will give an unsatisfactory result. When the round ligaments are adjusted and brought snugly together posteriorly the ovarian ligament rests on each round ligament and, without so much as touching the ovary or Fallopian tube, always and with absolute certainty insures the proper and safe elevation of those organs. This is the only operation of which I know that secures this result; and if one recognizes the

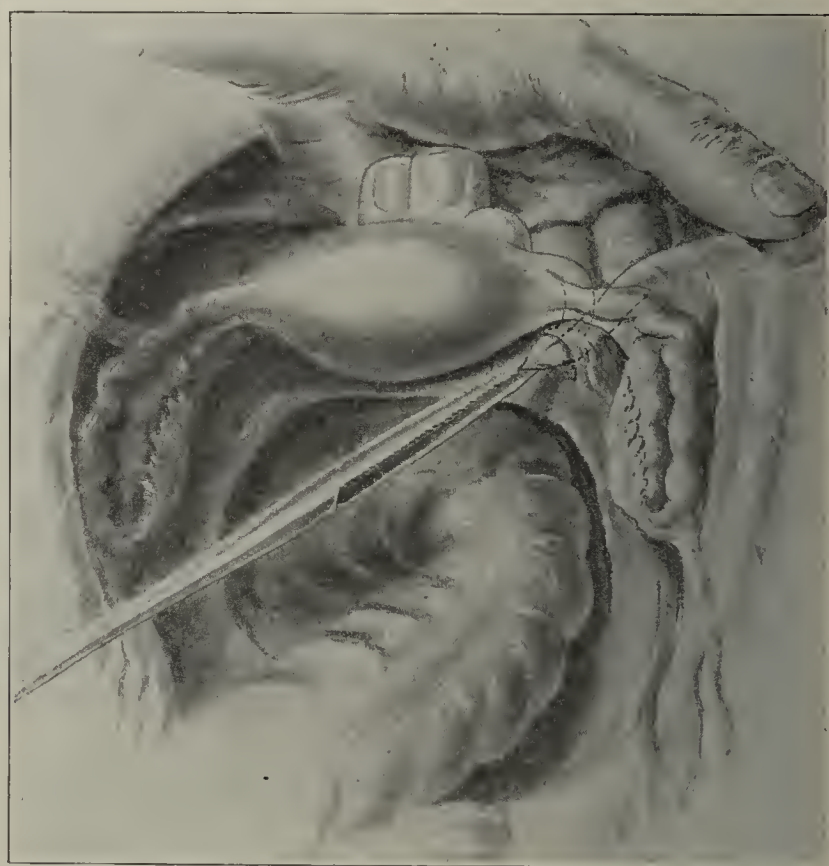


Fig. 3.—Round ligament in the grasp of the hemostatic forceps and in process of being drawn through the broad ligament to its posterior aspect.

truth that it is often the prolapsed ovary which induces the symptoms, one must readily recognize the great advantage of this. When the uterus is thrown forward by almost any other operation, the ovary will usually rise in the pelvis with it, and the displacement of the two organs will be corrected at one and the same time. But every operator will recognize the fact that there is a certain large group in which the ovarian ligaments are relatively more stretched than those of the uterus, and in spite of the fundus being brought forward the ovaries are still prolapsed.

The elevation of the ovaries is not accomplished by the general elevation of the uterus alone, but is materially aided by the rolling forward a quarter of a circle or more of the top of the broad ligament owing to the pull backward of the round ligament as it passes through the hole in the broad ligament, and the more the posterior pull of the round ligament the greater the tendency to the rolling forward of the top of the broad ligament and the consequent elevation of the ovary and Fallopian tube. I have in no case seen this occur to such an extent as in any way to endanger the patency

of the tube. This whole mechanism is perfectly plain when seen in the living subject and is perfectly compatible with every known mechanical law.

The second fact accomplished is that of the elevation of the uterus and everything connected with it (Fig. 5). This is brought about, of course, on principles somewhat similar to those which would be involved in grasping a boy in one's arms and lifting him up. This requires fixed points from which to act. In the operation these points are the attachment of the round ligaments to the abdominal wall, their attachments to the fundus uteri, their attachment throughout their whole course through the broad ligaments, and, finally, the artificial attachments made by the operator as they are brought together behind the uterus and stitched to that organ.

It has been said in criticism that the round ligaments will be stretched by the weight put on them and that the weakest part of the ligament, viz., the abdominal wall end, is the part which carries the whole weight. Only ignorance of the mechanics and the fact that the critic has not performed the operation can justify this criticism. If it be contended and believed that the weight of the uterus and pelvic organs can be sustained by the longitudinal pull on the round ligaments, as is the case in the Gilliam, the Mayo, the Montgomery, the Alexander and every other modification of this class of pure

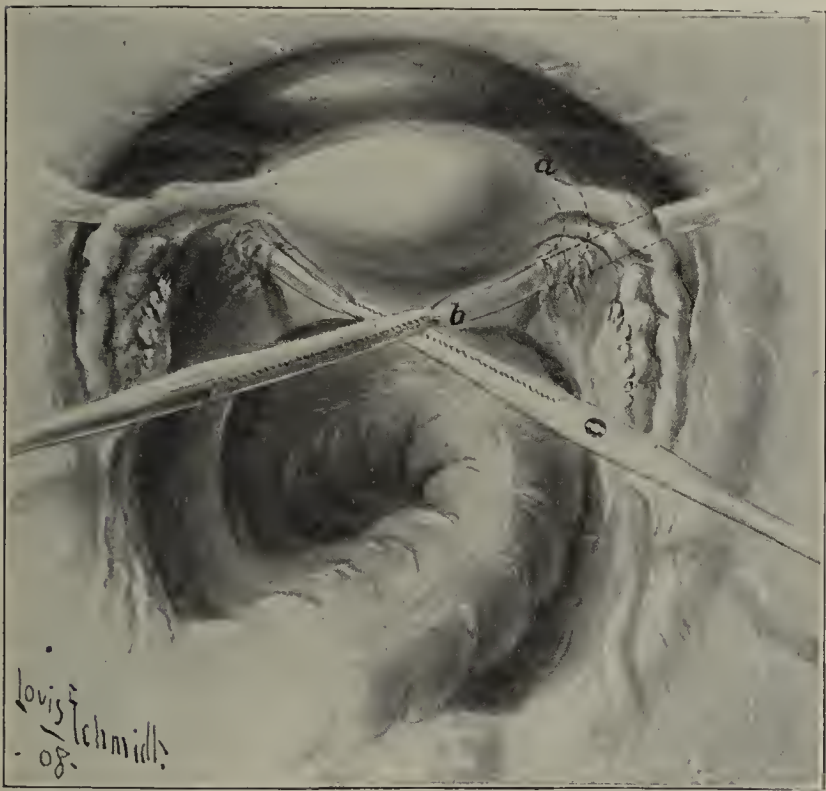


Fig. 4.—Both round ligaments drawn to the posterior portion of the broad ligament and approaching each other.

suspension operations, in how utterly prejudiced a condition must be the mind which fails to grasp the fact that the downward pull of the organs against the lateral resistance of the full length of the ligament has only a fraction of the chance of overstretching which obtains in the longitudinal pull! In the operations of the class just mentioned, pure and simple suspension operations all of them, the full success of the result depends entirely on the suspension, not another element entering into the result. Furthermore, in these operations one and all the pelvic organs are lifted by sheer force into the abdominal cavity, there to be suspended in a position they were never intended to be, with lessened mobility and the full weight of the downward drag, permanently dependent on the integrity of the round ligaments alone.

Contrast this condition with the operation under consideration. The uterus is lifted up and sustained by the encircling round ligaments as shown in Figures 6, 7 and 8. But only temporarily is this full force put on the round ligament. The fundus is thrown forward of its center of gravity, and as the patient lies on the operating-table with the abdomen open the fundus remains forward where the hand places it (Fig. 5). In this position the intra-abdominal force is exerted on the posterior aspect of the fundus, forcing it the further forward and the more surely holding it there. Gravity also aids this action.

What occurs when the patient arises? On certain movements the fundus has a tendency to go backward. Should this occur the intra-abdominal force would soon be exerted on the anterior aspect of the fundus and the uterus would be forced to a posterior position.

In studying the mechanism of the forces at play it is soon evident that two things prevent this accident.

1. The sling back of the uterus formed by the round ligaments properly adjusted meets the force temporarily urging the fundus posteriorly and obstructs that action.

2. The force of the fundus against the encircling round ligaments causes a pull on the ligaments at their attachments to the anterior uterine wall; and the harder this pull the greater the tendency to draw the top of the fundus forward and downward and to antagonize the tendency backward.

In other words, we have two forces acting against and neutralizing the efforts of the uterus to go backward, and it is impossible for the one to be brought into play without the other instantly operating to aid it.

Until some effort of the individual causes the situation to arise which attempts to force the uterus backward,

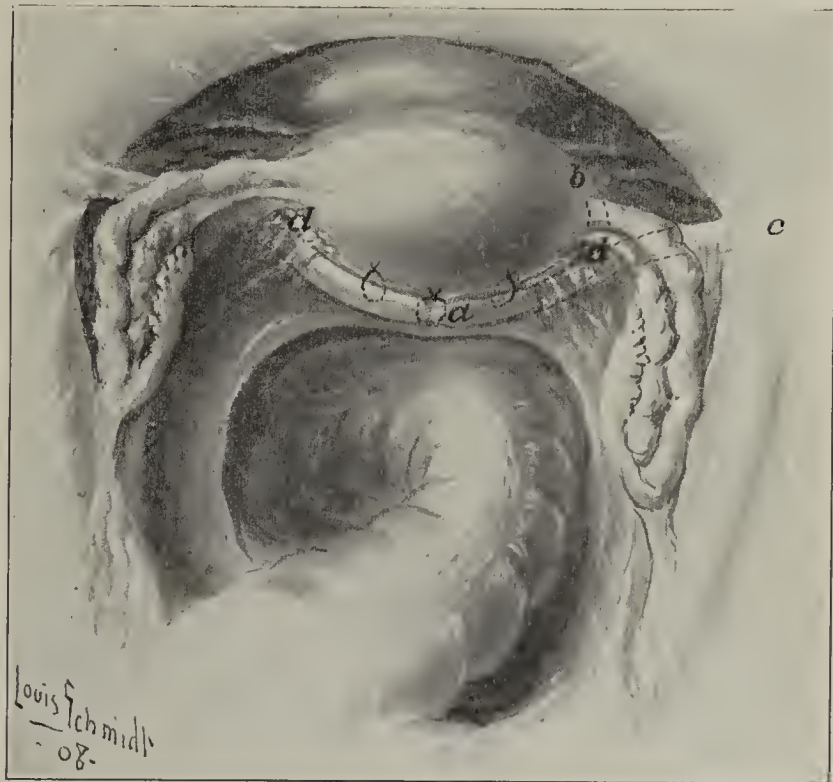


Fig. 5.—The two round ligaments united to each other, and, at two points, to the uterus itself; the operation is completed.

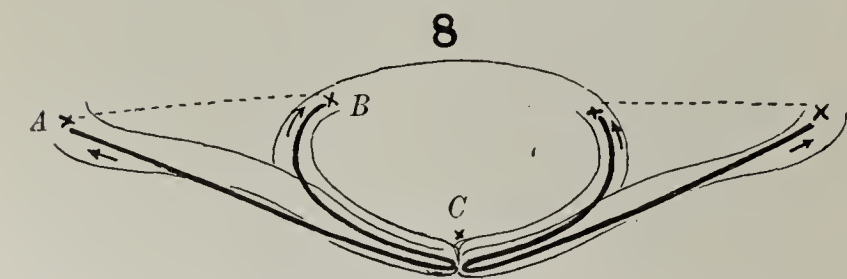
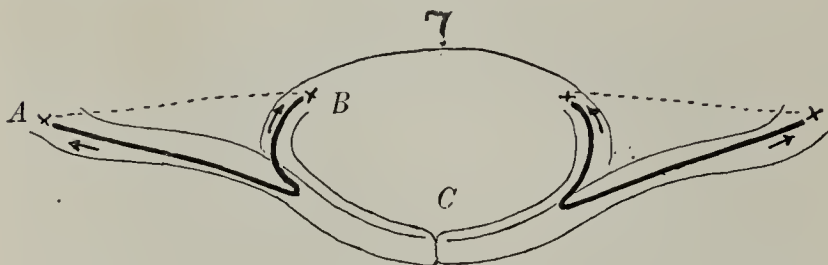
the uterus remains quietly forward by combination of gravity and intra-abdominal force, and no tension whatever, other than that which is being exerted to uphold the uterus, is put on the round ligaments. In other words, for the most part there is no pressure exerted on the round ligament at all; it is only called on intermittently and temporarily to exert itself and when it does so at all it offers two points of resistance: in the obstruction posteriorly and in the pull forward and downward

at the uterine cornua, thus subdividing the work put on it.

In all the suspension operations, without exception, the full weight of the pelvic organs are permanently dragging on the normal ligaments in the most vulnerable direction. Those parts of the round ligament running to the abdominal walls are only slightly affected in this operation; they act mostly as guy-ropes to the whole structure, as similar ropes act in holding up a derrick, and in this operation brought into action only intermittently and temporarily. There is therefore absolutely no chance of their becoming overstretched, as has been suggested. At one time in the process of the evolution of the operation I severed these ends and did not use



Fig. 6.—Uterus removed by amputation one year after operation for displacement, the symptoms not having been relieved. The round ligament can be plainly seen encircling the uterus and attached to that organ.



Figs. 7 and 8.—Diagrams showing the ligaments partially and completely drawn in place, as is done in the operation.

them at all, so little did they seem to enter into the mechanism.

For a full understanding of these important forces, study Figure 9. This represents a lateral section of the uterus, broad ligament and appendages. Take the diagrammatic lines *A*, *B*, *C*. When force is exerted on *C* backward (as would be the case if the uterus were forced back against that point) the effect on *A* will be downward and forward, provided *B* be a fixed point. A mere glance at the diagram and the line of the forces makes this clear; it is purely a question of mechanics.

In the operation point *C* of the diagrammatic line is represented by the point of artificial attachment of the

round ligaments on the posterior part of the uterus (Fig. 5, *a*).

A in the diagram is represented by the natural uterine attachments at the cornua of the uterus on its anterior face (Fig. 5, *b*).

B, in the diagram, is represented by the ovarian ligament, which is relatively a fixed point (Fig. 5, *d*).

Although the ovarian ligament is not an absolutely fixed point, yet it is sufficiently so to supply the point of fulcrum and produce the result pointed out.

The moment the uterus attempts to leave its forward position it meets the resistance of the obstruction of the encircling ligaments as well as the forward and downward pull at the anterior cornual attachments. It thus rides in a cradle as it were, movable backward and forward without ever being able to get back beyond its center of gravity or posterior to the direct line of axis of the pelvis. Hence the third force at play (the intra-abdominal force) is constant in its pressure on the posterior aspect of the uterus and thus trebly insures a permanent result. But one possible thing can happen to spoil the operation, viz., the complete breaking down of the suturing, which is so simple as to make that accident inconceivable.

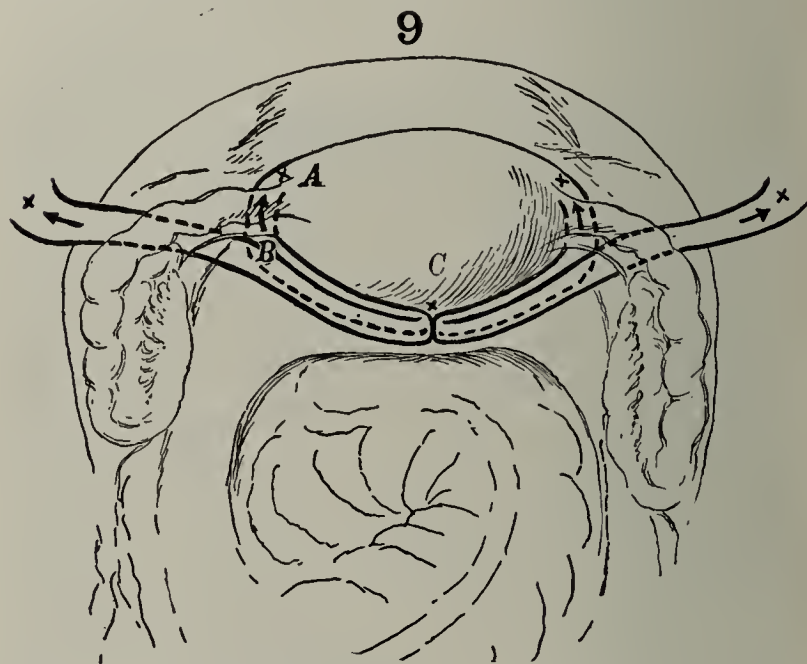


Fig. 9.—Outline sketch showing forces brought to bear and their results after operation is completed. When force is exerted on *C* backward (as would be the case if the uterus were forced back against that point) the effect on *A* will be to draw it downward and forward, provided *B* be a fixed point.

In adjusting the ligaments as they are brought together back of the uterus care must be taken first to draw the inner circle of the doubled ligaments (Fig. 4, *a-b*) snugly about the uterus as the organ is held in a good anterior position by the hand. They are then sutured together by a single stitch. The last step is to fix the loop to the uterus by a stitch or two at a point which will insure its anterior position. It is best not to make the attachment at a point higher than necessary to secure an assurance that the fundus cannot double backward over the encircling round ligaments. This point is found with little difficulty. If this precaution is not followed, the result may be unsatisfactory.

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Care of the Insane.—Proper treatment and nursing of the acutely insane call for the broadest intelligence, not only on the part of the physician, but also on the part of the nurse and all who are brought into immediate contact with the patient.—W. K. Walker, in *Pennsylvania Medical Journal*.

ROUND-LIGAMENT VENTROSUSPENSION OF
THE UTERUS *D. TOD GILLIAM, M.D.
COLUMBUS, O.

As everyone is probably aware, this is the original ventrosuspension of the uterus in which the ligaments are left intact and in which the peritoneal investment is not disturbed. In devising this operation I wanted to get something that was as nearly physiologic as possible—something that would meet the requirements, without the drawbacks incident to the methods then in vogue. Especially was I anxious to get away from all fixations, as they are inherently pernicious and often fraught with disastrous consequence. The uterus is a mobile organ and cannot be fixed in any position or agglutinated to any other organ without detriment to itself and to other organs and parts which are contiguous or correlated. It must conform to various conditions of the bladder; it must alter its position according to the fullness or emptiness of the rectum; it must yield to the impulses of respiration and adjust itself to the various movements of the body. Unless it does so, it will impinge on, or be impinged on by other viscera and both will suffer. But this is not the worst. The paramount functions of the uterus are those essentially related to the great act of reproduction—pregnancy and parturition. The bound-down uterus cannot accommodate the growing fetus and the result, in many instances, is its premature expulsion. Should the fetus go to term, as it sometimes does, fortunately or unfortunately, it will be at the expense of unequal uterine development, distortion, changed axis, unbalanced muscular action and ineffectual expulsive effort. Such conditions at the accouchement always create consternation and too often culminate in disaster.

I shall not attempt to discuss the still mooted question as to what are the essential supports of the pelvic viscera, but there is one thing in which everyone agrees, and that is the necessity of having an intact pelvic floor to keep the viscera from settling. The first essential, then, toward correcting the backward displacement of the uterus is to restore the pelvic floor and the next is to replace the uterus and keep it there. The only way to keep it in position without compromising its usefulness is to utilize its natural guys—the round ligaments. Recognizing this fact, Alexander devised the operation of shortening the round ligaments at the inguinal outlet, and this is the basic principle of all modern operations for anchoring the uterus; but the Alexander operation makes no provision for the adherent, retroverted uterus, the condition most frequently calling for operation.

The caption of this paper signifies a suspension of the uterus from the abdominal wall by means of the round ligaments. This is a palpable misnomer, as will appear later, but was used as the most eligible term to express an approximation to the truth. Suspension of the uterus is neither rational nor feasible. None of the ligaments of the uterus, even the strongest, acts as a suspender of the uterus under normal conditions. A view of the uterus and its ligaments *in situ* will make this clear. The ligaments are all on practically the same plane with the uterus and lax; consequently, they cannot exert any suspensory influence. Should the uterus settle in the pelvis, or draw away from its moor-

ings so as to assume a lower plane and put the ligaments on a stretch, they may, in a measure, become suspensory, but they soon prove their inefficiency by yielding to the sustained traction and thereby become of little value in a rôle for which they were never fitted. These little cords, like all the other uterine ligaments, are lax and allow of considerable latitude of motion backward and forward, but exert a gentle influence to prevent the organ from passing the vertical line. A slight resistance on the part of the round ligaments is ordinarily sufficient to check the backward movement of the uterus when, with the changed position of the body or the movements of respiration, the organ falls forward into normal ante-position. This, then, was the principle on which, as I believed, the solution of the question depended, and it was along these lines that the operation was devised. The fact that there have been a number of modifications of the original operation only serves to emphasize the strong probability that the principle is right and that round-ligament ventrosuspension, in one form or another, has come to stay. Of these modifications, all of which are good and some excellent, I shall not speak, as they are each and all sustained by men of ability who are able to take care of their own. What I desire especially to accentuate in this paper and to reiterate, is the simplicity, safety and efficiency of the original operation, and its freedom from unpleasant sequelæ.

OBJECTIONS

The principal objection urged against the operation as originally devised was the danger of intestinal obstruction. This was brought forward early in the history of the operation, but of late I have heard nothing of it. That the objection was based on theoretical grounds entirely and not well founded is made manifest by the crucial test of time and numbers. Thousands of cases, during a period of more than a decade of time, have failed to furnish a single authenticated case of intestinal obstruction due solely and intrinsically to the operation.

The objection has also been advanced that after parturition the ligaments fail to exert any restraining influence over the uterus and that that organ reverts to its original malposition. This is true, but in a temporary sense only, just as it is true of many other uteri which have not been misplaced before, and is due to the size and weight of the uterus and elongation of the ligaments—not only the round, but all the ligaments which tend to hold the uterus in place. It is not only the uterus which develops during pregnancy, but the ligaments, the vagina, and all the soft parts of the pelvis, so that immediately and for some time after delivery, the pelvic cavity is more capacious and there is not the snug relationship of organ to organ which exists in the normal unimpregnated state. In operations during pregnancy, I have seen the round ligaments greatly elongated and of a thickness equal to that of the little finger. After involution of the uterus, the ligaments and soft parts have taken place, it will be seen that the uterus has returned to its normal position and that the round ligaments are as efficient in keeping it there as before.

Again, it has been objected that the operation is too apt to be followed by suppuration. There is no force in this objection. It has been many years since I had a suppuration following round ligament ventrosuspension. True, in the beginning I had cases of suppuration, some of a most aggravated type, but as I became

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910.

familiar with the manipulative details, learned to deal with the tissues gently, and acquired that automatic asepsis that comes with practice, then suppuration ceased and with it the concern for suppuration. Suppuration following this operation means the same as in any other, neither more nor less.

ADVANTAGES

Having disposed of the objections to the operation, I wish now to emphasize and reiterate its advantages. The cardinal virtues of this operation are to be found in its simplicity, safety, facility of execution and efficiency. It is so simple that any one of ordinary intelligence can understand it, and any one of ordinary surgical training can do it. It is so safe that any untoward result from it is almost inconceivable. The operation can be done with such ease and facility that with ordinary surgical skill and care there should be no question of infection or exhaustion. On this account it is especially valuable in multiple or combined operations in which it scarcely appreciably adds to the risk.

As regards its efficiency, I have never known a failure in a properly selected case in which the work was properly done. I have had one failure in my own practice; I attempted to anchor an anteverted and retroverted uterus, held low down in the pelvis by a rigid and unyielding pelvic diaphragm, such a uterus as one occasionally finds in the virgin, which is not amenable to treatment of any kind. In such a case the operation should never be attempted. Neither should it be attempted in any case in which the uterus and appendages cannot be freed so as to allow the uterus to occupy its normal position without tension or restraint. Such cases are, however, extremely rare. Another cause of failure, as I have observed, is careless suturing of the ligament. Occasionally the ligament is not transfixed by the suture, when appearance would indicate that it had been. This is owing, in part, to the constriction of the ligament where it passes through the abdominal parietes. In order to be sure that I have the ligament on my needle, I direct my assistant to relax traction on the ligament while the needle is *in situ*, when, if the ligament does not retract, I know I have it on my needle. I have had occasion to remove the uterus at different periods after round-ligament ventrosuspension, and have always found the ligaments firmly attached to the abdominal wall and not yielding to any traction which I was willing to exert on them. As regards pregnancy and parturition after this form of suspension, I have found not only no evil results, but actual improvement in conditions owing to the uterus being held in the normal position. Cases of this kind are now too numerous to require special mention. While the technic is quite generally understood, the fact that I still occasionally get letters of inquiry with reference to certain points connected with it, suggests to me the desirability of again publishing it in this connection.

TECHNIC

The peritoneal cavity is entered by an incision at the usual site between the umbilicus and pubes. Adhesions are broken up and the fundus brought forward. By lifting up the anterior surface of the broad ligament on one side on the tip of a finger applied to its posterior surface, the round ligament is brought into view and picked up either between the thumb and finger, or with a bullet forceps

Selecting a point an inch and a half from the uterus, a thread is passed under the round ligament (with its peritoneal investment) and the ends of the thread are brought out of the opening and secured in the bite of a clamp forceps which is laid on the surface of the abdomen. The other ligament is sought for and secured in the same manner.

At a point about one inch and a half above the pubes, the peritoneum, muscle and fascia on one side of the wound, are caught up by a volsella and pinned together, care being taken that the edges of these layers are in line. Traction is now made with the volsella and, with a claw retractor, the skin and superficial fat are drawn in the opposite direction, and with a sweep of the knife the face of the fascia is cleared. With a slender-nosed forceps, or better with a Cleveland ligature-carrier a stab wound is made from the surface of the fascia into the peritoneal cavity. This wound is one inch from the edge of the incision and about one inch and a half above the pubes. The jaws of the forceps are separated so as to make the opening large enough to permit the ligament to be drawn through it, then by depressing the handle the jaws are brought into plain view at the abdominal opening. The thread which loops the round ligament is now placed in the jaws, the clamp forceps and the perforating forceps removed, the latter bringing with it the thread and the ligament. Now, while the ligament is held taut with the loop end a quarter of an inch above the surface of the fascia, a catgut suture is passed through it including the tissues on either side, and back again where it is tied. This is cut close to the knot, the suspending thread cut on one side close to the ligament and withdrawn and the volsella and retractor removed. The other side is dealt with in like manner and the abdominal incision closed.

After both ligaments have been fastened it will be seen that an opening exists between the uterus and abdominal wall of from 7 to 9 inches in circumference, thus obviating any possibility of strangulation of the bowel. It will be observed that the uterus is not suspended but rests easily and naturally on the bladder, from which it can be raised to a position little short of the vertical. Thus the uterus is enabled to conform to the altered conditions of the bladder and rectum and to the various bodily movements. Should pregnancy ensue the ligaments develop *pari passu* with the growth of the uterus and there is neither embarrassment in gestation nor difficulty in parturition.

IN PROLAPSUS

The application of this principle to prolapsus uteri is a thought of later years. Sacrifice of the uterus as in vaginal hysterectomy, does not always secure immunity from secondary prolapse of the vaginal walls, bladder or rectum. The Watkins-Wirtheim operation, while elegant and most satisfactory in the main, is applicable only to post-climacteric cases. This operation requires such extensive dissection of the bladder wall that many are loth to undertake it. Uterus fixation is temporarily, at least, very satisfactory, but cannot always be relied on for staying qualities. Most of the other methods which have been proposed for this condition are obsolete. A few years ago I conceived the idea of using round-ligament ventrosuspension of the uterus with certain modifications in prolapsus uteri, and although I have used it only a few times, the results so far have been eminently satisfactory—more satisfactory than with any other method of which I have

knowledge. The steps of the operation are exactly those of the ordinary round-ligament suspension with the difference that the round ligament is first drawn through the broad ligament by means of perforating forceps and the thread which is looped around it and then taken up through the abdominal wall by the same thread and in the manner already described. Of course, the pelvic floor is to be repaired as in other operations and occasionally it will be found of advantage to amputate the cervix. The patients on whom I operated suffered from aggravated complete procidentia and today they are in excellent condition with a sense of perfect comfort and well-being so far as the pelvis is concerned. I suggest it as a simple and effectual method of dealing with a very troublesome condition.

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THE EVOLUTION OF THE SURGICAL TREATMENT OF RETRODEVIATIONS OF THE UTERUS *

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I desire at the outset to enter a disclaimer, in that I believe that the surgical treatment of deviations of the uterus and associated pelvic organs is far from settled, so far that perhaps some of the hysteropexies, the ligament shortenings, the suspensions, the fixations, in their wide divergence may to the next generation look as crude and unscientific as the routine clamp and drainage-tube in ovariectomy now look to us. Perhaps we are a little too inclined prematurely to dogmatize on the subject—and especially the inventor of an operation is like the expert witness, who said: "Your honor, in matters of fact I am often mistaken, but in matters of opinion I know I am right."

The fine adjustment of the mere mechanical technic of any or all of the current operations is of less consequence than the selection of suitable cases and the recognition of the facts that surgical measures are not demanded for all retrodeviations; that there is no fixed normal position of the pelvic organs; that the matter is one rather of normal movements than of normal position; that the normal supports, so-called, are functionally concerned, not with holding the organ in some fixed position, but rather with restraining it within its normal range of movements; that a uterus out of place, if you please, may by a surgical procedure be put in place and so fixed that the fixation is more injurious, more embarrassing than the displacement.

Many would say, not without reason, that we all are prone to treat this subject from purely mechanical points of view and thus to lose sight of essential pathologic changes which have produced mechanical deviations, treating effect instead of cause, like damming up a river to prevent its waters from flowing into the ocean. But on the other hand we must not forget that if the resources of Nature have been exhausted in the production of the lesion we may have recourse sometimes to mechanical measures, irrespective of the fact that if an ideal anatomic and physiologic cure is impossible yet a symptomatic cure may be desirable.

Confining the discussion to the relative merits of those procedures which now have the support of progressive surgery we may classify them under two heads:

1. Operations which give sustaining power by means of peritoneal adhesions or fixation.

2. Operations which give sustaining power by shortening of ligaments.

In the interest of brevity we may disregard surgical operations of whatever class which are performed by vaginal section, not that we should condemn vaginal hysteropexy *in toto*, but that the field is relatively narrow, and the discussion therefore in this place in some degree unprofitable.

The different procedures, therefore, so far as I shall weigh them, narrow down to operations performed through the median or nearly median abdominal section.

Touching the class of operations which give sustaining power by seroserosal adhesion or fixation, that is, ventral suspensions and ventral fixations, some will remember thirty years ago when it was a vexed question what to do with a retroverted uterus before closing the abdomen after a pelvic operation, such for example, as the removal of pus tubes. Sometimes cautiously and tentatively and with some misgivings, having a pioneer respect for the peritoneum, we united with a single stitch the fundus or the anterior wall of the corpus uteri to some point in the peritoneum near the pubes. In a few weeks examination usually disclosed the uterus again retroverted and thereby demonstrated the inadequacy of this technic; then several sutures were used instead of one with the same result; then before suturing we scraped off with a sharp knife the peritoneal surface so as to give raw surfaces to be united and the result was strong broad cicatricial union and permanent fixation; in fact, immobilization of the uterus; then was written the tragic and humiliating chapter of mechanical fixation of the uterus, a chapter which told of obstruction of the bowel, dystocia, rupture of the parturient uterus and other obstetric calamities not to mention a formidable list of disabling, distressing consequences, neurotic and circulatory, local and general. Ventral fixation then relegated to the dark ages of surgery soon gave way to ventral suspension of the uterus by less barbarous methods—an operation popularized by Howard Kelly which in the final and successful evolution resulted quite uniformly in stable equilibrium of the uterus, and at the same time left it free in its normal range of movements. The principle was simple and effective; it was to unite to the anterior parietal peritoneum, not the fundus or the anterior wall of the corpus uteri but the posterior wall, and, what is most essential, to that part of the posterior wall just back of the fundus, a surface about one-half inch back of a line connecting the uterine ends of the Fallopian tubes. This surface was united to parietal peritoneum near the uterovesical reflexion. Stable equilibrium and permanent uniform results were secured by the simple change in the selection of surfaces to be united without denudation of the united surfaces and with two or three absorbable catgut sutures; that is, very light adhesions of these surfaces were sufficient. Moreover, this union, by lifting the posterior wall of the corpus against the parietal peritoneum, also served to tilt back the cervix so as to place it nearer to the hollow of the sacrum—a most essential mechanical factor in the correction of retroversion, for if the cervix be normally near the sacrum, the corpus does not have space in which to retrovert.

This operation, modified by myself in a personal experience of several hundred cases, was in a degree satisfactory both as a means of correcting the displacement and in its freedom from the distressing mechanical results which had discredited the obsolete operation of

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

fixation. It, however, may give rise to obstruction of the bowel, for it always left a more or less constricted passage around the uterus, especially if the adhesions pull out into cicatricial bands under which intestine could work its way and be compressed. Such accidents, with grave results, have been reported from time to time. Moreover, the operation in incompetent hands, although intended to produce light adhesions only, sometimes sets up union so strong and cicatricial as to amount to the much-dreaded fixation already condemned. These things being so, I finally disregarded my own satisfactory results and those of others, and have almost abandoned the operation, and in place of it for several years have substituted one after another of the various ligament-shortening operations.

In taking leave of the suspension operation, which in the evolution of the subject has held so large a place, I pay it my very appreciative respects; it was a tried and trusted friend; it hardly ever failed; it never, in my personal experience, was followed by bad results which I could attribute to it: unfortunately, however, it is beset by the sentimental objection that it is not anatomic, and, under indictment therefore by the surgical purist is charged with the crime of being unsurgical. It may plead, however, extenuating circumstances, inasmuch as it has suffered from the evil relations and evil associations of fixation, the sins of which, by confusion of the two operations, have been visited on it most unjustly. And so, not without a sense of disloyalty, I dismiss, temporarily at least, an old benefactor, and pass to the more approved ligament-shortening operations.

There is, perhaps, more scientific indication for shortening the uterosacral than for shortening the round ligaments because these ligaments should maintain the normal short distance between the cervix uteri and the hollow of the sacrum, and because shortening them therefore may fulfill an essential indication, but with due respect for contrary opinions no uterosacral operation, so far as I am aware, has been developed to the degree of satisfactory stable results; that is, the shortened uterosacral ligaments do not hold well. They are liable to pull out again soon after the shortening, causing the operation to fail.

The recent operation of Harris,¹ by which a new ligament is formed to supplant the uterosacrals by utilizing the long tendon of the *psoas parvus* muscle, is too new to permit an estimate of its value; it probably is destined, however, to go the winding way of artificial ligament operations.

Shortening of the broad ligaments is not germane to this discussion, except as it enters incidentally into the round ligament operations.

Perhaps we may drop the curtain on Alexander's operation now regarded as obsolete. The substitute operation once advocated by Goldspohn, while reasonably effective, I would discard as requiring an unnecessary amount of surgery for the accomplishment of the purpose, especially since this surgery might, in the hands of an unlucky surgeon, weaken the region of both inguinal canals and the abdominal rings and thus give rise to hernia, to say nothing of its increased danger of sepsis. The various operations of doubling the round ligaments on themselves or of suturing them in front of the uterus, although very useful in their time, now, in the face of more recent procedures, appear to be passing into disuse. They always were open to objection of frequent inadequacy for permanent results.

Perhaps without fear of much contradiction we may eliminate from serious discussion all ligament-shortening operations except those which belong to the most recent era, an era which began with the operation of Gilliam. This operation has been modified in technic by Barrett, myself, and others, and has been somewhat, though perhaps not very materially improved. In addition to the merit of being anatomic, and therefore surgical, it gives reasonably permanent results, although possibly not so permanent as the suspension operations of Kelly, already described, approved, and reluctantly laid aside. Gilliam, so far as I am aware, took the longest step toward placing the surgical treatment of retrodisplacements on a scientific basis. Just what form of this method of supporting the uterus by drawing the round ligaments through other structures and fastening them there will stand the final test of experience against all others, the future must decide. The operation is not quite adequate, however, inasmuch as it fails like all others of its kind to hold the cervix back in its normal location near the hollow of the sacrum, an essential requirement for perfection still unfilled by any method so far proposed.

A radical departure from the Gilliam technic, although not entirely different in principle, inasmuch as it passes the round ligament through other structures, is the operation of drawing the round ligaments through the broad ligaments and fastening them on the posterior wall of the corpus uteri. Clarence Webster, I think, first described this operation, and therefore is entitled to the credit of literary priority. I believe it was earlier performed by Frank Andrews. It has been successfully championed by Baldy. I have performed it more frequently than any other for several years, and so far as I have been able to observe results, am inclined to give it a great deal of preference. This and other round-ligament operations are thought to be inadequate and therefore contraindicated when the ligaments are so attenuated as to be incapable of giving much support and in such cases many revert to the suspension operation by adhesion.

I think I would favor this operation even with an attenuated ligament inasmuch as it carries along with the ligaments considerable peritoneum, which becomes adherent and gives supporting power. In fact, the peritoneal element in posterior attachment is a most significant factor—almost as significant as it is in ventral suspension; it combines the advantages of ligament shortening with serous adhesions and is free from danger of resultant obstruction of the bowel so much feared in the ventral suspension and the original Gilliam operation.

The pessary, recognized in former times as being of great value, has fallen into unmerited disuse and the correct application of it has become almost a lost art.

One additional word: In this age of dramatic surgical achievement in the abdomen, let us remember that our fathers of the last generation developed plastic surgery on the vaginal side of the pelvic floor to a surpassing degree. Let us keep in sight the fact that any abdominal operation for retroversion or descent, however well selected or performed, may be of little avail against the counter-influence of a relaxed pelvic outlet, and that good plastic work below therefore may be indispensable. Perhaps it is true that the pioneers did better plastic work than we are doing now. It would be interesting entirely if under the blinding influence of major surgery, plastic gynecology should become a lost art.

100 State Street.

1. Harris, M. L.: A New Operation for Prolapse of the Uterus, THE JOURNAL A. M. A., May 14, 1910, p. 1605.

THE DISCHARGE OF LUNATICS BY
HABEAS CORPUS PROCEEDINGS *

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The constitution of the United States¹ provides that "the privilege of the writ of habeas corpus shall not be suspended unless when in cases of rebellion or invasion the public safety may require it."

It is important at the outset that we have clearly before us in the consideration of this paper a precise idea of the legal significance and aim of the great writ to which it relates. A concise definition, which has generally been accepted as a most complete one, is that given in "Hurd on Habeas Corpus:"²

The writ of habeas corpus is that legal process which is employed for the summary vindication of the right of personal liberty when illegally restrained.

It is along the line of this definition that I proceed to a discussion of the application of the writ respecting a single class of individuals, namely, the insane. Reverting to the historical, it may be of importance to recall that the original necessity for the writ of habeas corpus arose from a great many conditions which demanded remedy, one of the least of which was lunacy confinements. One of these conditions, as will be remembered, and a most important one, was the practice of imprisoning for debt. By far the large majority of habeas corpus cases in the old reports, both English and American, relate to restraint of liberty for reasons other than alleged or adjudged lunacy. We find, at the present day, however, that this writ, designed more particularly for divers other necessities, is being used to an astounding extent in lunacy cases. The increase in its use within the memory of living men has been so marked that it may well be inquired whether it has not become an abuse of privilege. The increase of the popularity of habeas corpus proceedings in lunacy cases has been due to several causes, to some of which I think it highly important that we give thoughtful attention. It is only by a full appreciation of the causes, taken with an intelligent comprehension of the effects that we can proceed properly and with well-founded hope toward a reform.

Let me emphasize that it is not the purpose of this paper to argue for one moment for a suppression of the writ as such. The writ of habeas corpus came into use by reason of a recognized necessity for such a process, and it has undoubtedly become an invaluable part of our judicial system. It is my desire to point out, if I may, the abuse of privilege in the obtaining of this writ by lunatics and those acting in behalf of such persons. In so far as applies to the issuance of the writ in cases of lunatics, I argue for a limitation of such use. In using the word "lunatic" I am not unmindful of the efforts of some of the medical profession to abandon the word, to substitute for it some word or phrase less harsh, something which signifies illness. This position taken by medical men is based, of course, on the modern view of insanity, and is at once both in keeping with that enlightened view and of kindly intent to the patient and his family. With these efforts I am in full sympathy, but as this paper treats the legal side of the subject, I use the term "lunatic," a word which the statutes and

the decisions have given a distinct place in medical jurisprudence.

In the first place, in the case of every applicant there must have been an actual incarceration, either as a preliminary act under general police or public health regulations, or by decree of a court in confirming a due inquisition. Few persons apply for a writ of habeas corpus during the period of temporary detention. The applicants for the writ are in practically every instance, those who have been adjudged insane. Time was, we all remember, when persons supposed to be insane were taken to the nearest jail or prison and there confined without examination, without hearing, and without day, and it was the suffering of those thus confined that brought about through Pinel and others the recognition of the great fact that there is nothing of the criminal about an insane person, but that he is simply a sick man. This truth has come to have so firm a place in the mind of society that no longer is it possible—nor indeed is it the desire—to incarcerate an alleged lunatic without a full and fair hearing. It means a great deal, therefore, when we realize that the lunatics applying for discharge by habeas corpus are, as I said before, in nearly every case adjudged lunatics. They are not suspected individuals who have been summarily confined, but are those who have had their day in court, and have been found, in orderly manner by competent tribunals, to be in need of treatment for mental disease. As to these hearings in the several jurisdictions, it may be said that they have at least one feature in common, namely the fairness with which they are conducted toward the alleged lunatic. An examination of the widely differing proceedings throughout our country must convince one that in every instance the man whose sanity is in question has a fair opportunity in the presentation of his case. The variance in these hearings extends all the way from the admirable practice under the New York and Massachusetts laws which treat the patient as a sick man, to that in the District of Columbia which requires his examination before a jury of twelve laymen. A great deal has been spoken and written and much more can be said about the system which gives a jury of laymen the right to determine whether there should be commitment for mental disease. If all hospitals were private institutions conducted for gain, and the superintendents thereof were under lax regulations and without inspection laws, there might be some reason for placing twelve laymen between liberty and confinement. My own opinion, based on a study of European laws and those of some of our own states, and a practice specializing in such matters, is that the commitment may be safely entrusted to a judge. Be the hearing conducted in whatsoever manner, it must be conceded that the practice of committing sane persons to insane hospitals is a relic of ancient days or a creation of vivid imagination. Such being the case, the burden shifts, after adjudication, and it is, or certainly it ought to be, incumbent on the adjudged lunatic to show that he is sane if he is to secure discharge by habeas corpus. This burden should extend further. It should require, as suggested by a committee of the New York State Bar Association, a showing of *prima facie* sanity before the issuance of the writ of habeas corpus. The report of the special committee on the commitment and discharge of the criminal insane, presented at the meeting of that association held in Rochester in January, 1910, recommended that a person confined in any state hospital for the insane might make application for a writ of habeas corpus only on a written verified petition accompanied

* Read before the Society of Medical Jurisprudence, New York City, Dec. 12, 1910.

1. Constitution, Art. 1, Sec. 9, par. 2.

2. Hurd on Habeas Corpus, p. 143

by a certificate made under oath by two qualified medical examiners in lunacy. It further recommended that the examiners in lunacy be required to give the reasons on which they based their belief as to the sanity of the applicant. A requirement such as this would do much to reduce the number of hearings on writs of habeas corpus, for it would operate to prevent the issuance of a large number of such writs.

Certain "leeches" of the legal profession exist in every community, and there is a form of this species which fastens itself on hospital patients. Through the efforts of these shysters, patients who would not otherwise think of such a thing, and who really do not desire freedom, are led to apply for discharge on writs of habeas corpus. Petitions in such cases are not infrequently signed by the attorney as next friend of the patient. The next step, often followed, is to file the proceeding *in forma pauperis*. Thus the attorney after one short conversation or after receiving a letter or a postal card from the patient, is enabled without further consultation or a medical examination, and without taking up the matter with the hospital physicians, to indulge in what may be properly called a "fishing expedition." On the hearing if the patient is remanded, the attorney has lost simply the questionable value of his time, but if the patient is discharged the attorney demands substantial compensation. In a recent case which came under my observation the discharged patient had \$600 accumulated savings, of which he complained that the attorney took \$135 as a fee and borrowed \$300. It is important to add that the remainder supported the patient two months and he was then recommitted to the hospital from which he had been discharged! As to his mental condition, it must be said that while at the time of his discharge he was quiet and contented, the strenuous life which he led during his two months' freedom, with attendant excesses and indulgences, changed him greatly and he returned with his mental disorder aggravated to an alarming degree. This practice, encouraged and fostered by the unrestricted issuance of writs of habeas corpus, has grown in some jurisdictions until it is nothing less than a cruel wrong on the patients and an outrage on justice. One remedy lies, as above suggested, in a requirement that the patient submit with his petition *prima facie* evidence of his sanity, or, in other words, that before burdening the court and hospital authorities, he obtain a substantial showing of reputable medical evidence as a basis for his petition.

Another class of patients seeking freedom through the great writ are the paranoiacs. As is commonly known, paranoia is a most dangerous type of mental disorder. The paranoiac invariably possesses cunning, usually in a marked degree. These patients differ from those to whom I have referred as being preyed on by unscrupulous attorneys, in that the personal activity of the patient is conspicuous in his efforts to obtain discharge. At Dannemora (the New York Hospital for Criminal Insane) the superintendent recently reported that the majority of his patients who were seeking writs of habeas corpus were paranoiacs, and that during five years four such patients who had been thus discharged had committed suicide. The records of many courts also show that in such cases the termination of one proceeding by the remanding of the patient simply marks the beginning of a new proceeding. Many patients suffering from this form of mental disorder have obtained six and eight writs; and as long as the writs are procured so easily, they will doubtless continue—to the

retardation of the proper business of the courts, the disheartenment of hospital authorities, and the physical and mental detriment of the patients themselves. The court proceedings in such cases are unnecessary, quite as much so as those in the class of cases earlier discussed. It is self-evident that a requirement of medical evidence in support of a petition for a writ of habeas corpus would perforce prevent oft-recurring applications from the same patient.

In a paper prepared in 1909, Dr. Robert B. Lamb, superintendent of the Matteawan State Hospital, reported the subsequent history of forty-one patients for whom during a given period writs of habeas corpus had been obtained. Seven were remanded to the hospital and thirty-four were discharged. Of these thirty-four, fourteen found their way either to prison or asylum, eight were troublesome to their families because of mental disturbances, three were unable to earn their living and were cared for by relatives, six disappeared from view, two committed suicide, and one succeeded in becoming partially self-sustaining.

In the District of Columbia between given dates in 1905 and 1909, fifteen patients secured their discharge from the Government Hospital for the Insane on writs of habeas corpus. By reason of nearly all of these men having been soldiers and sailors and not residents of the District of Columbia it has been impossible to trace the subsequent history in every case. Of the number thus discharged, however, four were later taken in custody and recommitted to the hospital, one committed suicide, one committed a violent assault in a northern city and was placed in another hospital where he is now confined, one was admitted to a New York State hospital for the insane, and one became an inmate of an institution in the West and by his recent correspondence with a prominent government official has given evidence of profound mental disorder.

It is well worthy of note that during this same period 1,256 patients at the Government Hospital for the Insane were discharged by the superintendent without any proceedings whatsoever, and approximately 900 more were similarly released by the superintendent on parole to relatives and friends.

In an early case³ in this country it was held that:

"No principle of right is violated in putting a reasonable and salutary restriction on the liberty of a person who, from the loss of reason and judgment, is unable to provide means for his own cure or who is liable to use freedom from restraint in such way as to increase or prolong his malady."

In the light of this very sensible doctrine, it is clear that after a proper adjudication the patient in confinement is not being deprived by illegal restraint of the right of personal liberty—to use the language of Hurd's definition—and should not, therefore, be entitled to a writ of habeas corpus except on a proper advance showing of mental capacity.

As we consider the rights of the patient, so must we not overlook the rights of society. The men, women and children who are daily on the streets and in other public places have distinct rights which are of as much importance and value to them as any rights of the adjudged lunatic. "Man," says Montesquieu, "is born in society and there he remains." The incompetent is a component part of society and it is therefore necessary that certain restrictions be placed on him that he may not do violence to the welfare of the greater number. To be sure, the insane, as wards of the court, are pecu-

3. Matter of Josiah Oakes, 8 Law Reg. 122.

liarily entitled to the most jealous protection of the court, but it is equally true that the great body social is entitled to the protection of the institutions of justice in the interests of the general welfare of the race. The welfare of the adjudged lunatic, then, should be considered, not of itself, but coordinately with—I am tempted to say, subordinately to—that of society. On the one hand, the discharge of an adjudged lunatic on evidence lacking clear proof of restoration to reason may for the moment please and satisfy the patient, and, on the other hand, it may harass and endanger his fellow citizens without number. In recent years the Rhode Island Supreme Court has spoken on this point with a fearlessness that is refreshing. In the case of *Ex parte Palmer*⁴ the court after hearing the evidence of nine or ten physicians—several of whom were of wide reputation—to the effect that the petitioner was not insane, and on the other side that of four physicians of known probity and experience that it was dangerous to the community for petitioner to be at large, remanded him with these words:

“Charged as we are with the high and imperative duty of protecting the people of the state, as far as lies in our power, from physical injury and violence at the hands of irresponsible persons, we are of the opinion that in order to warrant us in discharging the petitioner from his confinement he must show by a clear and strong preponderance of evidence that he is not insane and that his going at large will not be dangerous to the public peace. That so strict a rule does not obtain in all cases of this sort, that is, in petitions under the statutes of the various states, for the release of persons confined in insane asylums, we are well aware. But we think it should be the rule in a case like the one before us, and we therefore adopt it and shall be governed by it.”

In this decision the protection of the court was extended to the community, the court declining, as you have noted, to take the responsibility of discharging because of a lack of “a clear and strong preponderance of evidence that he is not insane and that his going at large will not be dangerous to the public peace.”

One needed reform, as I have tried to indicate, is the establishment by the petitioner of a *prima facie* case at the filing of the petition. Another is a uniformity of practice which will result in habeas corpus cases being heard before the nearest judge of competent jurisdiction without the questionable aid of a jury. Some time ago attention was directed by the superintendent of one of the New York state hospitals to a growing practice of the courts of granting writs returnable before other justices in distant parts of the state. The necessity for such a proceeding is purely imaginary; the burden that it puts on a disinterested and honorable institution and its officers is at once harsh and absurd. A striking instance of this abuse was that of a patient in the Willard (N. Y.) State Hospital, who, in September, 1909, after having been remanded in three or four habeas corpus proceedings, secured a writ returnable before a justice in Brooklyn nearly four hundred miles distant. A criminal in California⁵ who wanted discharge on a writ of habeas corpus tried this plan of going beyond his own jurisdiction but in that case the supreme court of the state laid down a doctrine of common sense which ought to be appreciated by all who read it. The court said:

“The legislature can never have intended that a party imprisoned under sentence of conviction for a misdemeanor should have the privilege of selecting from the judiciary of the

whole state the individual to whom he prefers to make his application, however distant from the place of his detention, and compel the officer having him in charge to convey him, at the expense of the county, it may be from San Diego to Klamath, in order that he might avail himself of a remedy which the local judge of his county was equally authorized to grant. Nor need he stop here; the refusal to discharge by one judge is not a bar to another application before a different judge. After failing in his first application, the party may sue out another writ before a different officer, and thus the term of his imprisonment may be passed in traveling from one part of the state to another, at the expense of the county in which he was convicted, to the entire subversion of justice.”

Hearings on writs of habeas corpus, by reason of the supposed exigencies requiring their issue, should be conducted by a judge without a jury. The practice has grown, however, of courts referring the issues raised in such hearings to a jury. This is not because a hearing by the court would amount to a violation of the right of jury trial, for the right of jury trial in habeas corpus cases has never existed. Going back to Blackstone's Commentaries we find the learned author commenting on the fact that the right of trial by jury was not recognized as existing in favor of an alleged lunatic under the common law.⁶

An alleged lunatic cannot be committed it is true, and cannot be tried to determine his mental condition, except by “due process of law,” but as Judge Cooley points out in his work on “Constitutional Limitations,”⁷ “The term ‘due process of law’ is by no means confined to trial by jury, but the term covers a variety of judicial proceedings.”

There ought to be no room for doubt as to the proper legal method of conducting such inquiries. In the first place, the federal law provides⁸ that in habeas corpus cases “the court, or justice, or judge shall proceed in a summary way to determine the facts of the case, by hearing the testimony and arguments, and thereupon to dispose of the party as law and justice require.”

You will note that the court is required to proceed summarily, and Bouvier⁹ defines a summary proceeding to be “a form of trial in which the ancient established course of legal proceedings is disregarded, especially in the matter of trial by jury.”

Still another recognized authority on the subject, Professor Church, in his work on “Habeas Corpus,”¹⁰ confirms this doctrine, using this language:

“There is no provision in the Constitution of the United States, neither is there in any state constitution, which gives the right to have these issues of fact tried by a jury in such proceedings. The constitutions, federal and state, provide substantially, that the right of jury trial shall not be violated, but it is no violation of this inestimable privilege to deny it in chancery proceedings, preliminary examinations and proceedings by habeas corpus.”

This matter becomes one of great moment when we observe, as has sometimes been alleged, the judge taking an open and positive position as to the mental condition of the patient while the jury takes an opposite view and the court confirms the jury's verdict. The judge in such cases, by reason of his ability to weigh evidence and his unbiased attitude, can render a verdict just to both the patient and the state, while a jury of laymen, torn by conflicting emotions and personal equations may, and

6. Blackstone's Commentaries, i, 304.

7. Cooley's Constitutional Limitations, p. 431.

8. Sec. 761 U. S. Rev. Stat.

9. Bouvier's Law Dictionary, ii, 683.

10. Church on Habeas Corpus, p. 173.

4. *Ex parte Palmer*, 26 R. I. 486.

5. *Ex parte Ellis*, 11 Cal. 222.

frequently will, decide a mental question on any ground except that of the evidence.

It is the abuse of privilege which leads to corrective measures. A reform must come when an abuse becomes too flagrant. In these cases, we are coming, very generally, to a recognition that the petitioners are getting not only what a humane law and practice afford them, but certain so-called privileges not warranted by the intent of the law and of infinite harm to public institutions, to judicial procedure and to the patients themselves. The time is ripe, therefore, for an enforcement of the rights of the community at large, and if we concur in this view we are brought face to face with the question of how the existing abuses are to be corrected. I have endeavored to outline some needed changes in our laws as well as in our practice under existing laws. There remains to be brought to attention at least one other important method of correcting the evil. I refer to a dissemination of knowledge among the people at large as to present-day methods and management of public institutions for the care of the insane. A growing movement in such hospitals of giving publicity and of inviting medical cooperation is doing much to bring closer sympathy between physicians in charge and those in private practice. For two years past the government hospital at Washington has conducted each winter a series of staff meetings to which the physicians of the city have been urgently invited, and which invitation, it is gratifying to know, has been accepted by a large number of active practitioners. At these meetings, methods used in the examination, the care, the amusement, and the varied treatment of the insane, are discussed fully and freely. By such means the hospital physicians are getting the confidence of the people at large through the family physicians, and the old horror of hospitals—born and nurtured in ignorance—is being replaced by an intelligent idea of the work which the hospitals are striving to perform. This labor of the institutions—I speak with particular reference to the large government and state hospitals—is full of discouraging aspects. The trials incident to the work are materially reduced by cooperation and appreciation such as I have just mentioned, but a further step will be attained when in addition is added the confidence of the legislators, the bench, the bar and the jury box. It may be a far cry to the time when such universal confidence will exist. It ought not to be, for the cause is that of the people. The people have rights which the legislators ought to respect and will respect when they are insistently and persistently presented. As for the bench, the bar and the jury, I believe that a uniform stand by the courts for the protection of the many will be a guidance to the attorneys, as it must be a rule of action for the jury. In all the literature of the law no safer, saner or more fearless decision stands out than that of Judge Ludlow of Philadelphia.¹¹ This distinguished jurist, reviewing the evidence in a habeas corpus case, and remanding the patient to the hospital, said:

"To take a proper and just responsibility in such a case as this, requires not bravery but courage—not that quality which sometimes degenerates into temerity, and is reckless of danger, but rather that other quality which is the result of reflection and is always cool and collected. Where our path of duty is plain we ought judicially to be courageous, not brave."

It was nearly forty years ago that Judge Ludlow uttered these words. He was the precursor of other

jurists, who have maintained in positive terms their determination to protect society from those who would do it violence, as well as to protect those who would do violence to society. The goal which we seek is the better protection of society, without the releasing of any of the proper privileges and safeguards extended by the law to the mentally deficient. The difficulties in our way are numerous. Although the path of progress at times seems clear, there are ever present obstacles. Some of these are founded on honest bases and must be overcome by a campaign of education; others have their support neither in the law nor in righteousness and must be dealt with vigorously. Until medical science can cure all mental ills, those who suffer from such affliction must be cared for and directed, in ways that are pleasant, if you please, but always in paths that do not permit these unfortunates to be of danger to themselves or to their fellows. The great agencies of the law must be wide open to them, but with the limitations that are essential for the proper administration of justice, and the safety of all the people.

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SALVARSAN AND SODIUM CACODYLATE *

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The object of this paper is to present the results obtained by applying to sodium cacodylate the experiments which demonstrated the wonderful destructive action of salvarsan on the spirochetes of syphilis. These experiments are laid down in Ehrlich and Hata's recently issued monograph,¹ and, in brief, they consist, first, of the determination of the tolerated dose of a given substance for normal rabbits, and, second, of the determination of the curative dose for rabbits infected with *Spirochaeta pallida*. The results are expressed in the form of a ratio, C:T. Hata has shown that the ratio for salvarsan is at least 1 to 10 with a single intravenous injection.

Interest among clinicians of this country in sodium cacodylate in the treatment of syphilis seems to date from an article by Murphy,² who gave a summary of the status of salvarsan at that time and then said:

It has been announced that this drug will not be given to the profession for a number of months, a fact which forced us to try other preparations of arsenic. The one with which I have been most familiar is the sodium cacodylate, which we have been using for seven years to allay the pain of metastatic, osseous carcinomata.

He mentioned three cases in which the drug, given intramuscularly, seemed to have had a high spirillicidal power. Murphy's lead has been followed by a number of clinicians, and while few published reports have as yet appeared, it has become evident that the results are not uniform. Sodium cacodylate is, of course, not related to salvarsan in any way, except that it contains arsenic, and it would be very surprising if one could substitute, off-hand, a stock preparation for a highly refined product like salvarsan. Still, in view of our

* From the Bacteriological Laboratory of the Army Medical School, Washington, D. C. Published with permission of the Surgeon-General, U. S. Army.

1. Ehrlich and Hata: Die experimentelle Chemotherapie der Spirilloesen, 1910.

2. Murphy: The Arsenical Treatment of Syphilis, THE JOURNAL A. M. A., Sept. 24, 1910, p. 1113.

ignorance of the actual spirillicidal power of sodium cacodylate, and of the great interest in the general subject, it seemed worth while to fall back on the experimental method.

TOLERATED DOSE

The problem, then, is to work out the ratio C:T for sodium cacodylate. Runnels³ has recently given a review of the chemistry and physiology of the cacodylates and has emphasized the subject of purity of the drug. He examined the best of two samples bought in the market and found a sodium cacodylate content of 77.59 per cent. and concluded that the remainder consisted almost solely of water. The preparation used in the following experiments was Merck's, which came in brown glass bottles of one-eighth ounce capacity. Tested by the method of Imbert and Astruc it gave a cacodylate content of 67 per cent. There was no evidence of other impurity than the water of crystallization.

The tolerated dose was worked out for intravenous administration, as this is the most definite method in which to determine curative action. The drug was dissolved in salt solution in proportions which allowed the desired amount to be given within 5 c.c. Table 1 shows the results of injection of various quantities.

TABLE 1.—THE EFFECT OF VARIOUS DOSES OF SODIUM CACODYLATE ON RABBITS OF DIFFERENT WEIGHTS

Rabbit	Weight gm.	Dose per Kilogram	Result
1	2150	0.025	No visible effect.
2	2015	0.01	No visible effect.
3	2055	0.01	No visible effect.
4	2180	0.15	No visible effect.
5	1955	0.15	In a short time drowsy, with some paresis of hind legs.
6	2150	0.2	Drowsy; paresis of hind legs; rapid respiration; very sick.
7	2170	0.2	Drowsy; paresis of hind legs; rapid respiration; dead in twelve hours.
8	2020	0.25	Same symptoms; dead in twenty hours.
9	1970	0.3	Slight symptoms; recovered.
10	2000	0.3	Same symptoms; dead in twenty hours.

All the animals affected showed the same symptoms of stupor, rapid respiration and paresis of the hind legs. The animals that died showed congestion of the lungs and a small exudate in the pleural cavities.

The tolerated dose is the largest that can be given with safety to life; in other words, it is just short of the minimal fatal dose. In the present instance, "T" may be taken as 0.2 gm. per kg. for intravenous administration. Runnels considered 0.3 gm. per kg. as a maximum safe dose in rabbits, but this was by the subcutaneous method of injection, and with half grown animals.

CURATIVE DOSE

The curative dose was worked out on chancres of the scrotum and on lesions of the testicle produced by the eighth, ninth and tenth generations in rabbits of spirochetes from a case of human syphilis.⁴ A complete protocol of one of the rabbits is given below.

RABBIT 2 (XX).—Oct. 4, 1910: Black; right testicle injected with 1.5 c.c. of a citrate mixture of serum from the testicle of Rabbit XVII; eighth generation; spirochetes abundant. October 24, small indurated patch in scrotum. October 31, testicle enlarged; nodule in epididymis; oval chancre in scrotum; spirochetes abundant in testicle by dark-field examination, twenty-seven days after inoculation. November 2, serum positive by Wassermann test. November 7, skin lesion much larger. November 9, serum positive. November 17, spirochetes present in testicle. November 21, large chancre, 24 by 12 mm. November 25, spirochetes present in chancre; same size; weight 1333

3. Runnels: The Carbon Compounds of Arsenic in the Treatment of Syphilis, New York Med. Jour., xcii, No. 22, p. 1053.
4. Nichols: Experimental Faws in the Monkey and Rabbit, Jour. Exper. Med., xii, No. 5, p. 620.

TABLE 2.—SUMMARY OF THE FINDINGS IN RABBITS AFTER THE INJECTION OF VARIOUS DOSES OF SODIUM CACODYLATE

Rabbit	Weight gm.	Condition at Time of Treatment *	Dose per kg.	Examination for Spirochetes After Treatment												Remarks
				1st Day	2d Day	3d Day	4th Day	5th Day	6th Day	7th Day	8th Day	9th Day	10th Day	11th Day	12th Day	
1 (XIX)	2330	Large chancre of scrotum, 18x18 mm.	Sp. + .005	+	.005	+	+	+	+	+	+	+	+	+	+	No effect on spirochetes or on lesions.
2 (XX)	1333	Large chancre of scrotum, 24x12 mm.	Sp. + .005	+	.005	+	+	+	+	+	+	+	+	+	+	No change in spirochetes or in lesion until 606 was given; then rapid healing.
3 (XXXII)	1900	Lesion of testicle size of olive.....	Sp. + .025	+	+	+	+	+	+	+	+	+	+	+	.01*pro kg. 606	Lesion became smaller; spirochetes persisted, active and numerous until 606 was given.
4 (XXXV)	1960	Lesion of testicle size of large olive..	Sp. + .025	+	±	+	±	±	±	±	±	±	±	±	±	Lesion became smaller; spirochetes partly immobilized at first.
5 (XXXIV)	1930	Chancre of scrotum, 12x16 mm.....	Sp. + .05	+	+	+	+	+	+	+	+	+	+	+	+	No effect on spirochetes or on lesion.
6 (XXXIII)	2090	Large diffuse lesion of testicle.....	Sp. + .075	+	+	+	+	+	+	+	+	+	+	+	+	No effect on spirochetes or on lesion.
7 (XXIX)	2240	Lesion of testicle size of olive.....	Sp. + 0.1	+	+	+	+	+	+	+	+	+	+	+	+	No effect on spirochetes or on lesion.
8 (XXXVI)	1975	Chancre of scrotum, 18x17 mm.....	Sp. + 0.15 "606"	+	+	+	+	+	+	+	+	+	+	+	+	No effect on spirochetes or on lesion.
Hata XI	2360	Two chancres of scrotum, 20x26 mm.	Sp. + 0.015	—	—	—	—	—	—	—	—	—	—	—	—	Spirochetes destroyed in twenty-four hours; lesions healed in two and three weeks.

* + = Present, active; ± = present, motionless; — = not found.

* + = Present, active; ± = present, motionless; — = not found.

gm.; 0.005 per kg. sodium cacodylate intravenously. November 26, spirochetes present, sluggish in movement; 0.005 per kg. sodium cacodylate intravenously. November 28, spirochetes present, active, numerous, no change in lesion; serum positive. November 30, spirochetes present, active. December 1, lesion 22 by 17 mm.; spirochetes present, active. December 3, 0.01 per kg. salvarsan intravenously. December 4, spirochetes not found. December 5, spirochetes not found; lesion 16 by 16 mm. December 6, spirochetes not found; lesion much smaller. December 9, spirochetes not found; lesion much smaller. December 10, spirochetes not found; lesion nearly healed. December 12, lesion nearly healed; doubtful serum. December 19, no remains of lesion, serum negative.

When in the course of this work the dose of 0.025 per kg. was reached, it was at first thought that some curative effect was becoming evident in Rabbits 3 and 4, because the lesions became smaller after treatment, and the spirochetes were in part immobilized for two days in one animal; but higher doses failed to show anything of the kind, and the testicular lesion is, naturally, subject to certain fluctuations.

As is evident from the results recorded in Table 2, it is impossible to demonstrate any spirillicidal action for sodium cacodylate in infected rabbits short of seriously injuring or killing the animal. Hence "C" cannot be given any value, and the ratio C:T, or 0/0.2, signifies no specific action.

COMMENTS

Of course facts gained from experiments on animals often cannot be directly transferred to human medicine; but much of our knowledge about salvarsan and other experimental substances has been so transferred and no reason is apparent why sodium cacodylate should be an exception. Dawes and Jackson⁵ have shown that any therapeutic effect sodium cacodylate may have is due really to decomposition and reduction products such as cacodyl, arsenious and arsenic acids. The amount of reduction depends largely on personal idiosyncrasy, and in this way a very uncertain element is introduced. It is possible that more reduction is effected by several small subcutaneous or intramuscular injections than by a single large intravenous injection, and that the nascent acids may have some favorable action on the tissue reactions to the spirochetes, or even on the spirochetes themselves; but it is fair to conclude that neither sodium cacodylate nor its reduction products have any considerable spirillicidal action. Their organotropic properties are fully as strong as their parasitotropic properties. Many substances which had a ratio of 1 to 2 or less were discarded as useless in the elaboration of salvarsan.

For all practical purposes salvarsan should be regarded as a new substance and not merely as a new arsenical compound. The arsenic is only a part of a complicated instrument and would be of little value alone. The arsenic must be reduced, trivalent and in firm combination with the benzol ring; and the benzol ring must be substituted with the OH group and the NH₂ group in the *ortho*-position before a maximum destruction of spirochetes is possible. From this point of view, sodium cacodylate has no more relation to salvarsan than a pair of artery forceps has to a lithotrite in the extraction of a stone from the bladder.

RESISTANCE TO TREATMENT

When sodium cacodylate was first used, it was feared in some quarters that the spirochetes might become resistant to arsenic and fail to respond to a later treat-

ment with salvarsan. So far this has not materialized, and, from the absence of effect on the spirochetes shown in the preceding experiments, it is not likely to be realized. The spirochetes in lesions of several rabbits which had been treated with sodium cacodylate have promptly disappeared after a subsequent treatment with salvarsan in ordinary doses of 0.01 gm. per kg. In the following case, the spirochetes also behaved similarly.

The case was under the care of Dr. M. D'Arcy Magee of Washington, who kindly furnished the following data:

A man, aged 22, date of whose infection was uncertain, had primary lesion and secondary eruption in July, 1910; was given inunctions of mercury and potassium iodid for two months. The patient was seen by Dr. Magee Sept. 27, 1910; there were numerous mucous patches in mouth, scaling syphilids of palms and soles of feet and general glandular enlargement. Sodium cacodylate was given by intramuscular injection up to 18 grains, extending over about a month. The doses were of ½ grain daily at first and then, after a short intermission 1 grain daily. Toward the end of the treatment the patient's breath had a strong odor of garlic. The lesions of the palms and soles improved considerably but the patches remained unchanged. I saw the patient Nov. 14, 1910; spirochetes were found in the mucous patches of the mouth by the dark-ground microscope; serum taken on this day was positive by the Wassermann reaction. November 16, 0.5 gm. salvarsan was given by injection of the alkaline solution in each buttock. November 23, mucous patches healed. November 29, serum weak; hands and feet clean. December 5, gain of 5 pounds since November 30. December 14, serum weak. December 19, serum negative, thirty-three days after injection. The patient has gone to work for first time in four months.

Hence, while there is no indication for the use of sodium cacodylate in syphilis on experimental grounds, it apparently does not interfere with a subsequent treatment with salvarsan.

CONCLUSION

As is noted above, Hata found that the ratio C:T for rabbits was 1:10 for intravenous administration of a single dose. It is probable that for human medicine the ratio is somewhat greater, because in the rabbit the disease is confined to the testicles or scrotum and the spirochetal content of the body cannot be as great as it is in a generalized infection in man. Now we know that, other things being equal, the curative dose varies with the number of spirochetes present; but as destruction is definite at 1 to 10 or in some cases even at 1 to 20, there is good reason to believe, both on experimental and clinical grounds, that a ratio of 1 to 5, or 1 to 2, will suffice to kill all spirochetes in the human body. In some early cases of syphilis patients have beyond reasonable doubt been cured by doses of from 0.3 to 0.6 gm. and 1.2 gm. has been given without ill effects.

At the present time it may be taken for granted that salvarsan is a specific against syphilis and the important question now is: What is the best dose and best method of administration for a given stage of the disease? There is considerable evidence to show that the size of the dose should vary inversely with the duration of the disease. The original Alt method of injecting the alkaline solution intramuscularly seems to hold its own for certainty in results. The Wechselmann method, or the subcutaneous injection of the neutral suspension, has lost much of its vogue on account of slow absorption and liability to necrosis of the tissues. One or more intravenous injections, in some cases, seems to be too brief in action; but observations extending over months are needed on all these points. In Ehrlich's words, "The indications at the present time are not to scatter our

5. Dawes and Jackson: Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate, Used Hypodermatically, THE JOURNAL A. M. A., June 22, 1907, p. 2090.

strength in trying out new substances but to concentrate all our efforts on improving the method of administration, on strictest asepsis, on carefully increasing the dose, on repeating the treatment and finding suitable adjuvants, in order constantly to approach more nearly to the ideal of *therapia magna sterilisans*."

SUMMARY

1. Sodium cacodylate has no spirillicidal action in rabbits infected with *Spirochæta pallida* when tested by Ehrlich and Hata's technic.

2. Treatment with sodium cacodylate does not interfere with a subsequent treatment with salvarsan.

3. The most important question in the treatment of syphilis to-day is, "What is the most suitable dose and what is the most efficient method of administration of salvarsan in a given stage of the disease?"

TRANSMISSION EXPERIMENTS WITH THE VIRUS OF POLIOMYELITIS

FINDING THE VIRUS IN THE NASOPHARYNGEAL MUCOSA OF MONKEYS RECOVERED FROM THE ACUTE STAGE *

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AND

WILLIAM P. LUCAS, M.D.

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The findings which are recorded in the following protocols and charts came out in an investigation for which we received our original material (virus) from Dr. Flexner and Dr. Lewis, whose encouragement and advice have made this work possible. This investigation is being carried on for the purpose of determining some means of early diagnosis and of the treatment for this condition both in the way of prophylaxis and also during the acute stage. If successful in keeping the subjects alive, we hoped that some light might be thrown on the late treatment of the paralyzed muscles. In a more complete report which is shortly to follow, these questions will be more fully discussed.

In the attempt at keeping the paralyzed monkeys alive success was only partially obtained. For this partial success we are largely indebted to our laboratory assistant, Mr. J. S. Winslow. We have been able to keep four monkeys alive ranging from six weeks to five and a half months. In these cases we feel sure that death was not due directly to the paralysis, but was in most cases due to intercurrent affections and especially to inanition.

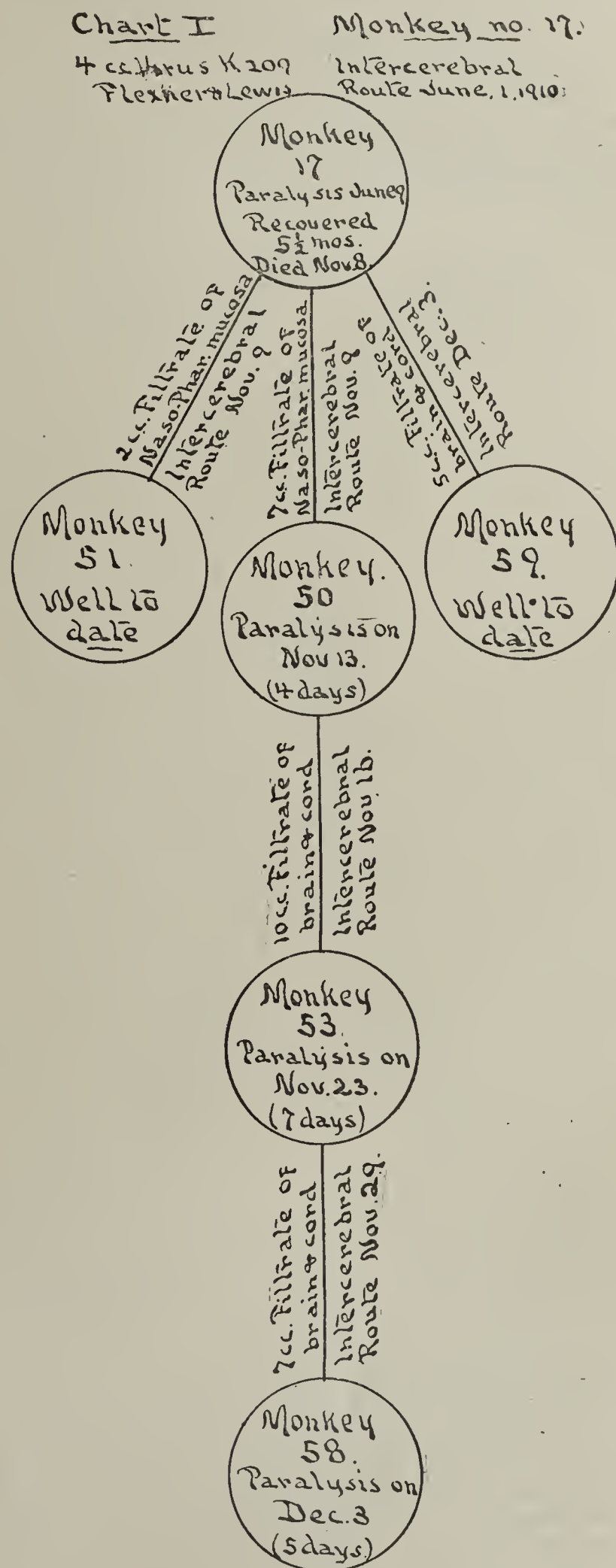
The important results deal with Monkey 17 and the series inoculated from the nasopharyngeal mucosa of this monkey, and also with Monkey 54 and the series inoculated from the nasal mucosa of this monkey, and finally with Monkey 6 and its series.

PROTOCOLS OF EXPERIMENTS

MONKEY 17.—This monkey received 4 c.e. of virus K (Flexner and Lewis) on June 1, 1910. The first symptoms of paralysis appeared on June 9; complete paralysis by June 11. The paralysis had begun to improve on July 15, when there was marked improvement in both fore and hind limbs. This monkey lived throughout the summer and had recovered to such an extent that he could feed himself with considerable ease. He could almost turn himself, but could not stand or walk. Early in November his appetite failed, and he died on November 8.

* From the Department of Surgical Research, Harvard Medical School. Work done under a grant from the Proctor Fund.

Complete necropsy by the Department of Neuropathology showed no intercurrent disease. The nasopharyngeal mucous membrane was removed under careful precautions; was ground up in sterile salt solution and passed through a Berkefeld filter, the resulting amount being 10 c.e. of filtrate. Nine c.e. of



this filtrate from the nasopharyngeal mucous membrane were passed by the intercerebral route into two monkeys.

MONKEY 50.—This animal received 7 c.e. of nasopharyngeal membrane filtrate of Monkey 17, Nov. 9, 1910. The first symptoms appeared on November 13 (four days). There was no

paralysis noted. The monkey, however, showed the characteristic nervous prodromal symptoms. He died during the night and necropsy performed early November 14 by the Department of Neuropathology showed typical selective lesions of myelitis.

MONKEY 51.—This monkey received, intercerebral route, 2 c.c. of filtrate of nasal mucosa of Monkey 17. This monkey has at no time shown any symptoms, and at the time of writing this report, Jan. 13, 1911, is perfectly well.

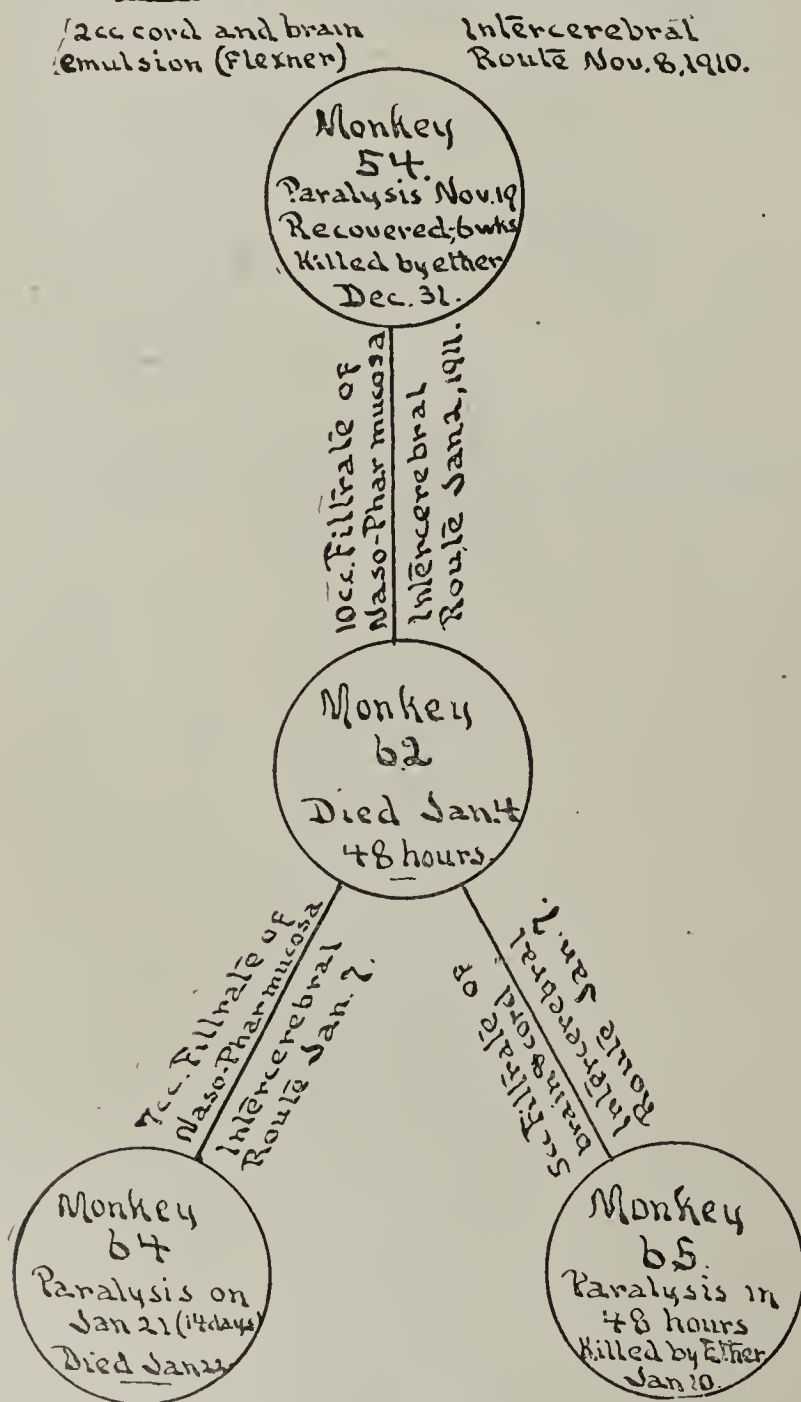
MONKEY 53.—On November 16 Monkey 53 received, intercerebral route, 6 c.c. of a salt solution emulsion of the cord and brain of Monkey 50. On November 22, the first prodromal symptoms were noted; November 23, typical complete paralysis. November 23, the animal was killed by etheriza-

tion. Necropsy by the Department of Neuropathology showed typical selective lesions of myelitis.

was supposedly a spontaneous paralysis which had occurred in 1908. This baboon showed marked weakness of her hind legs; she could not jump, but could climb in a fairly active, though clumsy way. She was given an intercerebral injection on November 8 of 2 c.c. of a 5 per cent. emulsion in salt solution which we had obtained from Dr. Flexner on November 5. The first signs of paralysis appeared on November 19. The monkey was kept alive until December 31, when on account of inanition she was etherized and her nasopharyngeal mucous membrane removed under careful precautions, ground up and passed through a Berkefeld filter. This monkey at autopsy showed a well-marked softening of the gray matter, especially of the anterior horns of the cord.

MONKEY 62.—This monkey was given 10 c.c. of the filtrate from the nasopharyngeal mucous membrane of Monkey 54 on the morning of January 2. January 3, in the afternoon, Monkey 62 first showed the prodromal restlessness and was apparently very sensitive and was having slight tetanic movements. There was no paralysis at this time and he could move about his cage. January 4, in the morning, he was found unable to get up. Paralysis, however, was not present so far as we could make out, though both fore and hind legs

Chart II Monkey no. 54 (Small baboon)



tion. Necropsy by the Department of Neuropathology showed typical selective lesions of myelitis.

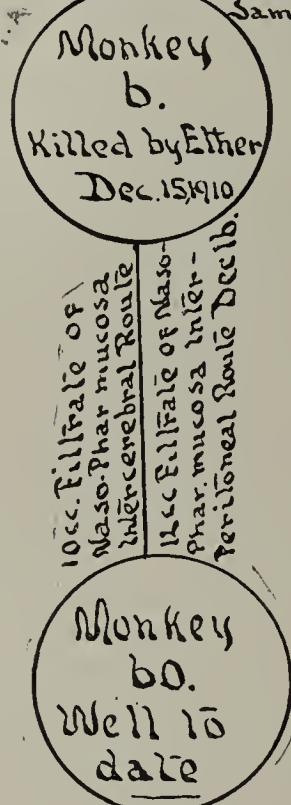
MONKEY 58.—November 29 this monkey was given 6 c.c. of emulsion from cord of Monkey 53, intercerebral route. On December 3 he showed the first signs of paralysis. Paralysis was complete late in the afternoon and he was killed by etherization on the same day. Necropsy by the Department of Neuropathology showed typical selective lesions of myelitis.

MONKEY 59.—December 3, 5 c.c. of the filtrate of the cord of Monkey 17, which had been preserved in equal parts of glycerin and salt solution was given by the intercerebral route. There have been no symptoms from this monkey at any time.

MONKEY 54.—This was a small baboon which had been sent to us from Springfield, Mass., for the purpose of studying what

Chart III Monkey no. 6.

Since Mar. 9, 1910. 8 inoculations of Positive Virus. No Paralysis. 2 Intercerebral & 6 Sub-cut. Routes. Same cage as acute cases.



were held tonically contracted. During the morning the monkey had respiratory failure and died rather suddenly. Necropsy by the Department of Neuropathology showed in the brain hemorrhages in the meshes of the pia with a moderate number of polynuclear leukocytes and a mononuclear cell infiltration in the medulla. The meninges at focal points showed intense infiltration with various cells, polynuclear, mononuclear, endothelial cells, etc. In the substance of the medulla the glia cells showed a slight reaction to acute ganglion cell changes. There were a few scattered hemorrhages. The cerebrospinal fluid taken at the time of autopsy showed a large number of polynuclear leukocytes, compound granular cells, lymphocytes, etc. The nasopharyngeal mucous membranes were removed under careful precautions and passed through a Berkefeld filter. The cord and brain were also emulsified and passed through a Berkefeld filter.

MONKEY 64.—On January 7 this monkey received 7 c.c. of the nasopharyngeal mucous membrane of Monkey 62. On January 21 the first symptoms of paralysis appeared. The monkey was found in the morning in a very weakened condition, which rapidly progressed until there was a complete paralysis with slight respiratory movement. The monkey lived for twenty-four hours in this practically moribund condition,

and died January 22, when a necropsy was performed by the Department of Neuropathology, which showed in the cord degeneration of the ganglion cells, the glia cells were markedly increased and the small blood-vessels were very prominent.

MONKEY 65.—On January 7 this monkey was given 5 c.c. of the filtrate from the cord of Monkey 62. January 9 there was complete paralysis. January 10 the monkey was killed by etherization because of marked respiratory difficulties. Necropsy by the Department of Neuropathology showed acute regressive changes in the ganglion cells and an increase of the glia elements in the gray matter of the cord.

MONKEY 6.—This was a monkey of our first lot; he received 3 c.c. of virus MA (Flexner and Lewis) by the intercerebral route on March 9, 1910. On March 22 there was a marked drop in his white count from an average of 26,000 to 14,000, which in the light of other findings might possibly be considered as a prodromal symptom; otherwise there were no symptoms from the inoculation. During April and May this monkey received 25 c.c. of a thick emulsion of cord and brain from positive cases in monkeys. This was for the purpose of creating antibodies. At no time were there any symptoms from these inoculations. This monkey was also allowed to live in the cage where several of the monkeys came down with their acute attacks, and drank out of the same eup during the acute onset with one or more monkeys. He at no time showed any symptoms. He was killed by etherization on December 15 and his nasopharyngeal mucous membrane removed under careful precautions and passed through a Berkefeld filter.

MONKEY 60.—December 16 this monkey was given 10 c.c. of filtrate from the nasopharyngeal mucosa of Monkey 6 by the intercerebral route. He was also given 12 c.c. of the same filtrate intraperitoneally. There have been no symptoms up to the present time.

These experiments, therefore, show that it was possible to transmit from monkey to monkey a typical poliomyelitis from the filtrate of the nasopharyngeal mucosa of two monkeys dying without other discoverable infections respectively six weeks and five and a half months after the acute stage of the disease. In one case we have been able to transmit the disease from the nasopharyngeal mucosa of a monkey dying in the acute stage. In these experiments it has been impossible to transmit the disease from monkey to monkey by intercerebral inoculation of the cord and brain of these recovered subjects or from filtrates of the nasopharyngeal mucosa of a monkey in apparent good health, which had received a previous intercerebral inoculation of an active virus with only questionable prodromal symptoms, but which had lived in closest contact with monkeys in the acute stage of the disease.

That the virus of poliomyelitis is contained in the nasopharyngeal mucosa of inoculated monkeys was pointed out by Flexner and Lewis,¹ who regarded this membrane as a possible route of spontaneous infection in man.² The virus had previously been demonstrated solely in the mucous membrane of recently inoculated animals. The observations recorded here indicate that the virus of poliomyelitis can persist in a viable and infectious state in the nasopharyngeal mucous membrane in the monkey for several months after the acute period of paralysis has passed, and for a far greater period of time than it survives in the central nervous system.

We have noted no case of transmission from monkey to monkey except by direct inoculation, although closest association with subjects in the acute stage has been maintained both by contact and the use of the same feeding utensils and material.

372 Marlborough Street—261 Beacon Street.

THE FUNCTIONS OF THE STOMACH IN DIABETES MELLITUS

WITH SPECIAL REFERENCE TO THE DETERMINATION OF
PEPSIN*

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It has been known for some time that the motility of the stomach is usually increased and that the gastric secretion is frequently diminished in diabetes mellitus. In pancreatic diabetes the ferments or zymogens are, according to those who have studied them, frequently affected; the pancreatic ferment, the muscular ferment, and the glycolytic ferment are deficient, suppressed or not activated, and glucose does not undergo combustion, but is excreted in the urine.

The few cases that form the basis of this paper were studied with the object of investigating the secretion of pepsin in patients with diabetes mellitus.

As diabetes mellitus is not a common disease, and as digestion is usually good in diabetic patients, one does not have occasion to examine the functions of the stomach in many of these patients. Some of these patients, however, complain of stomach distress, and some other patients have stomach disease, although they do not have any subjective symptoms of dyspepsia. One of the patients whose case is here reported had catarrhal gastritis, one catarrhal gastritis and dilatation of the stomach, with retention, and one other patient had marked gastroparesis; only one of these, the last, sought advice for dyspepsia or complained of indigestion. Altogether, twenty-two test breakfasts or full test meals were given to these seven patients. It was learned early that one could not wait forty-five minutes to aspirate the stomach after an Ewald test breakfast, but in order to obtain any stomach contents for examination the aspiration had to be performed in thirty minutes, and in some instances at the end of twenty minutes. This was true in the case of L. W., who had gastroparesis. Three attempts to obtain gastric contents in forty-five, thirty and twenty-five minutes, respectively, failed, and the attempt was successful only on aspirating the stomach in twenty minutes, and then only 10 c.c. of contents were obtained. The patient refused further examination. It was also noted that in some instances the stomach was empty in two or two and a half hours after a full dinner.

In the case of S. B., on one examination after an Ewald test breakfast, very little material was obtained at the end of thirty minutes. On one other occasion, however, a pint of contents was aspirated at the end of three hours after a full dinner. At that time the patient was suffering from an increase in the severity of his symptoms, with a greater amount of glucose output in the urine. In the Ewald test breakfast, ordinary wheat bread was eaten; the full meals were those in which only foods permitted in diabetes mellitus were given.

Pepsin digestion was tested by the Mett method. Pieces of glass tubing 2 mm. in diameter containing the boiled white of egg were placed in the liquid to be tested—stomach contents 1 c.c. to 16 c.c. of one-twentieth normal hydrochloric acid—and this put in the incubator for twenty-four hours, after which the glass tubing containing the egg-white was removed and the digestion of egg read off under the microscope by using a mechanical stage. All of these specimens of gastric contents were

1. Flexner, S., and Lewis, P. A.: THE JOURNAL A. M. A., Feb. 12, 1910, p. 535.

2. Flexner, S.: The Contribution of Experimental to Human Poliomyelitis, THE JOURNAL A. M. A., Sept. 24, 1910, p. 1105.

* From the Laboratory of Clinical Pathology, Philadelphia Polyclinic and College for Graduates in Medicine.

controlled by testing at the same time other specimens of gastric contents known to contain pepsin.

Eighteen tests for pepsin were made on the gastric contents of six patients, as shown below. In one, no pepsin was found; in one, although there was a high hydrochloric acid content, in five different analyses, two showed no pepsin digestion; and of the other three tests the digestion was 0.1 mm. In one patient there was a vigorous pepsin digestion; in two other cases the pepsin was somewhat reduced. While in one patient, A. C., the gastric contents were examined three times after an Ewald test breakfast, and three times after a full dinner pepsin was not found in the first five examinations, but a good pepsin digestion was found on the sixth examination. This was after a full dinner.

A short note of the history of each case is here appended.

CASE 1.—Patient, L. W., female, aged 65; born in Germany. Gastropotosis and diabetes mellitus. Amount of glucose in urine, 3.1 per cent. Ewald test breakfast aspirated at end of different periods showed as follows: At the end of forty-five minutes, no contents obtained; at end of thirty minutes only a few drops obtained on end of tube; at end of twenty-five minutes only a few drops obtained on end of tube; at end of twenty minutes 10 c.e. obtained; total acidity 90; free hydrochloric acid 48; pepsin not determined.

CASE 2.—Patient, A. C., female, aged 45; born in Russia; patient kindly sent to me by Dr. A. A. Eshner.

Glucose in urine, 1.8 per cent.

Nov. 18, 1908: Ewald test breakfast; aspirated in forty-five minutes, nothing obtained.

Nov. 23, 1908: Ewald test breakfast; aspirated in thirty minutes, 20 c.e., total acidity 4; no free hydrochloric acid; no pepsin.

Nov. 30, 1908: Full dinner; aspirated in three hours, nothing; no lactic acid; no Oppler-Boas bacilli found; no pepsin.

Dec. 14, 1908: Full dinner; aspirated in two and one-half hours, 30 c.e., total acidity 10; no free hydrochloric acid; no pepsin.

Dec. 21, 1908: Ewald test breakfast; aspirated in thirty minutes; 4 c.e., total acidity 6; no free hydrochloric acid; no pepsin.

Dec. 28, 1908; full dinner; aspirated in two and one-half hours; 20 c.e.; total acidity 10; no free hydrochloric acid; 2.7 mm. pepsin.

Pepsin absent after five examinations; present on the sixth.

CASE 3.—Patient, H. C., male; aged 39; born in Russia; kindly sent to me by Dr. David Riesman. Glucose in urine, 2.8 to 3.2 per cent.

Feb. 5, 1909: Ewald test breakfast, aspirated in forty-five minutes; 150 c.e.; total acidity 38; free hydrochloric acid 28; 4.2 mm. pepsin; digestion good; considerable mucus present.

Feb. 17, 1909: Full dinner; aspirated at end of three hours; 1 pint; total acidity 44; free hydrochloric acid 26; 4.1 mm. pepsin. Gastric contents contained a great deal of mucus.

CASE 4.—Patient, F. S., female; age 37; born in Russia. Dr. David Riesman permitted me to examine this patient. Diabetes mellitus; lacerated cervix and perineum. Glucose in urine from + to 7 per cent.

Feb. 16, 1909: Ewald test breakfast aspirated in thirty minutes; 20 c.e.; total acidity 76; free hydrochloric acid 36; 2. mm. pepsin.

CASE 5.—Patient, D. C., female; aged 40; born in Russia. Kindly sent to me by Dr. David Riesman. Glucose in urine 2.35 per cent.

Dec. 1, 1909: Patient ate a full dinner at noon. This not being known, she was given an Ewald test breakfast at 1.45 p. m. Aspirated in forty minutes; 15 c.e.; total acidity 27; no free hydrochloric acid; pepsin 2.4 mm.

Dec. 8, 1909: Full dinner at 1 o'clock; aspirated at end of one hour and forty minutes; 30 c.e. very thick contents containing a great deal of mucus; total acidity 40; no free hydrochloric acid; pepsin 2.1 mm.

CASE 6.—Patient, C. L., female; aged 56; born in Russia; kindly sent to me by Dr. A. A. Eshner. Glucose in urine, 3.75 per cent.

Aug. 29, 1910: Full dinner, aspirated at end of two hours and forty minutes; 20 c.e.; total acidity 50; no free hydrochloric acid; no pepsin.

Ewald test breakfast, aspirated after thirty minutes; 10 c.e.; total acidity 46; no free hydrochloric acid; no pepsin.

CASE 7.—Patient, S. B., male; aged 21; born in Russia; kindly sent to me by Dr. A. A. Eshner. Glucose in urine 4.16 per cent.

Ewald test breakfast: aspirated after forty-five minutes; 45 c.e.; total acidity 86; free hydrochloric acid 50; pepsin 0.1 mm.

Full dinner: aspirated after two hours and forty minutes; 300 c.e.; total acidity 66; free hydrochloric acid 48; no pepsin.

Ewald test breakfast: aspirated after thirty minutes; 10 c.e.; total acidity 90; free hydrochloric acid 50; no pepsin.

Full dinner: aspirated after three hours; 40 c.e.; total acidity 99; free hydrochloric acid 50; 0.1 mm. pepsin.

Full dinner: aspirated after three hours; 1 pint; total acidity 96; free hydrochloric acid 60; 0.1 mm. pepsin.

TABLE OF EXAMINATIONS *

Case No.	Patient	Tests No.	Pepsin†		T. A.	Free HCL	Pepsin mm.
			+	—			
1	L. W.	.	.	.	90	48	‡
2	A. C.	6	1	5	10	0	2.7
3	H. C.	2	2	.	44	28	4.1
4	F. S.	1	1	.	76	36	2.0
5	D. C.	2	2	.	27	0	2.4
6	C. L.	2	.	2	40	0	0.0
7	S. B.	5	3	2	99	60	0.1

* No lactic acid present in any case.

† Plus column, number of times present; minus column, number of times absent.

‡ Not determined.

The total acidity and the amount of free hydrochloric acid were also determined, and tests were made for lactic acid when free hydrochloric acid was absent. No lactic acid was found. The total acidity was high in three cases and the free hydrochloric acid was high in four. Hydrochloric acid was absent in three.

It has been shown by Riegel and others that hydrochloric acid may be absent from the stomach contents for long periods of time in this disease and then reappear. Honigsmann ascribed the lack of free hydrochloric acid to the increased motility of the stomach. Rosenstein was of the opinion that if free hydrochloric acid was permanently absent, it was due to atrophy of the glandular apparatus of the stomach, caused by interstitial inflammation of the gastric mucosa. Autopsy on these latter cases, however, failed to prove this view to be correct.

It is also believed that in those cases in which there is a temporary absence of free hydrochloric acid in the stomach contents the cause is a neurosis. As most of these patients have arteriosclerosis, it is possible that this condition may also have a part in the stomach functions in this disease.

In the few cases here reported it is shown that the absence of free hydrochloric acid in diabetes mellitus, as in other diseases, does not mean an absence of pepsin. On the other hand, it is also shown that a high percentage of hydrochloric acid does not indicate a good pepsin digestion.

A pepsin digestion of between 3 and 4 mm. is in my experience about the average in non-diabetic patients.

While one cannot draw any general conclusions from a small number of cases, it may be said that secretion of pepsin in diabetes mellitus is frequently reduced and sometimes absent; this observation may be added to the

facts already mentioned and long known; i. e., the gastric motility is usually increased and the gastric secretion is frequently diminished in this disease.

In conclusion I wish to thank Drs. Eshner and Riesman for sending their patients to me for study and Dr. Farr for permission to examine them in his clinic.

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THE ADVANTAGES OF NITROUS OXID-OXYGEN ANESTHESIA ESPECIALLY IN CONNECTION WITH ULTIMATE RECOVERY *

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As the aim of the surgeon is to record a "successful operation," not only from a scientific point of view, but from the patient's standpoint as well, the selection and administration of the anesthetic becomes more and more a matter for consideration as this branch of medical science is developed.

Until recent years the dangers of the anesthetic were considered solely those occurring on the operating-table, but laboratory investigation has established, beyond the possibility of a doubt, that a percentage of surgical mortality, heretofore considered to be due to the patient's condition, effects of the operation, etc., is sometimes due directly to the effects of the anesthetic, even though death occurs remotely from the time of the operation. Careful and extended clinical observation on nitrous oxid-oxygen anesthesia in several thousand cases, by some of the most talented surgeons of this country, completely verifies this conclusion.

The use of nitrous oxid as an anesthetic agent presents an interesting and a very peculiar history, which I shall not attempt to detail here. To Andrews, of Chicago, belongs the credit of discovering that by the addition of the proper amount of oxygen, the asphyxial symptoms of nitrous oxid are prevented without destroying its anesthetic properties.

Since this discovery was made, over forty years ago, nitrous oxid-oxygen has slowly, intermittently, but very persistently gained recognition until to-day it occupies the meritorious position of being endorsed by one of the largest and greatest scientific societies of the world, as being, all effects considered, the best means for producing anesthesia that is known.

There is a prevalent idea that nitrous oxid-oxygen is better adapted for minor surgery and short operations than for major work. This is an erroneous impression, however, for the longer this anesthesia is maintained, the better it becomes in every way. I myself have administered it throughout practically the whole range of operative procedure from a simple incision to difficult and complicated operations lasting over four hours, which is the longest period, as far as I know, wherein this anesthetic has ever been continuously administered. Dr. Frederick Hewitt, of London, a leading authority on anesthetics, says:

There is no form of anesthesia at present known which is so devoid of danger as that which results from nitrous oxid when administered with a sufficient percentage of oxygen to prevent all asphyxial complications.

The Anesthesia Commission of the American Medical Association reported at its last session in St. Louis as follows:

As a routine anesthetic nitrous oxid has a peculiar value, . . . (and) in the hands of highly skilled anesthetists the method is the best yet devised.

These statements are corroborated by such practical surgeons as Crile, Meyer, Kelley, Halsted and Bevan, who collectively have certainly used it in thousands of cases, and are therefore in a position to express an opinion of value as to its superior influence toward ultimate recovery.

There is much less surgical shock and postanesthetic nausea and depression with nitrous oxid than with ether or chloroform; the patient regains consciousness very quickly, and, being less depressed, recovers from the effects of the operation sooner and better.

Hamburger and Ewing, who have made an extended laboratory investigation of the effects of the narcosis produced by nitrous oxid, chloroform and ether on the blood, and whose findings are published as a part of the preliminary report of the Anesthesia Commission of the American Medical Association, say, as regards ether:

The color index shows a rather constant drop, starting immediately after anesthesia and reaching its lowest point on the fifth and sixth days. This would indicate a relative loss of hemoglobin per cell, and again is unlike nitrous oxid results, in which the only sign of a low color index is found immediately after the anesthetic mask is removed, and which is completely gone in two hours.

The volume index likewise shows an immediate loss, which is most marked in twenty-four hours, and again on the fifth to seventh days. In nitrous oxid readings the percentage volume remained unchanged throughout.

According to these investigators so short an anesthesia as fifteen minutes with ether causes a definite and demonstrable anemia, and such an effect as this, which does not begin to improve till after the fifth day, must certainly retard convalescence even in favorable cases, and in critical cases may be the determining factor in producing a fatal termination.

Chloroform produces even more destructive changes on the blood than does ether, while its degenerative action on the liver has been mentioned by so many writers that this serious and remote effect needs merely to be mentioned here.

For some time it has been recognized that ether increases the toxemia arising from infection. Recent investigation shows that this is due to the fact that ether impedes the functional activity of the leukocytes: that is, it lessens the patient's resisting power against the infection, whereas nitrous oxid exerts no such injurious effect on the blood-cells, and consequently does not lower the patient's immunity, which naturally exists. In serious cases of infection, as well as in the "borderland" cases in general, the difference in ultimate recovery under the two anesthetics is strikingly shown.

Numerous surgeons have advised against the use of ether in tuberculous conditions, as, in their experience, it causes new foci of infection to develop. This, however, is only a particular instance of the general effect produced, for, no matter what the infection may be, the toxic effect of ether on the leukocytes lessens the efficiency of Nature's effort to combat the invading host.

As is well known, ether is an irritant to the respiratory mucous membrane and to the kidneys, whereas

* Read before the New York Academy of Medicine, Section on Orthopedic Surgery, Nov. 18, 1910.

nitrous oxid is without deleterious effect on these tissues, and is therefore strongly indicated as the anesthetic agent whenever these structures are involved, no matter what the operation may be, as in tuberculosis, pneumonia, bronchitis, laryngitis, nephritis, diabetes, pyelitis, and a host of other inflammations and infections of the respiratory and genito-urinary tracts. In fact, when you take into consideration the lessened amount of surgical shock and of postoperative discomfort and depression, the absolutely non-irritant action on the mucous membranes of the tracts involved in its administration and elimination, and the blood elements left unimpaired, its range of usefulness is so broad that it should be the anesthetic of choice, except in instances in which it is specially contra-indicated. Besides, when this anesthetic is used, there is less liability of infection occurring during, or subsequent to the operation, inasmuch as the patient is less depressed, and natural immunity undisturbed. These are practical points which every operator should carefully consider, as they are important elements, no matter how trivial each may at first appear, when considered separately, for, taken collectively, they most certainly affect the postoperative condition in every case.

It is readily granted that in the hands of the skilled anesthetist there is very little immediate danger in the use of the other anesthetics, and that, in such hands, the immediate mortality is very low indeed; but is it fair to conclude that the remote effects, much more subtle in their influence, and therefore much more difficult of detection, are consequently *nil*? Take, for instance, a case of grave infection; one of the other general anesthetics is faultlessly administered, but the surgeon's mortality is increased, and every surgeon of wide experience encounters some such cases. In the light of this research can it be said that the anesthetic did not contribute to the fatal result, or that the patient might not have been saved had a less toxic and less depressing agent, and one which did not lessen the patient's natural resisting power, and decrease the life-sustaining function of the blood-cells, been used? It is not contended that this form of anesthesia saves all patients of this class, but, in the language of Crile, "Not a patient showed the rapid march to fatality immediately following the operation which occasionally follows ether." Why the conspicuous absence of that "rapid march to fatality?" Simply because the patient is given a new and firmer hold on life, enabling some to recover that otherwise would simply increase the mortality. I very readily assent to the observation of Gatch that "very sick patients, with a rapid pulse and quick, shallow respiration, actually seem benefited by this form of anesthesia." That is, such patients will, during an operation under this anesthesia lasting for forty-five minutes to an hour, manifest a distinct improvement in the rate and quality of the circulation and respiration, both during and subsequent to the operation, the effect being quite permanent, as it is not a mere stimulant.

From the patient's point of view the lessened amount of postoperative discomfort alone is sufficient to call for this anesthetic, as he usually dreads the subsequent nausea, vomiting and depression more than the effects of the operation itself. Besides, when a patient can be told that he is simply to be given "laughing-gas" it allays to a very great extent the fear and dread of the anesthetic, and many patients will submit to operations under this agent who would otherwise refuse all operative intervention.

It is a matter of no little comfort to the patient and to his family to know that complete consciousness returns so quickly after the operation is completed, and especially is this so, when, as in the majority of cases, there is freedom from postnarcotic discomfort, and a pleasant impression is left on the mind by the "laughing-gas." For a patient to be returned from the amphitheater to his own room completely conscious, smiling and talking to his nurse and friends, even after a prolonged operation, presents a different picture from that usually seen with other anesthetics, and gives a distinct advantage in convalescence. I cite just one case to illustrate: Dr. X. of a neighboring state was anesthetized for a rectal operation, necessarily requiring deep anesthesia. Within a very short time after the administration of the anesthetic was stopped he opened his eyes and said with a smile to those in attendance: "Well, if you folks had as good a time as I did, you certainly enjoyed this operation." He had had a dream about being at a big fire. Some time afterwards he said in a private letter to me: "You simply make anesthesia a pleasure." To have an intelligent patient, and especially a practitioner of wide experience, consider the taking of the anesthetic as a genuine pleasure is certainly valuable testimony to the great advantage offered by this anesthetic.

It is almost imperative to use a preliminary hypodermic injection of morphin and atropin about one-half hour before the time of the operation, as this medication aids very materially in securing muscular relaxation. Besides, the patient recovers from this anesthesia so quickly that it is usually indicated for the postoperative pain alone. When it is used the patient's nerves are quieter and he approaches the operation with more confidence and less fear—an important element in every case. In that class of patients or operations, in which it is difficult to overcome muscular rigidity the addition of a very small amount of ether—not sufficient to give the ether after-effects—in conjunction with the nitrous oxid and oxygen will secure the necessary relaxation. Used in this way, nitrous oxid-oxygen is a pleasant anesthetic for even the most fastidious patient, fulfils the requirements of both minor and major surgery, and produces the lightest and least toxic general anesthesia yet discovered.

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PRIMARY SARCOMA OF THE STOMACH WITH AUTOPSY FINDINGS *

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Sarcomas of the stomach are rare, and, beyond the mention of this fact one finds little discussion of the subject in most text-books of pathology. Therefore, all cases which are substantiated by microscopical study should be reported so that our knowledge regarding the pathology and symptomatology of this condition may be increased. For these reasons I report the following case:

History.—The patient, E. R., a white woman aged 72, was in the services of Drs. J. E. Thornton and M. D. Lewis, of Columbia, Mo., and the following history was given me by the former. The patient's husband died of cancer of the face. She had been healthy until two years ago when she began to decline. About one year ago she began to suffer pain in the

* From the Pathological Laboratory, University of Missouri.

region of the spleen which gradually increased. She had been in bed only about one month. A tumor mass was palpable in the epigastric region. The patient was very anemic but quite fleshy. The clinical diagnosis was cancer.

Necropsy.—Woman, well preserved for her age. The hair of the head and pubis was gray. The skeletal system was moderately heavy and the musculature was light. The subcutaneous layer of adipose tissue was quite thick and of a good color. All of the thoracic and abdominal viscera were normal except the stomach. Involving the pyloric end of the stomach was an annular tumor measuring 5 inches in diameter and $\frac{1}{2}$ an inch thick in places. The diffused tumor was covered with mucous membrane except for a surface measuring about 2 inches in diameter. The tumor was very firm and the cut surface was smooth and glistening white in color. There were no evidences of metastatic growths in the lymph-nodes or in any of the organs. Although the patient did not look especially "cancerous" and the gross findings were far from being typical for such a condition, a provisional diagnosis of carcinoma of the pylorus was made. The microscopic examination showed the tumor to be a small round-cell sarcoma. There was little stroma and many mitotic figures were present. In sections showing the mucous membrane the tumor cells could be seen invading the subepithelial connective tissue.

A good article on sarcomas of the intestinal tract with splendid compilation of statistics was written by Corner and Fairbank.¹ In the 178 reports of cases collected from the literature, fifty-eight cancers were of the stomach. There was only one portion affected more, the small intestines. There were sixty-five occurring in this region. Corner and Fairbank found the cases about equally divided as to sex, males twenty-six, females twenty-nine. The most common age was between 40 and 50 years. The youngest patient was $31\frac{1}{2}$ years old and the oldest 78. They found 36 per cent. located at the pylorus. About 60 per cent. of gastric carcinomas are located at the pylorus. The following points given by them might be of value in differentiating sarcoma from carcinoma of the stomach: "The rapid course with marked anemia, the absence of hematemesis or gastric dilatation, the presence of a large tumor, and, possibly, the age of the patient." Of fifteen patients operated on, four were reported living after four, five, twelve and twenty-four months respectively since operation.

THE ADMINISTRATION OF SALVARSAN

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One-third by weight of salvarsan is arsenic, and therefore in administering 0.6 gm., which is an ordinary dose, we are giving the patient 0.2 gm. of arsenic, or fifty times the amount that in the usual pharmaceutical combinations would cause poisoning. It is through the genius of Ehrlich that a way has been found to give this enormous dose, and almost always without causing any disagreeable symptoms, with the exception of pain—and even pain may be eliminated by injecting the drug intravenously. That great care must be observed in giving it goes without saying.

The drug is put up as a dry powder, enclosed in glass tubes, and in this form is stable; at least I have never yet heard of any trouble arising from its decomposition in the tubes. In solution, however, it quickly decomposes; in simple water it forms an acid solution that lasts undecomposed for several hours, probably for a

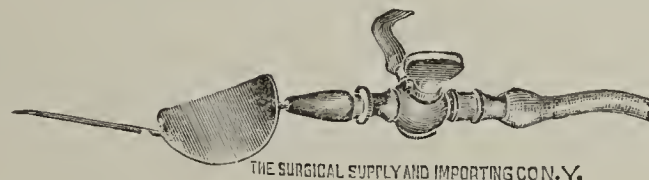
day. As an alkaline solution, however, it quickly decomposes, and shortly turns wine red. The drug is administered either suspended in oil or as a solution, and must be made up fresh at each time of using. I have never seen it suspended in oil, but Neisser has so given it, and has advised oil of sesame as the best oily medium.

The acid watery solution of the drug is very painful when injected, and should first be made either alkaline or neutral. The care and trouble attendant on dissolving, alkalizing, and again neutralizing the drug, and the further trouble of injecting it either subcutaneously, intramuscularly, or intravenously, and the pain, and occasional local necrosis caused when given subcutaneously, have impelled clinicians to adopt numberless modifications in technic. The best results I have seen, however, have been attained by comparatively simple methods.

THE INTRAMUSCULAR INJECTION OF SALVARSAN

Alt was the first to employ the drug clinically, and his method, as I have seen it in Lesser's clinic, is painful, as all these methods are, but it is simple and effective, and has not up to the present, in Lesser's hands, caused necrosis or abscesses. He has so used it in a great many cases, but he always taps wood when he speaks of his good luck.

He first takes salvarsan, 0.5 or 0.6 gm., and warm water, 5 or 6 c.c., and mixes them together in a glass-stoppered, graduated glass cylinder with glass balls to



Needle used by Schreiber, having a bayonet bend in the shaft with a ribbed finger-hold for guiding the needle in intravenous injection, together with the two-way cock between the needle and the barrel of the syringe.

facilitate solution. He then adds 3 c.c. of sodium hydroxid (4 per cent. sol.), and again shakes well, adding drop by drop more of the sodium hydroxid solution till the solution in the glass cylinder is nearly clear. Normal salt solution may be added up to the 10 c.c. mark, and this is then injected into the gluteus. This should not be repeated before four or six weeks have elapsed.

The same solution may be injected subcutaneously, usually under one or other shoulder-blade. There is, of course, more risk of an ensuing necrosis when injecting subcutaneously, than when injecting intramuscularly into the gluteus. The gluteus seems to be especially fitted to receive insults.

THE INTRAVENOUS INJECTION OF SALVARSAN

If Ehrlich's ideas in regard to the sterilization of the body are to be carried out, there is no doubt that the intravenous is the only correct method of administering salvarsan, as in neither the subcutaneous nor the intramuscular method is it possible to tell how soon the dose will be absorbed. By the intravenous method the medicine is given in a manner that insures the rapid diffusion of the full dose, without running the risk of ensuing necrosis, or abscesses, or of chronic arsenical poisoning from prolonged absorption. As far as pain is concerned, there is only the insignificant prick of the needle.

1. Corner and Fairbank: Practitioner, 1904, lxxii, 810.

At the kind suggestion of Professor Ehrlich I went to Wiesbaden to see Professor Weintraud, and to Magdeburg to see Dr. Schreiber. The only practical difference between these two is that one employs pressure by gravity, while the other uses a specially constructed syringe. I shall give Dr. Schreiber's method, as it seemed to me to be superior in some rather important details.

THE PREPARATION OF THE SOLUTION FOR INJECTION

About 20 c.c. of warm distilled water are poured into a graduated glass cylinder of a capacity of 250 c.c. This cylinder should have a glass stopper.

The glass capsule containing the salvarsan powder is now wiped off with gauze soaked in alcohol, and then with gauze soaked in ether. After breaking the capsule, the powder is poured on the water in the graduated glass tube, the stopper put in, and the contents well shaken. There is no necessity of using glass balls here, as the quantity of water is ample to dissolve the salvarsan readily.

It is important not to reverse this procedure, for if the powder is poured into the tube first, and the water afterward, a gummy mass forms in the bottom that dissolves with difficulty. This solution should be light yellow, and perfectly clear. That it should be clear is a matter of very great importance, as it is highly necessary that no undissolved particles be present.

Now we have an acid solution in sterilized water of the contents of one tube, the quantity of which is usually 0.5 or 0.6 gm. If it is 0.5, the graduated tube should be filled up with water to the 50 c.c. mark; if 0.6, to the 60 c.c. mark, so that each 10 c.c. will represent 0.1 of the drug.

Dr. Schreiber usually gives 0.3 gm. of salvarsan to a woman, and 0.4 gm. to a man. If it is desired to give 0.4 he pours 40 c.c. of the acid solution into another graduate furnished with a glass stopper, and fills up to the 200 c.c. mark with warm sterilized water, and to this adds about 20 c.c. of normal sodium hydroxid solution. Normal sodium hydroxid solution is a 4 per cent. solution of sodium hydroxid in water. This should be added a little at a time, and each time a little is added the glass stopper should be put in, and the cylinder well shaken. At first a precipitate forms, that gradually disappears on the addition of more caustic soda solution. When the solution is again clear, it is alkaline and ready for injection.

The flask containing the sterilized distilled water for use in making the solutions should not be stoppered with cotton, but with gauze, as cotton fibers, falling into the fluid, might cause trouble.

SYRINGE FOR INJECTING

The best syringe for injecting is a glass Lier of about 20 c.c. capacity. It should not have a metal plunger, as in that case the least blood may cause binding. A two-way cock is introduced between the needle and the barrel.

Dr. Schreiber has a special needle made with a bayonet bend in the shaft, and on this bend a ribbed finger-hold. The bayonet bend is to allow the needle to be more easily shoved along in the lumen of the vein. A rubber tube is fitted to the lateral outlet of the two-way cock.

INTRODUCTION OF THE NEEDLE

The arm is now laid out on a cushion, so as to lie flat and easy; a stout rubber tube is thrown around the middle of the upper arm and drawn tight enough to stop the flow of blood in the superficial veins, but not so tight as to impede the arterial supply, and fastened with artery forceps or a wooden clip. It is very necessary that the arm should lie easy and still. The seat of operation should be wiped off with gauze soaked in alcohol.

About 4 c.c. of normal salt solution are drawn into the syringe, so that by running the plunger forward the air may be expelled from the needle and from the rubber tube attached to the outlets of the two-way cock.

Now the needle is inserted through the skin over a vein, and run along into the vein. When the needle enters the vein a little blood flows back into the normal salt solution in the syringe. If the plunger is pressed forward, the salt solution entering the vein will distend it a little, and when it does so, the tourniquet band about the arm may be removed, and the vein will collapse.

The insertion of the needle is a very important step in the operation. For instance, by blood flowing back into the syringe, it is known that the needle has entered the vein. Weintraud insists that the blood should flow freely from the needle, but in his method the needle is first inserted into the vein, and afterward the rubber tube conveying the salvarsan solution from the funnel-like cylinder, is attached to it.

The syringe, still containing a little salt solution, and with its needle lying in the vein, is now ready for injecting the fluid, which is held in a glass beaker so that the rubber tube attached to the lateral opening of the two-way tap drops into it. The instrument is free of air so that there is no fear of air embolus. By turning the cock of the two-way tap, the salvarsan solution may be alternately sucked up into the syringe, and forced into the vein. When the salvarsan solution is almost exhausted, a little normal salt solution is thrown into the beaker, and also injected into the vein. This is to clear away any of the salvarsan solution that would otherwise trickle out into the tissues, on withdrawing the needle.

A very important matter in this part of the operation is the injection of the small quantity of normal salt solution, both before and after injecting the salvarsan. By injecting the normal salt solution at first, one makes sure that the needle is in the vein, for if it is not in the vein, the injected fluid makes a little infiltration in the subcutaneous tissue, while if it is in its proper position, the already distended vein grows a little larger. If this sign should fail, there is still a symptom showing that the needle is not in place, for as soon as a little of the salvarsan enters the subcutaneous tissue the patient will experience a burning pain, in which case the needle should be immediately withdrawn, and free bleeding induced from the punctured wound. Another vein should then be chosen for the injection. Any subcutaneous vein that can be distended may be chosen, and in fleshy women Dr. Schreiber has even injected into one at the wrist. Sometimes when the vein cannot be seen, it may be felt.

The fluid should be injected slowly, say in five or six minutes, so as to avoid sudden overloading of the circulatory system.

Although the description of the operation is long, tedious, and complicated, yet the performance is very simple, and the patients experience very little inconvenience. They should remain twenty-four hours in bed.

When I was in Magdeburg Dr. Schreiber had given intravenously one dose of salvarsan to each of 155 patients; he had given two doses to each of 622 patients; and intramuscularly he had given one dose to each of 83 patients; making a total of 860 patients treated. Up to that time, he told me, he had had no serious trouble consequent on the use of the drug, and this statement, from what I have seen of his clinic and his personality, I fully believe. That trouble may follow the use of this remedy goes without saying; we are dealing with arsenic.

Whichever method is adopted, all instruments should be carefully sterilized as the irritant metal and germs make a highly septic combination. Salvarsan is probably no more antiseptic than Fowler's solution, in which, as is well known, fungi will grow freely.

In making the solution, glass stoppers should be used for the cylinders, as cork stoppers in contact with sodium hydroxid solution make a brown fluid, which at least looks dirty.

If it is desired to neutralize the fluid for injection after it is alkalized with sodium hydrate solution, this is best done by adding, drop by drop, a 1 per cent.

glacial acetic acid solution. The neutral point may be determined by letting a drop of the fluid fall from the tip of a glass rod on litmus paper.

If the more concentrated solution for intramuscular injection is desired, and glass balls are not obtainable, the powder may be rubbed up with water in a mortar. The glass balls, however, are preferable.

THE TREATMENT OF DRUG ADDICTION

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NEW YORK

The statements which I made in my former article¹ concerning the efficacy of the treatment to obliterate the craving for narcotics have been confirmed, and this treatment is to-day the most successful method which I have yet found for the obliteration of the craving for morphin, opium, cocain, alcohol, or tobacco. I have endeavored to simplify the method, and have succeeded in some measure; the same combination of drugs is used, and only the details of their administration have been changed. The plan which I have found to be most effective, and most easily followed by others, is as follows:

The belladonna mixture of two parts 15 per cent. tincture of belladonna, and one part each of the fluid extracts of hyoscyamus and xanthoxylum, has proved itself an essential part of the treatment. When the 10 per cent. tincture of belladonna has been used, or when even a 12 per cent. tincture has been employed, the results obtained were not clear-cut, but left the patients with an indefinite nagging longing for their narcotic. It seems necessary to push this mixture to the physiologic tolerance of the belladonna. This tolerance, of course, varies with the individual, and some of the best results have been obtained with patients who could not tolerate as an hourly dose more than from 2 to 4 drops of this mixture while others easily tolerated from 18 to 20. It would seem, judging from clinical results, that there are some properties in this mixture which are necessary to a successful carrying out of the treatment. The bottle containing this mixture must be kept well corked, and shaken before using. The method which I now pursue is as follows:

A patient addicted to morphin is given five compound cathartic pills and 5 grains of blue mass, and six hours later, if these have not acted, they are followed by a saline; after three or four abundant movements of the bowels from these cathartics, the patient is given, in three divided doses at half-hour intervals, two-thirds of the total daily twenty-four-hour dose of morphin or opium to which he has been accustomed. Observe carefully after the second dose has been given, as the amount then equals four-ninths or nearly one-half the total twenty-four-hour dose. Some few patients cannot comfortably take more than this amount. At the same time with the morphin, 6 drops of the belladonna mixture is given in capsules. This belladonna mixture in doses of 6 drops (and by drops I do not mean minims, I mean drops dropped from an ordinary medicine dropper, which is about half a minim dose) is given every hour for six hours. At the end of six hours the dosage is increased 2 drops. The belladonna mixture is continued every hour of the day and every hour of the night continuously

throughout the treatment, increasing 2 drops every six hours until 16 drops are taken, when it is continued at this dosage; it is diminished or discontinued at any time if the patient shows belladonna symptoms such as dilated pupils, dry throat or redness of the skin, or the peculiar and incisive and insistent voice, and insistence on one or two ideas. It is begun again at reduced dosage after the above symptoms have subsided.

At the tenth hour after the initial dose of morphin is given, the patient is again given five compound cathartic pills, and 5 grains of blue mass. These should act in six or eight hours after they have been taken. If they do not act at this time some vigorous saline is given, and when they have acted thoroughly the second dose of morphin is given, which is usually about the eighteenth hour. This should be one-half the original dose; i. e., one-third of the original twenty-four-hour daily dose. The belladonna mixture is still continued, and ten hours after the second dose of morphin has been given, that is about the twenty-eighth hour, five compound cathartic pills are again given and 5 grains of blue mass, these again if necessary followed by a saline seven or eight hours later. At times when the C. C. pills are not acting well, or too slowly, five or six "B. B." pills are given from two to three hours after the C. C. pills. These "B. B." pills are the pilulæ catharticæ vegetabiles of the Pharmacopeia with 1/10 gr. oleoresin of capicum, 1/2 gr. ginger, and 1/25 m. of croton oil added to each pill. After these have thoroughly acted at about the thirty-sixth hour, the third dose of morphin is given, which is one-sixth of the original dose. This is usually the last dose of morphin that is necessary. Again, ten hours after this third dose of morphin, i. e., the forty-sixth hour, the five C. C. pills and 5 grains of blue mass are again given, followed seven or eight hours afterward by a saline, and one expects at this time to see the bilious green stool appear. When this appears, after the bowels have moved thoroughly, ten or twelve hours after the third dose of morphin, about the fifty-sixth hour, 2 ounces of castor oil are given to clear out thoroughly the intestinal tract. During this last period when the bowels are moving from the C. C. pills and before the oil is given, the patients have their most uncomfortable time. Their nervousness and discomfort can be controlled usually by codein, which can be given hypodermically in 5 grain doses and repeated if necessary, or some form of the valerianates may help them. About the thirtieth hour these patients should be stimulated with strychnin or digitalis, or both. After they are off their drug. I have found that the tonics which do them the most good are those which contain some form of phosphorus and arsenic, and I must reiterate as before the danger of these patients overeating, and thus bringing back all their withdrawal symptoms due to the disturbance of digestion. They have been in the habit of referring all uncomfortable feelings to those of the withdrawal symptoms of morphin, and digestive disturbances feign these withdrawal symptoms. Sometimes about the thirty-sixth hour the stools became clay-colored. Some form of prepared ox-gall is most effective to stimulate further biliary secretion given in small doses every hour for five or six doses.

In treating an alcoholic, the belladonna mixture and the five C. C. pills and 5 grains of blue mass are given simultaneously at the first dose. The belladonna mixture is continued every hour of the day and every hour of the night the same as with the morphin patients, and twelve hours after the initial dose patients are again

1. The Obliteration of the Craving for Narcotics, THE JOURNAL A. M. A., Sept. 25, 1909.

given from three to five C. C. pills, and at the twenty-fourth hour after the initial dose, they are again given the cathartics followed by salines if necessary, and again at the thirty-sixth hour. After these last cathartics, the bilious stools will appear, and by the forty-fourth or forty-fifth hour the castor oil is given. Sometimes it is necessary to carry on the treatment over another period, and the C. C. pills and blue mass are again given at the forty-eighth hour, which would bring the end of the treatment about the sixtieth hour.

Elderly or very nervous patients who have been on a prolonged debauch are tapered off with 2 ounces of whiskey for four or five doses through the first twenty-four hours. If these patients are excessively nervous it is necessary also to see that they sleep, and the mixture of chloral hydrate, gr. xx, morphin, gr. $\frac{1}{8}$ tincture of hyoseyamus dram $\frac{1}{2}$, ginger m. x and capsicum m. v, water $\frac{1}{2}$ ounce, which was recommended before is the best hypnotic for them. These patients should also have cardiac stimulants such as strychnin and digitalis after the first twenty-four hours, sooner if they are weak. If the patient has an alcoholic gastritis and cannot retain medicine, it is wise to give him 5 grains of Tully's powder (pulvis morphinae compositus) with 5 grains of sodium bicarbonate about every two hours for two or three doses, as this seems to be the most effective method of allaying the vomiting of an alcoholic gastritis.

The cocainist can be treated like the alcoholic, except that no cocain is given at any time, and strychnin or some such stimulant must be given from the beginning of the treatment.

I have often been asked as to the permanency of this treatment, and I can but repeat that most morphinists desire to be rid of their addiction and that when once the withdrawal symptoms are passed and the craving for the drug has ceased, they are only too glad to be free from their slavery. If the cause for which they originally took the opiate is removed, in the majority of cases they will not return to their drug. With the alcoholic it is different, although this treatment is the best one I have yet found to eradicate thoroughly and in a short time all desire for alcohol and to stimulate him mentally and leave him in a condition in which he can exist without his customary stimulant. Alcoholism is a social vice and not a secret one, as is morphinism. Most men cannot bring themselves to realize that they cannot take a single drink and cannot drink in moderation as they see other men do, and it sometimes takes two or three bitter lessons before they are willing to acknowledge this to themselves. When once they realize it and acknowledge it to themselves as well as to others, they will not take alcohol, but there is no compromise with them. They cannot take a single drink of any form of alcohol without the danger of going back to alcoholic excess.

Since publishing my first article I have treated many patients addicted to morphin, cocain and alcohol, and the results obtained with these patients, as well as the reports from many sources obtained through an enormous correspondence, have confirmed me in my conviction that this treatment will more effectually obliterate the craving for narcotics, in the shortest time and leave the patient in better condition to recuperate to vigorous health, than any other treatment that has yet come to my knowledge. It is a treatment of many details which must be adhered to if success is to follow. But my experience justifies me in saying that if these details are adhered to, success will follow.

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A GROUP OF SYPHILITIC PATIENTS TREATED WITH SALVARSAN (EHRlich-HATA 606)

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This group of cases includes chiefly those of dermatologic interest. At the time the work was done, the method of administration as recommended by most experimenters was by subcutaneous injection of an emulsion of the drug according to the Wechsellmann method. After the first group of injections had been made subcutaneously in emulsion by this method, Dr. Flexner requested that the intramuscular method be employed, using a solution according to the method of Lesser. The second injection given in Case 7 and the one given in Case 8 were therefore made in this manner.

The cases included a well-defined macular, a papulopustular, a corymbose, a large flat papular, a deep gummatous (bones and deeper tissues) and an ordinary gummatous syphiloderm, and two in which early nervous lesions were exhibited. The patients were all examined for any contra-indications relative to heart, lungs, kidneys, etc., by Dr. Joseph L. Miller, and as to eye complications by Dr. E. V. L. Brown. This work was controlled by the Wassermann reaction repeatedly made, and by blood-counts; and finally was undertaken with the view of ascertaining the result obtainable with a single injection of a comparatively large dose of the drug. They have been under observation for more than three months, so we can now determine what the result is with a single dose in these cases. I am indebted to Dr. H. J. Nichols and Dr. Simon Flexner for the material (drug) used, and to Dr. J. Frank Waugh for valuable assistance in the preparation of the remedy and making the Wassermann reactions, and Dr. Nilsson, House Surgeon at the County Hospital, for assistance in many ways.

In view of the enormous literature already at hand, it is my purpose only to record results, as it is by the accumulated results in patients actually treated in many parts of the world, that deductions will finally be drawn both as respects the drug itself and its method of administration.

Most of these patients were treated at the County Hospital, where they were entered in my service, and most of them remained two months or more to complete the preliminary observations.

REPORTS OF CASES

CASE 1.—Gummatous and ulcerative syphilis (hereditary). M. W., a woman aged 23, entered the Cook County Hospital Oct. 18, 1910; duration of the disease in its present form, twelve years.

History.—The patient was apparently healthy until twelve years previously, when (as stated by the patient) following vaccination the lesions to be described began to appear. During the twelve years the lesions had periods of activity and retrogression. Ulcers appeared and healed, with new ones occurring. The distribution was fairly general. Head, face, arms and limbs had all been attacked and the deformity was marked and characteristic. The bones in all of these regions showed deformity.

Examination.—At the time of administration of salvarsan the patient presented the following appearance: Small, elderly-appearing, with scars, ulcers, deep nodules and discharging sinuses over most of the body; mentality below par.

Regional:

Head: The entire scalp presented a mass of deep ulcers, pus-discharging sinuses and heavy crusts. In many places bone involvement was evident. The face presented deep fun-

nel-shaped openings, extending on the right side into the malar bone; a similar lesion present on the left side; marked ectropion of right lower eyelid due to contracture from a scar below. Eyes: Pupils small, but reacted normal; negative otherwise. Mouth: Palatal arch high and narrow. Teeth: Several missing, remainder more or less loose and carious. Nose flat and depressed; nasal septum eroded. Neck: Enlarged glands on either side.

Trunk and Genitals: No cutaneous or deeper lesions.

Upper Limbs: Bones of both forearms deformed; irregular deep depressions present, many scars and ulcerated areas, and some deep sinuses; joints enlarged, deformed and limited in motion; small joints of hands also involved; glands of axillæ enlarged.

Lower Limbs: Tibiæ deformed. Typical deformity of bones (enlarged and bowed); large ulcers and deep sinuses on both sides; a typical luetic ulcer present in right ankle the size of one's palm.

Urine: Cloudy, straw-colored, specific gravity 1.021, acid in reaction; albumin present abundantly; no sugar; microscopic examination revealed granular casts, a few epithelial cells and a few leukocytes; no erythrocytes; mucus moderately present. Wassermann, October 19, +++.

October 20, 0.45 gm. salvarsan was injected beneath scapulæ, dividing the dose into two parts, one-half given on either side.

General examination revealed no particular contra-indications. The patient had been habitually restless and sleepless at night.

Progress and Comments.—The urinary findings under some conditions would have been a contra-indication for the treatment, but in view of the probable luetic kidney involvement, it was not so considered in this case. The progress toward recovery following this injection was remarkable. No local reaction of moment occurred. There was a very moderate systemic reaction. After the first night the patient slept well and rapidly gained in weight. Her mental condition changed from that of a dull, morose individual to a happy, smiling and much younger-appearing woman. Pain entirely ceased; ulcers and sinuses healed and clinically the patient recovered rapidly. The Wassermann reaction remained strongly positive throughout the entire period of observation. Three months after the injection the patient had not entirely recovered, for a few small lesions remained. At this time more treatment was indicated. The Wassermann record is as follows:

October 19, just previous to the administration of the drug, it was strongly positive, +++. October 24, strongly positive, +++; November 12, strongly positive, +++; December 6, strongly positive, +++; December 20, strongly positive, +++; Jan. 20, 1911, strongly positive, +++.

CASE 2.—*History.*—Varioliform, papulo-pustular syphiloderm. The patient, L. S., a man aged 28, entered the Cook County Hospital, Aug. 23, 1910. The eruption was generalized and typical. The remains of the initial lesion were present. There was general adenopathy. From the date of admission until the administration of the special treatment, hygienic care was exercised. During this time, about two months, the lesions changed their type, becoming entirely papular, but fully as abundant in number as originally. The urinary examination revealed no abnormalities.

Treatment.—October 20, ophthalmologic and general examinations revealed no contra-indications for the treatment. The Wassermann reaction was strongly positive, +++. A dose of 0.5 gm. salvarsan was injected, using the technic as outlined above. This patient suffered sufficient pain to warrant an injection of morphin, gr. $\frac{1}{4}$, at 9 p. m., five hours after the administration of the salvarsan. Subsequent to this nothing unusual occurred. No indurations remained at the seat of the injection.

Progress and Comments.—After forty-eight hours the lesions were clearing more rapidly than before. Resolution continued for about two weeks, when a recrudescence occurred and during the following three months new lesions kept constantly appearing. The entire number naturally decreased, but the disease was still clinically active. The Wassermann record is as follows: October 24, positive, ++; November 12, posi-

tive, ++; December 20, strongly positive, +++. It is needless to state that more treatment is necessary.

CASE 3.—*History.*—Papular syphiloderm. The patient, H. S., man aged 42, entered the County Hospital Sept. 24, 1910. The patient had a fairly generalized, ordinary flat papular syphiloderm, accompanied by general adenopathy.

Examination and Treatment.—October 24, the day of injection with salvarsan, the general examination revealed pulmonary emphysema, but no other complications. The eye-findings were negative. The urinary-findings were negative. The blood-findings showed moderate leukocytosis, 14,050 W. B. C. The Wassermann reaction was positive, +++. Salvarsan, 0.5 gm., was administered. The immediate and later results were not striking. The cutaneous lesions cleared for about two weeks, but recrudescence kept up for the following two months. The Wassermann record is as follows: October 24, strongly positive, +++; November 12, strongly positive, +++.

November 22, the date of departure from the hospital, the disease was still active, though much less so than at the beginning, and more treatment was strongly indicated.

CASE 4.—*History.*—Corymbose syphiloderm. The patient, a man aged 35, was admitted to the County Hospital, Sept. 21, 1910. The duration of the eruption at that time was two months; there was a clear history of an initial lesion, and general adenopathy was present. The lesions were generally distributed and typical.

Examination and Treatment.—October 21 a general examination revealed an enlarged liver, but no other findings. The eye-findings were negative; urinary analysis, negative; Wassermann, +++. October 29, 0.5 gm. of salvarsan was administered.

Progress and Comments.—The lesions began to disappear fairly rapidly, but within two weeks new ones occurred, so that the new ones about kept pace with the clearing lesions. New lesions were still appearing, three months after treatment. The Wassermann record is as follows: October 29, strongly positive, +++; November 12, strongly positive, +++; December 6, mildly positive, +; December 20, positive, ++; Jan. 20, 1911, mildly positive, +.

That more treatment must be given is evident.

CASE 5.—*History.*—Macular syphilid, ordinary type. The patient, a man aged 23, entered the County Hospital, Sept. 29, 1910. The initial lesion occurred seven weeks previously. A fairly general exanthem, macular type, was present, chiefly on the trunk. General adenopathy was present. This was a typical and ordinary case.

Examination and Treatment.—Just before the administration of the special treatment the urine was found to be normal. The general examination and ophthalmologic examination were both negative as to pathologic findings. October 22, 0.5 gm. salvarsan was administered at 4:30 p. m. At 10 p. m. morphin, $\frac{1}{4}$ gr., was administered. No local or systemic reaction of moment occurred.

Progress and Comments.—This patient remained in the hospital for three weeks after the treatment. During this period no perceptible change occurred. The exanthem was gradually fading. The Wassermann reaction just previous to the injection was strongly positive, +++. After three weeks, before leaving, it was strongly positive, +++. This patient agreed to return, but failed to do so.

CASE 6.—*History.*—Gummatous and ulcerative syphilis. The patient, M. H., a married woman aged 32, entered the County Hospital, Oct. 16, 1910. Three days previously 0.5 gm. of salvarsan had been administered at the clinic in Rush Medical College. The general examination and special examinations had been made there, including a Wassermann reaction, which was positive. This patient was generally weak, had lost weight, was anemic and had two typical deep areas of gummatous-ulcerative lesions, one on the forehead involving the frontal bone, and one over the left shoulder.

Progress and Comments.—The nutrition immediately improved. The lesions healed rapidly until the forehead lesion cleared up. The one over the shoulder healed more slowly. The Wassermann reaction remained positive until her departure, five weeks after admittance. In this patient the cutane-

ous and subcutaneous lesions yielded, but not any more rapidly than they do under ordinary treatment. The nutritive effect was perhaps more marked, but even that is open to question.

CASE 7.—History.—Cerebral syphilis and incipient tabes. The patient, a man aged 37 (private patient), was first seen Jan. 12, 1910. The initial lesion occurred in March, 1901, followed by a macular eruption of short duration. During the first year the treatment consisted in the protoiodid of mercury eight weeks at a time, followed by eight weeks of rest during the entire year. In the second year three courses, of four or five weeks' duration each, of the succinimid of mercury, were employed by intramuscular injection. In the third year mixed treatment, including some injections, some potassium iodid, and Bernheim pills, was employed. From then until 1909 a moderate amount of mixed treatment was employed each year. During the second year after infection an incomplete attack of hemiplegia occurred. This involved the left side of the body, but rapidly cleared up. In 1905 a deep ulcer occurred in the tonsillar region, following the removal of this organ for a cervical adenitis. This ulcer healed under mixed treatment. Then for four years no symptoms occurred. In October, 1909, paresis of the external rectus muscle occurred. Energetic treatment with injections and potassium iodid made no change in this condition for some time. January 12, when I saw the patient, the above paresis was still present and there were some scorching, intermittent pains in the skin over the left breast. On this date, the findings led to the conclusion that the patient was suffering with cerebral lues, with probably incipient tabes. A Wassermann test at this date was negative (probably influenced by treatment). February 24, pains were noted in both sciatic nerves, also aching pains in both calves; slight unsteadiness in gait, numbness of left ring and little fingers, left cheek and left side of the roof of the mouth; patellar reflexes abolished.

April 24, treatment was suspended on account of saturation. May 9, oculo-motor paresis of the right eye shown by ptosis, dilated pupil and paresis of accommodation of 1 diopter. By May 31 this condition had largely cleared up. June 11 a similar condition arose in the left eye. Treatment during 1910 up to October consisted in injections of salicylate of mercury, potassium iodid and ferruginous tonics. October 28, 0.5 gm. of salvarsan was injected subcutaneously in emulsion.

Examination.—The condition on this date was as follows: Slight Romberg, unsteady gait, patellar reflexes abolished, bladder weak, obstinate constipation, girdle sensation, numbness of soles of feet, left side of face and left hand, intermittent scorching pains in the back; single vision looking straight ahead, but paresis shown by looking to either side, up or down; paresis of both eyes, 1 diopter. Wassermann, positive, ++++. Urine, negative.

Progress and Comments.—Following the first injection of salvarsan, great improvement in the general health occurred. The patient gained several pounds in weight in a few weeks; pains all cleared up, gait became steadier, Romberg less marked and bladder stronger; focal symptoms, however, were unchanged. December 15, eye symptoms became exaggerated, and on December 21 a second injection of 0.6 gm. of salvarsan was given in solution into the gluteal muscles, according to the method of Lesser. The Wassermann reaction was still positive. January 27 all symptoms were improving slowly; the Wassermann reaction slightly positive, +.

That the treatment did much for this patient there is no doubt. Much longer observation is necessary to determine the necessary procedure.

CASE 8.—Spinal meningitis (luetie) and tabes. The record of this case is incomplete, but it is included here on account of the fact that of the group this was the only patient who had a systemic reaction.

A general examination of the patient was made before the treatment, and the eyes were examined at the Presbyterian Hospital. December 28 0.5 gm. of salvarsan was injected intramuscularly according to the method of Lesser. On the second day the temperature rose to 103 F., and on the third day to 103.5, and after the fourth day rapidly subsided and the patient left the hospital.

Progress and Comments.—This case is interesting owing to the systemic reaction indicated by the marked elevation of the temperature. There was no nausea; the patient was not particularly ill and apparently recovered rapidly from the attack. His physician reported thirty days after the treatment that the patient was much improved. It was impossible to get another specimen for a Wassermann reaction. This reaction was moderately positive before the original injection.

As will be seen by a study of the above case-reports, marked effect is produced on the disease by this remedy, the most striking in this series being in the case with deep gummatous and ulcerative lesions involving bones and deep structures. The relief of pain, the great increase in the general nutrition of the patient, and the rapid healing of the lesions were striking.

In none of the cases did any untoward results occur. In one only was there any local reaction of any moment and that consisted in an induration which still remains. In three cases an injection of morphin for pain was administered the first night. In none of the others was the pain sufficient to require any sedative. In one case marked elevation of temperature occurred on the second and third days (Case 8). In all of the cases of early syphilis the disease was well advanced and well marked, showing a complete saturation of the patient with the infection. In judging the value of the treatment this fact must be borne in mind.

METHOD OF ADMINISTRATION

The major portion of these patients were injected with the emulsion according to the Wechselmann method. In the last two the solution was injected intramuscularly, according to the method of Lesser. Still later, the instructions were to use the intravenous method. This method does not figure in this experimental report. The latter method is proving more rapidly efficient, but necessarily is attended with more danger, especially as regards general use.

The treatment in the early cases of this group was controlled in a way by other similar cases treated with injections of mercury, and the latter cases apparently made as good progress as those treated with salvarsan and finally better. This, however, does not demonstrate anything essential, except the fact that one injection by emulsion is not sufficient. Had the injections been repeated at intervals of a few days or weeks, as indications demanded, a much different result may have been obtained; and again, the manner of administration may have been less efficient than those now being employed. This group, therefore, seems to demonstrate the inability of a single injection, as here administered, to eradicate the disease.

CONCLUSIONS

This group of cases emphasizes facts demonstrated in the work of a large number of others on record which, summarized, are as follows:

1. Recurrences and recrudescences commonly happen after a single injection, which indicates repeated injections or resort to older methods to complete the eradication of the disease.

2. A marked and profound effect is immediately produced, which makes one indication clear for its use, viz., a rapidly spreading or malignant case in which ulceration threatens vital or useful structures, and an immediate result is imperative.

3. The effect in promoting increased nutrition is marked, especially in cachectic patients, thus placing the patient in a better physical condition normally to combat the invading organisms.

A study of these with other cases demonstrates the facts that salvarsan is a therapeutic agent of great potency; and that it is a valuable addition to our weapons of defense against certain forms of syphilis. The range of these is as yet undetermined. No one can admit that it can, in the present state of our knowledge, replace to any large degree our other well-known and very efficient agents in the treatment of syphilis.

The consensus of opinion now seems to be that it has its greatest usefulness in malignant cases, viz., those in which rapid destruction of tissue is in progress; in mucous membrane lesions about the mouth, tongue, throat, etc.; in the deeper lesions affecting subcutaneous and bony structures, in these the healing of the lesions, the relief of pain, and the promotion of nutrition being remarkable; and finally, in cases (which are fortunately few) which have resisted other well-known measures. Cases in which opinions differ and in which only time will demonstrate the value of salvarsan are the very early cases in which a profound effect on the spirochetes may entirely destroy them before the human organism has become thoroughly saturated, and also the ordinary cases which have in the past been well managed to a successful termination by the usual treatment.

Finally, the greatest credit is due Professor Ehrlich for the production of a chemical remedial agent worked out on scientific principles, and even though it may not ultimately fulfil the unparalleled expectations, it opens a field for research in treatment of parasitic affections that should be of great importance to humanity.

100 State Street.

A SIMPLE SUPPORT FOR THIGH ELASTIC STOCKINGS

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We are sometimes compelled to fit patients with thigh elastic stockings. Several of my patients have complained that they rolled down at the top and became unbearable. The tension produced by fastening the garters to the stockings is so great as to preclude that method of support. I devised this simple method of obviating their trouble. Four or five ordinary dress stays are sewed at varying intervals around the top of the stocking in the longitudinal diameter. It will be found that this ends the trouble. I would, however, suggest that the manufacturers weave small whalebone stays in the stocking in the same manner; this would make a more durable and attractive article.

A CASE OF NEPHROLITHIASIS

WITH REPEATED TEMPORARY RELIEF BY URETERAL CATHETERIZATION

W. P. WILLARD, M.D.
SAN FRANCISCO

The history of this case of nephrolithiasis is, I think, of sufficient interest to be reported.

History.—Mrs. R., aged 41, had been in good health until the birth of her child eighteen years before she came under my observation. At that time she had pneumonia from which she recovered after an illness of two months. Six years later she had ovarian and tubal trouble that necessitated the removal of both tubes and ovaries. Since this operation the patient

had never been in very good health. Five years prior to being seen by me the first urinary symptoms appeared, which consisted of painful and frequent miction, and the passage at times of gravel. These symptoms persisted for several weeks and then abated, although the urine continued to be cloudy. Three years later the patient noticed a large, painful swelling in the left side of the abdomen which suddenly disappeared after being present two weeks. At this time a dull pain in the back appeared, and has continued. In January, 1909, she had a severe pain in the right side of the abdomen and back accompanied by a large swelling which disappeared in about ten days.

Examination.—I saw the patient for the first time seven months later and found her suffering greatly with a large, boggy mass extending from the costal border to the brim of the pelvis on the left side. She had a rapid pulse, of high tension, was vomiting and very much prostrated. She had passed no urine for two days and a half, and on introducing a catheter I found the bladder empty. As she was in a very bad condition I advised trying to relieve the condition temporarily by introducing a ureteral catheter.

Treatment.—Some difficulty was experienced in finding the ureteral orifices on account of a chronic cystitis and lack of motion of the openings. On passing a catheter 8 inches into the left ureter an obstruction was encountered. After injecting oil and glycerin with no result, I injected boracic acid solution through a large ureteral catheter, under considerable pressure, and was able to push the catheter to the renal pelvis. The urine spurted from the catheter and within a minute urine could be seen coming from the right ureter. In the first ten hours 1,200 c.c. of urine were passed. The catheter was allowed to remain in the ureter forty-eight hours, and on its removal a mass of mucus and phosphatic sand was passed. After this the patient felt well for six months; then she had a similar attack, which I relieved in the same way. On withdrawing the catheter a calculus 0.5 cm. in diameter was passed. The x-ray plates which were made at this time show several calculi in both renal pelves. Operation was positively refused.

Subsequent History.—In March, 1910, the patient again had anuria for thirty-six hours, severe pain on the left side, nausea and vomiting. The obstruction at this time seemed to be at the pelvis; probably one of the stones had engaged in the ureter, blocking the opening. The passage of the catheter had pushed it out of the way and allowed the pelvis to empty. Nothing passed after the removal of the catheter. June 1 the patient again had the same symptoms but was relieved by hot baths and applications. June 29 I was called, after she had tried for twenty-four hours to get relief. Her condition was about the same as described in the first attack, and was relieved in the same way. The obstruction was 10 inches from the bladder. After the catheter had been removed, at the end of twenty-four hours, a calculus 8 by 5 mm. was passed. Between the attacks the urine was full of pus, but the patient was not troubled in any way, except for a dull backache and at times a light night-sweat.

Although this procedure can hardly be recommended for the treatment of nephrolithiasis, still, as a palliative measure in cases in which the condition of the patient makes immediate operation hazardous, and also when small calculi are lodged in the ureter, it is worth trying.

177 Post Street.

Fatigue as a Symptom.—Chronic fatigue is the most obvious symptom in neurasthenia minor. It is true fatigue rather than simple weakness, as is shown by the facts that action is readily excited, but takes an abnormally long time to reach its maximum; that effort cannot be sustained evenly, but shows marked oscillations, and that there is slight incoordination. It is presumably due to the continual production of fatigue toxins. It affects both the mental powers and the physical, probably including the functioning of the viscera. . . . P. C. C. Smith in the *Practitioner*.

Therapeutics

DRUGS ACTING ON THE CIRCULATION

DIGITALIS

(Continued from page 423)

Therapy.—The conditions improved by this drug are:

1. Poor heart action from any cause except when there is advanced myocarditis, or fatty degeneration.
2. Lack of compensation in valvular disease.
3. Simple dilatation.
4. The irritable or weak heart of nicotin poisoning.
5. The strained heart from over-work or over-athletic exercise, severe marching, mountain climbing, etc.
6. Poor vasomotor tone.
7. Edema or exudations with no serious kidney lesions.

Before discussing the use of digitalis in lack of compensation in valvular disease, it will be well to consider just what is meant by lack of compensation, as this drug should not be used in valvular disease when there is full and complete compensation. Broken or failing compensation means a rapid heart, dyspnea, edema, and passive congestions of the various organs and glands of the body causing disturbed digestion, diminished nutrition, and the retention in the blood of various toxins, the results of mal-metabolism.

This drug does good in *mitral regurgitation* with broken compensation by making the ventricular contraction more complete by directly stimulating the cardiac muscle and increasing its thickness and tone as would result from systematic exercise of any voluntary muscle.

The blood-pressure in the aorta will be increased by the better action of the left ventricle and more blood is thus forced through the coronary arteries, and the nutrition of the heart is improved. Also, the greater contraction of the papillary muscles and the muscle-tissue around the mitral valve makes the opening, due to its incomplete closure, smaller, and less regurgitation takes place.

In *mitral stenosis* with failing compensation digitalis does good not only by strengthening the auricles and the right ventricle which is weakened, but by slowing the heart allows the left auricle to empty itself more completely through the narrowed mitral opening into the left ventricle. In this lesion, with the patient in bed, the heart can be slowed down to about sixty beats a minute with marked advantage. We would here caution that with profound action of digitalis the patient should never rise suddenly from the bed or from a chair, or suddenly rise from bed and evacuate the bladder, as during profound action of digitalis with the heart very slow, such sudden rising and diminution of the abdominal pressure has produced such anemia of the base of the brain as to cause sudden death.

In aortic insufficiency with broken compensation digitalis relieves the symptoms by strengthening the left ventricle, narrowing the aortic orifice, and increasing the lost tone in the aorta and peripheral vessels. Digitalis should not be pushed in this lesion as a prolonged diastole from much slowing of the heart would be of great disadvantage, and a pulse above eighty in this lesion is better than a slower pulse.

Some clinicians believe that digitalis should never be used in aortic insufficiency. However, if not used to profound effect it will often do a great deal of good when compensation has been broken in this condition.

The main strain on the heart in this lesion is in the left ventricle, and the left ventricle is the part of the heart most helped by digitalis. Increased blood-pressure is not desirable in aortic insufficiency, and but slight increase in blood-pressure will occur if the digitalis is administered in small doses, though the heart muscle will be stimulated to better contraction. It is dangerous to slow a heart with aortic insufficiency below seventy, and it certainly is dangerous to slow it to sixty, as the prolonged diastole not only prevents more blood being sent upward through the carotids and cerebral arteries, but also, during diastole blood is flowing backward from the aorta into the left ventricle. At the same time, the blood is flowing toward the right auricle through the superior vena cava and therefore also from the jugular veins. The result of a prolonged diastole is anemia of the base of the brain, and this is one of the causes of sudden death in aortic regurgitation. Another danger of prolonged diastole in this lesion is of an over-filling of the left ventricle with regurgitated blood and a consequent paralysis. If serious dropsy occurs from aortic insufficiency the condition is much more serious than in mitral disease, and the prognosis is bad.

When there is lack of compensation in *aortic stenosis* digitalis will improve the condition by strengthening the left ventricle, thus overcoming the resistance at the aortic orifice. However, this drug should not be pushed in this condition, as a too sturdy action of the left ventricle against the resistance will weaken the muscle wall. In this lesion this drug often acts best when administered conjointly with nitroglycerin to keep down the peripheral resistance.

It is understood, of course, that nitroglycerin administered at the time the digitalis is administered is of no avail in counteracting any action on the blood-vessels of that particular dose of digitalis, but if digitalis is administered twice in twenty-four hours and nitroglycerin four times or more in twenty-four hours, more or less continuance of lowered blood-pressure will occur. It may be stated here that although in the laboratory the effect of lowering of the blood-pressure of a single dose of nitroglycerin lasts but a short time, clinically it is a positive fact repeatedly noted that in conditions of high blood-pressure when nitroglycerin in proper dose is administered, even not more than four times in twenty-four hours, the average blood-pressure is continually lower than without this drug.

The satisfactory action of digitalis when compensation is weakened in valvular disease may be many times repeated, but sooner or later in valvular lesions with recurring incompetency the cardiac muscle becomes so deteriorated that digitalis no longer is able to restore the hypertrophy. Some patients do well with small doses of digitalis long continued, for months and even years. Other patients with valvular disease and incompetency, after the hypertrophy has been restored by digitalis, may not again need a cardiac drug for months until some unusual exercise, or mental anxiety, or severe sickness has again broken the compensation, and again digitalis will improve the condition. Rarely, however, in patients who have repeatedly taken digitalis, or in some few patients always, some other cardiac medication will act better than does digitalis.

In any condition in which the *right side of the heart* alone is dilated and incompetent without valvular lesions, as occurs in pulmonary disturbances such as pleurisy, empyema, advanced tuberculosis, and especially emphysema, digitalis is of benefit. This is true in spite

of the denial by some experimenters that digitalis acts at all on the right ventricle.

In conditions of sudden *cardiac failure or shock* from any cause the action of digitalis is so slow, even if given hypodermatically, that it should not be relied on to meet the emergency. If the shock or cardiac distress can be overcome for the time being by other drugs, digitalis given at the time will in some hours begin to add its powerful stimulation to the heart and blood-vessels.

In *simple hypertrophy* of the heart, or when the compensation is complete in valvular lesion, digitalis should *not* be used.

In the various stages of *acute endocarditis* occurring as a complication in acute rheumatism it is hard to decide whether digitalis should, or should not, be used. On the one hand the heart at this time should not be stimulated to more sturdy contraction. On the other hand, the slowing of the heart can but do good by modifying the movements of an inflamed organ. If the heart with endocarditis is beating at the rate of 110 beats a minute, it would seem good treatment to cause such physiologic rest as would be produced by reducing the pulse-rate to eighty or ninety beats a minute.

Probably early in endocardial inflammation local application of ice is the best method of slowing the heart. Next, if the conditions allow it, perhaps small doses of aconite may be administered for a day or two; later, nitroglycerin may act well to slow and quiet the heart. After the acute symptoms are over it cannot be decided offhand that small doses of digitalis will not aid a heart in its repair. Most clinicians believe digitalis should never be used in this condition. Some experimental proof has seemed to show that small doses may tend to produce a more complete recovery of the heart. If a second attack of endocarditis is superimposed on a previously damaged heart and both together cause broken compensation sufficient to produce edemas, the problem whether or not digitalis should be given is still more difficult to solve.

In *pericarditis* this drug will help the laboring heart.

In the feeble heart of chronic *myocarditis* and of *fatty degeneration* the utility of digitalis is much less pronounced, and the advisability of using the drug at all has been much questioned. However, in many of these cases if the drug is given cautiously and in small doses it will prove of considerable benefit, as in many cases we are not certain that there is actual degeneration of the cardiac muscle; and also it is impossible to decide how extensive the degeneration is even if we assume that it actually exists. It is plain that we should not deny the patient the possible benefit from digitalis though at the same time the action of the drug should be carefully watched. Degeneration of the cardiac muscle is frequently due to inadequate nutrition caused by impaired circulation through the coronary arteries. The orifices of these arteries are covered by the semilunar valves during the systole of the heart; consequently, these arteries are not supplied with blood during its active propulsion through the aorta. But during the diastole when the aortic valve is closed the elastic rebound of the blood in the aorta fills these arteries and gives to the heart its nutrition. If the aorta is imperfectly filled, or if the blood is allowed to flow back into the left ventricle on account of the imperfect closure of the semilunar valves, or if the blood-pressure is abnormally low, the coronary arteries will not receive an adequate amount of blood and the nutrition of the heart will be impaired, and degeneration of the cardiac muscle

will take place. When any of these conditions exist, digitalis, by throwing a large amount of blood into the aorta, by causing more complete closure of the semilunar valves, and by increasing the blood-tension in the arteries, will cause an increased amount of blood to enter the coronary circulation, and the nutrition of the heart improves. Hence, digitalis will delay the progress of the degenerative process unless there is serious atheroma of the coronary arteries, but it cannot, of course, restore structures already degenerated. This latter fact makes the use of digitalis so often disappointing in the condition of chronic myocarditis. If acute myocarditis is diagnosed or surmised, digitalis should not be used.

When there is *irregularity* of the heart without any valvular lesions or signs of cardiac insufficiency, occasionally digitalis will improve the rhythm. This is especially true when the heart misses an occasional beat from previous over-exertion or cardiac strain. Under these conditions digitalis often relieves the cardiac discomfort and renders the pulse regular. If there is cardiac pain at the same time there is irregularity, digitalis will often increase that pain and do harm. In most instances of this malfunction *strophanthus* acts better than digitalis. If there is arteriosclerosis, nitroglycerin will improve the condition.

Not infrequently when there is complete *heart block*, digitalis should be used with caution, although of course it is possible that a better ventricular contraction and an improved aortic blood-pressure may cause more perfect circulation and therefore better nutrition to the part of the heart that is in trouble in this condition.

Digitalis should not be used in *endarteritis* or in *atheroma*, and hence, ordinarily, not in *aneurysm*. If aneurysm occurs early in life when the arteries are not diseased, in certain selected cases it might be used with care if it were otherwise indicated.

In *cerebral inflammations*, or in any acute cerebral condition, digitalis is contra-indicated, but in the insomnia of *neurasthenics* or when there is general *vasomotor debility*, when the patient is drowsy when up and awake, and wakeful when he lies down, the tone of the blood-vessels being so poor that they dilate in the lower part of the body when the patient is up and in the head when he lies down, digitalis oftentimes acts as a good soporific. Digitalis may be used for this purpose alone, or if given conjointly with more active hypnotics will make a much smaller dose of the hypnotic successful than when it is used without the digitalis. In fact, in *neurasthenic* conditions or in conditions of *vasomotor debility* digitalis is a general tonic for the whole system, improving the general circulation and increasing the general nutrition. Profuse sweating, especially in the axillæ, in *neurasthenic* patients is improved by digitalis.

In *delirium tremens*, whatever cardiac treatment is given should be given hypodermatically, as drugs given by the stomach are either not absorbed at all, or are absorbed very slowly, which accounts for the harmlessness of the enormous doses of digitalis given by the mouth in this condition.

In *chronic alcoholism* before hardening of the arteries has occurred this drug is undoubtedly of advantage.

Digitalis has been recommended and used for various *internal hemorrhages*, especially for hemoptysis, but it is a question of doubt whether a drug which raises the blood-pressure as does digitalis is rational treatment. The success which has attended its use in this condition is probably really the coincidence of the natural cessation of the hemorrhage. Venous hemorrhages, either

from the nostrils or from the lungs, are often stopped by the administration of digitalis. This is especially true if there are valvular lesions. Ordinarily, however, it must be remembered that drugs that raise the blood-pressure are not indicated in internal hemorrhage. In other words, such drugs as digitalis, ergot, strychnin, and atropin are generally contra-indicated. Those that lower the blood-pressure, as the nitrites, are the drugs that should be used.

On account of the slowness of its action, digitalis is not indicated in *shock* and *collapse*. Also, it has been shown by experimental evidence that animals in condition of shock do not live as long when treated with digitalis as those who are not so treated. Therefore, it is inadvisable to use digitalis in this condition.

In *purpura* and in hemorrhagic diathesis, digitalis, by contracting the blood-vessels, may tend to diminish the frequency of the hemorrhages. There are other treatments, however, more useful.

This drug by contracting the blood-vessels of the genital organs has been thought to act as an *anaphrodisiac*, and it has also been used in *spermatorrhea*. In these conditions, when there are local causative irritations and inflammations, digitalis would be of no benefit. If there were a general vasomotor debility digitalis could be good treatment.

Though not a very well-established fact, it is considered by some writers that digitalis will stimulate the uterus to contract, and hence this drug has been used in menorrhagia. It could do good only as a general circulatory tonic. It has also been recommended in *post-partum hemorrhage*, but any action in this condition would come too late to be of value, and as the bleeding is from the open veins, it is difficult to understand how it could do any good except by later improving the lost tone of the systemic vessels.

In *edema* from other causes than valvular disease, as occurs in anemia, especially of the lower extremities, when combined with other proper treatment digitalis is of marked benefit. *Chronic eczema* and ulcers of the leg, with or without varicose veins, are often benefited by digitalis.

When there are *effusions* without kidney lesions, or when there is chronic liver disease digitalis is often of benefit.

In *Graves' thyroid disease* this drug given for a long time may do considerable good by overcoming the dilated condition of the blood-vessels caused by the hypersecretion of the thyroid. Its power of slowing the heart, however, in this condition is very limited, and large doses to produce that result would probably not be justified though its prolonged use might gradually aid in establishing a cure.

The use of digitalis in *renal disease* is much discussed, some clinicians advising it and others denouncing it. No fixed rule can be given. In acute congestion of the kidney, digitalis should not be used. The same is theoretically true in uremic poisoning. However, with low vasomotor tension and a weak heart digitalis should be tried in not too large doses. If it does not give good results in thirty-six or at most forty-eight hours it should be stopped. If the results are good, the size of the dose should be diminished as over-action from digitalis can certainly readily take place in kidney lesions.

In the diseases of the lungs above cited with a strained right side of the heart, this drug is of advantage. It is also useful in many cases of *chronic bronchitis*, aiding the recovery by improving the pulmonary

circulation. Small doses are also often of benefit in severe *whooping-cough* in which the right side of the heart is subjected to such serious strain.

Digitalis has been used in *pneumonia*. Whether it is of advantage in this disease can be decided only by the individual case. Not every pneumonia patient should receive digitalis, but the condition of the heart may call for it. In the first stage it should not be used; in the second stage it may be used; in the third stage, especially where there is slow resolution, in combination with other appropriate treatment it may often be of marked advantage. If there is "prune juice" expectoration, showing a venous stasis, or insufficiency of the right ventricle, digitalis may be advisable at any stage of pneumonia. A few clinicians use digitalis throughout the pneumonic process, but they have not satisfactorily proved their case, and digitalis has seemed at times to increase the pulmonary congestion, increase the dyspnea, and cause dangerous symptoms.

Often during pneumonia the urine shows albumin and the kidneys secrete an insufficient amount of urine, even without any apparent cardiac failure. During pneumonia, digitalis, instead of increasing the urine output, frequently seems to decrease it, and the cumulative effect of the drug during this disease is readily caused.

Some clinicians advise the use of digitalis as an *antipyretic*. Before we can accept an antipyretic action of this drug in non-poisonous doses, we must know what other treatment was given in the cases in which the antipyretic action took place. The action of high internal temperature on the pneumogastric nerve or its center in the medulla is such that many times digitalis will not slow the heart, hence it should not be pushed in fevers, if it is given at all. Also, when there has been prolonged fever the cardiac muscle becomes weakened and perhaps slightly degenerated, and we here have another reason for giving digitalis in very small doses, as it is not justifiable to add much irritation to an injured organ.

Contra-Indications.—High tension of the arteries, atheromatous conditions, weak cardiac muscle from prolonged fevers, from fatty degeneration, or from myocarditis, and ordinarily serious kidney lesions should contra-indicate the use of digitalis. Inflammation of the stomach should cause some other cardiac drug to be substituted.

Digitalis is useless, if not harmful, in an attack of tachycardia and in a failing heart after a severe fever, and should not be used in these conditions. It cannot be relied on to do any more than aid the circulation when there are large effusions.

Official Preparations.—The following are the official preparations:

Digitalis: The dried leaves, dose 0.05 gram (about 1 grain).

Extractum Digitalis: Average dose 0.03 gram ($\frac{1}{2}$ grain).

Fluidextractum Digitalis: Average dose 2 drops.

Infusum Digitalis: Average dose 10 c.c. (about 2 fluidrams) or 2 teaspoonfuls.

Tinctura Digitalis: Average dose 10 drops.

Non-Official Preparations.—Various supposedly assayed watery and alcoholic extracts of digitalis are on the market, and some tinctures are prepared in such a manner as to have the fatty part of the digitalis removed. Such tinctures seem to be less likely to cause irritation of the stomach, and are therefore better tolerated. Even in these supposedly assayed preparations the strength at

times varies, and the dose of any one single preparation of digitalis is *enough* to accomplish the object desired, unless undesirable symptoms occur which prohibit further use of the drug.

Digitalinum: Digitalin is a varying product as it occurs in the shops and may or may not represent a desired activity. It is a white or yellowish white powder, odorless and bitter. Until this product is absolutely pure and always the same the beginning dose should not be more than $1/25$ of a grain. However, a dose as high as $1/4$ of a grain may be given before the physiologic effect of the drug desired is obtained. It must be remembered, however, that even this glucosid administered hypodermatically acts very slowly.

Digitoxin: A good preparation of *digitoxin* on the market is under the name of "digalen." Investigation of this product has seemed to show that it is a digitoxin perhaps not so strong as the pure crystallin digitoxin. Digitoxin represents an active principle of digitalis, and acts a little more quickly than other principles, and is eliminated a little more quickly, but does not represent the whole value of digitalis as represented by a fresh infusion of good leaves or a properly made fluidextract or tincture. Some experimentation has seemed to show that digitoxin is more likely to raise the blood-pressure undesirably and therefore precipitate a cumulative effect by its action on the kidney vessels, while, if its action is satisfactory, it will be more rapidly eliminated than some other of the digitalis glucosids. This means that a digitoxin preparation, with the kidneys healthy, is less likely to cause a cumulative action when the drug is long continued than is the whole drug. On the other hand, with the kidneys deficient, it is perhaps more liable to cause cumulative action than is the whole drug.

Digitoxin is now used with considerable frequency in therapeutics. It is insoluble in water and is irritant, and therefore should not be used hypodermatically. It seems to decompose rather rapidly, and probably therefore loses its efficiency. While it frequently steadies an irregular heart better than the whole drug, its tendency to contract the blood-vessels more than the whole drug should preclude its use when high blood-pressure or arteriosclerosis are present.

Administration.—The best preparations for internal administration are the infusion, freshly prepared, and the tincture. These preparations would be incompatible only with such drugs as are incompatible with all infusions and tinctures of vegetable drugs. If the other official preparations are used, the digitalis leaves should be given in powder or capsule, the extract in pill or capsule, and the fluidextract alone. The drug is not expensive and perhaps not often adulterated, but if the infusion is ordered one should be sure that it is made from the fresh leaves and not from the fluidextract. The infusion is no better preparation (except possibly as representing an extract of good leaves) than is the tincture, if the tincture is a good one. The dose of the infusion is always given so much larger relatively than the dose of the tincture, that the infusion gets the credit for more efficient work. The tincture is only about six times stronger than the infusion; therefore, the equivalent dose of the infusion to 1 c.c. (15 minims) of the tincture is 6 c.c. ($1\frac{1}{2}$ fluidrams).

"Digipuratum" is an extract of digitalis leaves representing the active principle. It is offered in powder and in tablet form. It is insoluble in cold water and acids, but easily soluble in dilute alkaline solutions. Each tablet contains 0.1 gm., and one a day, or less, is supposed to be sufficient, if to be given for any length of time.

Digitalin is probably the preparation of digitalis most used hypodermatically, and as previously stated, it has been urged that it is used in too small doses, which is the reason so little effect has been produced. However, the French expect to get results from 0.001 gram ($1/60$ of a grain) of digitalin, and some French clinicians advise this dose given once, and then no more for three weeks, combined with rest in bed, purgation, and a milk diet; this for cardiac dropsy.

It is certain that the satisfactory action of digitalis is evidenced by diuresis which, however, is not in positive evidence until from thirty-six to forty-eight hours after the first dose. Some clinicians, notably the French, as just stated, seem to think that one large dose of digitalis, whatever the preparation be, is more efficient in its results, when there is cardiac insufficiency with edema, than smaller doses. Smaller doses are used when there is simple palpitation and dyspnea without edemas. Very small doses are given when it seems advisable to give the drug for a long period. In fact, the more one reads of the recommendations of various writers as to the use of digitalis, the more confused one becomes. The following seem to be valuable suggestions as to the dosage of digitalis:

1. It must be known that the preparation used is a good one.
2. No immediate symptoms of the action of digitalis must be expected. It cannot exert its physiologic action until at least twelve hours, and not its full activity for at least from twenty-four to thirty-six hours.
3. If there are conditions present that present a doubt as to whether digitalis will do good or harm, the dose should be medium or even small and given three or four times in twenty-four hours, and if ascertained that the action is for good, the frequency of the dose may then be diminished.
4. If positive indications for the need of digitalis action are present without conditions of doubt being present, as arteriosclerosis or myocarditis or fatty heart, a large efficient dose should be given at once and then no more for from thirty-six to forty-eight hours.
5. Digitalis should not be used in shock or in cardiac failure in acute disease.

Mine Rescue Cars.—Why the deaths in American mines during the year 1909 should be about 5 out of every 1,000 employed, and in European countries only about 2 out of every 1,000, has caused inquiry. It has been found that this great difference is due largely to the fact that for some years past certain European countries have maintained efficient rescue stations. M. M. Hunting (*Scientific American*, Jan. 7, 1911) describes the six mine rescue cars equipped by the Bureau of Mines for rescue work. These cars are equipped with the latest apparatus including first-aid materials and are manned with experienced miners drawn for this work. They are stationed at the great coal mining centers, one in Wyoming, one in Montana, one at Salt Lake City, one in Illinois, one in Tennessee and one in Pittsburg, Pa. A surgeon from the American Red Cross Society and a mining engineer are members of the crew of each car. They will visit all mining towns of importance in their allotted territory and deliver lectures and give demonstrations on the use of explosives, electric apparatus, fire prevention, sanitation, etc. Rescue brigades will be formed at each place and each car will contain eight oxygen helmets and a supply of oxygen in tanks, twelve safety lamps, a field telephone and wire, outfits for resuscitating asphyxiated miners, etc. Men at each place will be trained in the use of the oxygen helmets, which permit the miner to enter the mine immediately after an explosion while it is full of poisonous gases. Such an equipment would no doubt have saved many lives in recent mine disasters.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, FEBRUARY 18, 1911

POSTANESTHETIC INFECTIONS

Modern surgery has rendered the occurrence of serious infections of operation wounds a rarity, but it has not succeeded so well in abolishing postoperative infection of the lungs. The development of pneumonia after an operation, even though the greatest care be taken in both anesthesia and operation, is always a dreaded possibility, and one which no amount of precaution can positively eliminate. In well-conducted surgical clinics the mortality from postoperative lung infections undoubtedly exceeds the mortality from infections arising in the operation wounds; the latter are reduced by careful technic to practically zero, while the lung complications, although much reduced by improved methods of anesthesia and better care of the patient during and after the operation, still remain a serious menace.

The reasons for these lung infections are obvious enough. Direct irritation of the respiratory passages by the anesthetic vapors, chilling of the tissues by the ether-cooled air, to say nothing of aspiration of saliva and food materials through the ineffective larynx during deep unconsciousness, are adequate to account for pneumonia. Our newly acquired knowledge of the part played by the blood in preventing and controlling infection also shows us that there is more than a local predisposition to infection, for after anesthesia the power of the blood to destroy pathogenic bacteria is markedly reduced. In fact, the members of the entire group of alcohol, ether and chloroform reduce the power of the blood to combat bacteria; the state of a man after a long anesthesia is comparable to that of an alcoholic with bronchitis who has been sleeping off an overdose of alcohol in a doorway or a freight-car.

So important a subject is this postoperative pneumonia that much interest attaches to the recent studies of Graham¹ on anesthesia and the bactericidal powers of the blood. According to these experiments, it is not the power which serum itself has of destroying bacteria through bacteriolysis which is reduced by anesthetics, but the destruction of bacteria by phagocytosis is greatly

reduced. Now it so happens that the organisms which we have to fear in surgery, the pneumococcus and the pus cocci, are destroyed chiefly through phagocytosis and not by bacteriolysis, which gives added importance to this depressing effect on the bactericidal powers of the blood. Apparently ether, the anesthetic which Graham has studied, reduces both the efficiency of the opsonins and the power of the leukocytes to take up the sensitized bacteria; these effects can be seen both in the blood of patients or animals after anesthesia, and in drawn normal blood treated with ether in the test-tube. The action of the ether is not permanent, the opsonic power being restored promptly on removal of the ether.

As the distribution and action of ether in the living body is closely dependent on its great solubility in fats and lipoids, Graham sought to learn if these substances might not influence this undesirable inhibitory action of ether on the bactericidal properties of the blood, with suggestive results. Lecithin, when added to etherized serum, was found to restore the opsonic power to normal, and—what is of especial practical importance—the subcutaneous injection of lecithin into animals, immediately after anesthetizing them, was found to cause the opsonic index to rise much more rapidly than it did in control animals. This effect of lecithin apparently depending chiefly if not entirely on its ability to take up ether from aqueous solution, the action of olive oil was then tried and found to be similar. The application of this principle to clinical uses was then made by giving rectal injections of olive oil to patients immediately after anesthesia, with a strikingly rapid return to normal of the opsonic power of the patient's blood as the result. So simple and logical a procedure as this is entitled to a general and thorough trial, which it will undoubtedly receive, especially in view of its assured harmlessness. In estimating its results, however, it must be borne in mind that the lowered bactericidal power of the blood is only one of the conditions which favor the development of postoperative pneumonia; the local injury to the lungs will still exist as a source of danger, and we can scarcely expect to eliminate entirely all possibility of pneumonia, no matter how promptly we may be able to restore the phagocytic activity of the blood.

THE DIMINISHING BIRTH-RATE

Everywhere a cry of alarm goes up at the diminishing birth-rate. The biologist deplors the apparent decrease in the virility and fecundity of the species; the publicist shudders at the possibility of the extinction or decreased importance of the nation.

The subject of the birth-rate, increasing or diminishing, is one which always seems to arouse agitation; it is one, moreover, about which opinion has oscillated for more than a hundred years. About half a century ago, John Stuart Mill, coolest and least emotional of think-

1. Graham, Evarts A.: The Influence of Ether and Ether Anesthesia on Bacteriolysis, Agglutination and Phagocytosis, *Jour. Infect. Dis.*, 1910, viii, 147; The Effect of Ether on Certain Processes of Immunity, *THE JOURNAL A. M. A.*, March 26, 1910, p 1043.

ers, wrote apprehensively of Great Britain as "a country overpeopled or threatened with being so." In the eighteenth century, on the other hand, learned writers, with equal pessimism, maintained that the population of the known world had declined since the palmy days of the great nations of antiquity; and grave fears were entertained, even as they are to-day, lest the tendency might continue indefinitely.

It was at this juncture that Malthus came forward with his theory of the necessary limitation placed on the numbers of population by the means of subsistence. The best population, he taught, was not necessarily the largest, any more than it was the smallest; it was the population which was best nourished, most industrious and most moral. Increase in numbers was good so far, and only so far, as was consistent with maintenance of the quality of population.

It is interesting to note the swing of the pendulum once more toward the position of Malthus. For instance, two recent writers attempt to show, the one, that the cause of the diminishing birth-rate is, in the main, the prudence and not the degenerated physique of individuals; the other, that it is a necessary factor in the advance of civilization among nations.

Professor Emerick¹ concedes that the stress of modern life and the involuntary sterility induced by venereal diseases may be contributing factors in the declining birth-rate, but he insists that this does not offer a satisfactory explanation of the phenomenon. Though it may be admitted, as some authorities hold, that venereal diseases are responsible for fully 25 per cent. of inability to procreate in men and for more than 50 per cent. of enforced sterility in women, to say nothing of one-child sterility, this, Emerick thinks, leaves us quite in the dark as to the real proportion of involuntary sterility. He believes that there is little evidence that incapacity due to sexual diseases has become more common, and that it is not clear that venereal diseases are most common in that portion of the population in which the birth-rate is lowest. He also believes that the fall in the birth-rate has been too sudden and marked to be accounted for by the energy expenditure demanded by modern life. Nor do the modern sedentary occupations, the higher education of women, and the other more or less artificial conditions of life operate to reduce the birth-rate without the volition of the individual. According to Malthus, the birth-rate is less among barbarous than among civilized races, and in civilization the birth-rate has fallen among laborers and mechanics as well as among brain-workers; among the inhabitants of rural communities, as well as among those of the cities. In the evolution of the race nothing has become more firmly fixed than the power of reproduction. The persistence of the procreative power is one of its most marked characteristics. This is notorious among many kinds of degenerates.

The most potent reasons, then, in Emerick's view, for the limitation of the birth-rate are found in the personal preference of the individual, and in economic compulsion. He says that the increased expense of producing self-supporting men in this day limits their supply as truly as expense limits the production of commodities. Moreover, the economic reason that once rendered marriage compulsory for women has now lost much of its force or even acts in the opposite way. The will of the woman has consequently become more influential, not only in determining the formation of the family, but in the admission of new members to it. Of course these reasons involve many others, such as postponement of marriage, desire for ease, aims and ambitions inconsistent with marriage and offspring, etc. Emerick's conclusion is that the diminishing birth-rate is primarily volitional, and that the various factors which make for involuntary sterility are of minor importance.

Taking the larger view of the question, as applied to nations rather than to individuals, Dr. Nearing² undertakes to prove the converse of Emerick's proposition, namely, that the restriction of population is economically a problem of survival. In 1800 the population of the United States, for instance, was doubling itself, by natural increase, to say nothing of immigration, every twenty-five years. Had that rate of increase continued, in 1900 the native-born population would have numbered about one hundred million, and in 2,000 A. D., it would have increased to eight hundred million. In the United States in 1910, with considerably less than one hundred millions of people, already the alarm has been raised that our land has all been taken up and much of its fertility has been exhausted, so that we are being warned against the danger of insufficient food to supply our rapidly increasing population, while the increased cost of that which is available has become a serious public problem.

Formerly wars, pestilence and famine served to keep down the population; but modern science and the spread of intelligence have increased the average length of life and reduced the death-rate so radically—say to sixteen per thousand—that the figures of the calculation quoted do not correspond to the population of 1900, disregarding the elements we are discussing which have intervened to keep the population down to a possible subsistence basis.

In other words, we come back to the position of Malthus: Population is inevitably limited by the means of subsistence. Given a certain subsistence available at a given place and a given period, capable of supporting a certain number of well-rounded lives, if the total number of lives exceeds the given optimum, the lives of some or all must be curtailed in length or breadth or in both. Beyond a certain point, a rise in the birth-rate entails a rise in the death-rate and a fall in the average standard of living.

1. Emerick, C. F.: *Is the Diminishing Birth-Rate Volitional?* Pop. Sc. Monthly, January, 1911, p. 71.

2. Nearing, S.: "Race Suicide" vs. Overpopulation, Pop. Sc. Monthly, January, 1911, p. 81.

It would be rash to attempt to find in these essays any basis for finality on the subject. A survey of the fluctuations of opinion, however, offers the comforting suggestion that we may well postpone our panic fears of depopulation and overpopulation until statistical science and the collection of statistics have made a little more progress and are able to inform us with certainty which we really need to fear.

BLACKWATER FEVER AND MALARIA

Although it is generally accepted that blackwater fever—the acute febrile hemoglobinuria of tropical and sub-tropical regions—is malarial in origin, no means has as yet been found to demonstrate this with certainty; and not infrequently there appear enthusiastic advocates for its specific character. Such a one is Craig,¹ who, in an able review, presents a strong case against the malarial hypothesis. This hypothesis is founded on the following evidence: first, the occurrence of the disease only in malarial districts, and its greatest frequency in localities infested with pernicious malaria; second, the presence of plasmodia in the blood either just before or during the attack; third, the fact that most, if not all, sufferers give a history of previous malarial attacks, and ordinarily have spent a long period in a malaria-infested region; and last, the fact that the blood-picture, a relative increase in large mononuclear cells, is that of malaria. But Craig points out that, although blackwater fever occurs only in malarial districts, many such regions, and even such as are infested with the severe type of the disease, are quite free from cases of the hemoglobinuric affection. As instances of this he cites Italy, where blackwater fever is rare, while the neighboring islands of Sicily and Sardinia suffer severely from it. In India it is restricted to certain limited areas of the malarial regions; in the Philippines, where pernicious malaria is of great prevalence, blackwater fever is almost unknown. Further, instances of house infection are recorded, in which all the cases occurring in a certain neighborhood came from one or two dwellings only. Another significant fact is that the disease appears to be spreading. Thus it is only in late years that the west coast of Africa has suffered from it and in India, too, it has been reported only comparatively recently. Yet both of these regions have been sites of pernicious malaria from time immemorial. That neither previous malarial infection nor long residence in malarial localities is required to produce the disease, is shown fairly conclusively by the citation of numerous cases in which one or the other factor was absent, or both. And the same applies to the occurrence of plasmodia, since instances are recorded in which careful blood-examinations before and during the attack, and even splenic puncture, have failed to reveal them. In regard to the significance of the blood-picture, the same findings occur in other tropical protozoan

infections, as sleeping-sickness and kala-azar. As to the quinin theory of the cause of blackwater fever, many cases have been reported in which quinin had not been administered to the sufferer. Craig also affirms that the giving of quinin has no effect on the course, but the general consensus of opinion and statistical evidence do not seem to support him on this point. The evidence for specificity consists in part of the facts already presented. Further, the occurrence of several well-established epidemics speaks strongly in its favor. Finally, the pathology, while not distinctive, differs enough from that of malaria to bear some weight.

Brem,² writing still more recently, is inclined to the view that by "blackwater fever, we in reality describe two distinct affections." The one he considers a manifestation of excessive erythrocytic destruction by malarial parasites, and therefore a type of pernicious malaria. This he designates as "pernicious malaria with hemoglobinuria." The other, with less striking evidence of plasmodial infection, he describes as "erythrolytic hemoglobinuria." As to the etiology of this second form, he offers no suggestions, beyond stating that, in some cases, at least, quinin apparently acts as a direct exciting cause. His statistics, as well as others quoted by him, appear to bear out the contention that quinin has a deleterious action in this form.

Finally, the whole subject is complicated by a recent discovery by Urriola,³ who states that all cases of malaria, however latent, show masses of blood-pigment in the urinary sediment, similar to that announced long ago by Laveran as present in the blood-stream, but not hitherto considered of diagnostic importance. It would appear, however, that the urinary pigment, although of hemic origin, is enough modified to remove it from the scope of hemoglobinuria, since Brem failed to get hemoglobin tests in the urine of numerous mild and moderate cases of malaria.

The whole problem is one that presents unusual obstacles. The difficulty of deciding absolutely as to the occurrence of malaria in any given case is alone enough to delay its solution. And without careful animal experimentation—to the necessity for which Craig calls attention—it is improbable that any absolute decision can be attained.

ANCIENT PROBLEMS OF PHARMACY AND THEIR WARNING

Most physicians of modern times would be quite sure, if they thought about the matter at all, that the pharmaceutical problems which prove so troublesome in our time represent abuses that have crept into medicine because of peculiar developments in the last few generations. Certainly very few would think that these problems—proprietary remedies and their abuse, substitution, counterfeiting of drugs, the use of long, imposing Greek

1. Arch. Int. Med., 1911, vii, 56.

2. Arch. Int. Med., 1911, vii, 153.

3. Semaine méd., 1911, xxxi, 3.

names to make new compounds popular and impressive—were all features of a previous phase of medical history. In this matter the story of medicine at Rome during the early empire is particularly interesting. Social and economic conditions were not very different from ours; indeed, as the Italian historian Ferrero made very clear in his American lectures, they were in many ways remarkably like those of our day and country. If we bear this in mind, it is not so surprising to find that our problems in pharmacy resemble theirs so closely as to be almost a perfect replica. The value of history consists largely in the applicability of its lessons to the after-time; unless we can see the fitness of the application, it becomes scarcely more than a tale that is told. The history of pharmacy, therefore, at Rome, has its special interest at this time.

Pliny the elder, for instance, complains that physicians of his time (the first century after Christ) often bought their remedies already prepared so as to avoid the trouble of preparation. He evidently refers to compounds of various kinds supposed to be curative for various affections; for Friedländer¹ says that "often the physicians did not know the exact ingredients of the compounds that they used and should they desire to make up written prescriptions, would be cheated by the salesmen." Both Galen and Pliny complain of the fact that physicians used "ready-made" medicines instead of original prescriptions carefully prepared by or under the supervision of the physicians themselves. It is evident that the proprietary remedy had come into existence thus early, and that various drug manufacturers had made specialties which physicians, following the line of least resistance, found it easy to prescribe, though men like Pliny and Galen realized very clearly that this was an abdication of one of the most important functions of their profession, which was bound to work harm in the end both to themselves and to their patients.

Galen has much to say with regard to the frauds practiced on physicians by the "cursed dealers," as he calls them, who substituted one drug for another whenever they found it difficult to fill a prescription as it had been ordered. He admits that not infrequently the drug-compounders were themselves the innocent victims of "collectors of herbs who brought saps and flowers and fruits and sprouts into towns" and of others who compounded remedies of various kinds for sale to the pharmacies. He confesses that the ingenious methods of counterfeiting practiced by some of these men would deceive any but the experts. Galen himself, in his younger years, had been a pupil under a man who "forged balsam, Lemnian earth, white flowers of zinc and other rare drugs to perfection and succeeded in making a great deal of money by this means."² Galen even insisted rather emphatically that an imported article was not necessarily genuine or pure, quite as in our day he

would probably have proclaimed that being "made in Germany" was not in itself an assurance of scientific or ethical quality. He himself preferred to obtain his drugs from the proper regions and through reliable dealers and friends on whose absolute honesty he could depend. This whole picture of the drug trade in imperial Rome, as Friedländer gives it in a page or two, would read almost like an antedated satire on certain conditions of our time; but it is sober history.

Other details seem even more strangely familiar to physicians of the present time. For instance, many remedies were known by special arbitrary names instead of descriptive names recalling the ingredients. Sometimes they were named after famous physicians who had used the remedies in question or were said to have done so; again, the preparations were named for persons of distinction who actually or supposedly were cured thereby, much as, in our own day, cigars are named for poets, statesmen and actors. The titles of some of these preparations for instance, were "Ointment for Gout, made for Patroculus, Imperial Freedman—Safe Cure"; "Ointment for Aburnius Valens" (probably the famous jurist) called the "expensive ointment"; "Eye Salve used by Florus on Antonia the wife of Drusus [the Emperor's son] after the other doctors had nearly blinded her." Many of these remedies were labeled "instantaneous," "safe," "sure cure," "harmless remedy," and the like. Frequently euphonious names, sometimes from the Greek, were chosen for these remedies—Ambrosia, Anicetum, Nectarium, and the like. The promoters evidently knew the satisfying effect on both physician and patient of a long, mystifying foreign name. George Eliot says that we map out our ignorance in long Greek names; but certainly the pharmaceutic equivalent of "that blessed word Mesopotamia" seldom fails to produce a wonderful feeling of assurance and of confidence in the therapeutic potentialities corresponding to its majestic syllables.

The source of these abuses was just the same in Rome nineteen centuries ago as it is here to-day—greed for money. To use Friedländer's words, "Wealth was the genius of the noisy, restless striving which daily filled the streets and palaces; one universal chase after money as the original good, whence were derived rank, respect and honor. The complaint was just that wealth was the sole criterion and the one aim of Rome." From this universal money-seeking came the approximate commercialization of the professions; hence the abuses that flourished in pharmacy and in medicine. The lesson is complete. The protests of Pliny and of Galen were impressive, but Rome was deteriorating; there was no professional organization to check these abuses, and they increased as Rome declined. Evidently if we are to avoid such unfortunate deterioration in our own time, we must not shrink from recognizing and resisting the evils which do so easily beset commercialized ages like those of the first and the twentieth centuries A. D.

1. Friedländer: *Roman Life and Manners Under the Early Empire*, New York, E. P. Dutton, p. 176.

Current Comment

MADAME CURIE AND THE ACADEMY OF SCIENCES

The recent candidacy of Mme. Curie for the vacant seat of M. Gernez in the Académie des sciences of France has aroused much interest outside of that country, and the news of her defeat will doubtless be a disappointment to many who seldom feel any concern about the distribution of foreign academic honors. Justly or unjustly, public opinion outside of France will incline to interpret the result of the election as a discrimination, on grounds of sex, against a scientific investigator of high standing. The academy, however, has avoided the responsibility of officially excluding women. As explained by our Paris correspondent in this issue, the agitating question of feminine candidacy was laid before the Institut de France, of which the Académie des sciences is a component part. The institute passed a resolution advising respect for "immutable tradition," but declining to interfere with the autonomy of the five affiliated academies. The Académie des sciences presented Mme. Curie as a candidate, thereby tacitly admitting the principle of the eligibility of women. On the first ballot Mme. Curie received but one vote less than her successful rival. To what degree her defeat is to be attributed to the undoubtedly strong feeling against the admission of women cannot be judged from this distance. Her successful competitor is, we are assured, a member who confers honor on the illustrious body to which he has been elected; and it would doubtless be unfair to ascribe his election chiefly to prejudice against a woman candidate. The narrowness of the margin by which Mme. Curie was defeated suggests that a similar contest might some time have a different ending. The election of so distinguished a woman as Mme. Curie to the Académie des sciences, if that should ever occur, would certainly add to rather than detract from the honor conferred on other members, since it would indicate that no personal consideration outweighed scientific attainments in the selection of members.

VINDICATING THE TUBERCULIN TEST

The report of the milk committee of the Illinois legislature, which was adverse to the tuberculin test, on the ground that a positive reaction is not a reliable indication of tuberculosis in cattle, received a severe body-blow in a test recently made in Chicago. The action of the committee was followed by the introduction into the legislature of a bill (House Bill 55), which seeks to prohibit the enforcement of the tuberculin test by municipalities. This was introduced in the interest of those milk-producers of the state who assert that the test is not conclusive. This assertion has been disputed vigorously by the Chicago health authorities, who have been enforcing this test in the dairies which supply milk to the city of Chicago. The milk-producers, confident of their ability to show the fallacy of the tuberculin test, sent to the Chicago stockyards fourteen cattle that had been found tuberculous by the tuberculin reaction. The cattle were killed and after examination by the state and federal

inspectors all were condemned as being seriously infected with tuberculosis. Two cows which had not reacted were found free from tuberculosis. According to the newspapers, tuberculin tests of cows furnishing milk for the Kansas City market show that nearly fifty per cent. are infected, and so many were condemned as temporarily to curtail the milk-supply going to that market. The cattle owners there are likewise protesting against the condemnation of their cattle. Following the Chicago demonstration of the accuracy of the tuberculin reaction in cattle furnished by the opponents of the test, the Illinois legislature should carefully consider this feature of the bill referred to before making it a law. Large numbers of similar demonstrations in this country have shown the relative accuracy of the test. There can be no question of the value of the tuberculin test of cattle, and the passage of a law by the Illinois legislature prohibiting this test and substituting, as proposed, the ordinary clinical tests, would be a distinctly backward step, one not in the interest of the health of the people of the state. The milk-producers of Illinois and adjoining states have an association primarily to further legislation of this character in their own interests, and at a recent meeting, plans were laid for the formation of a national association. Hence the question is likely to become broader than one affecting a single state.

PHARMACEUTICAL JOURNALS AND THE NOSTRUM

We had something to say elsewhere¹ as to the attitude of the pharmaceutical profession and pharmaceutical journals concerning the advertisement and sale of nostrums. Attention was called to two journals which had adopted a policy of consistency, and which were supporting THE JOURNAL's propaganda against the nostrum evil. It appears from recent utterances against certain widely advertised nostrums that the *Pacific Pharmacist* of San Francisco belongs also in the ranks of those journals which regard professionalism as higher than the good will and patronage of "patent medicine" fakers. In the December (1910) issue—commendably clean in its advertising pages—the *Pacific Pharmacist* continues the publication, under the head of "Propaganda for Drug Reform," of a list of nostrums condemned by the Department of Agriculture under the Food and Drugs Act, and calls "particular attention to cancer and headache fakes." In an editorial on vicious advertising, in the same issue, the *Pharmacist* says: "We cannot think of any good reason why our daily papers should be permitted to continue their vicious advertising." Reference is made to a number of that class of advertisements appearing in a San Francisco daily paper, and the opinion is expressed that such advertising should be made a criminal offense. In the same issue, also, a correspondent, commenting on the work of the Council on Pharmacy and Chemistry of the American Medical Association, says that pharmacists "are in sympathy with those who are trying to eliminate drugless drugs and with those who are endeavoring to make drugs of value to be of standard quality," and that "the representative physicians of the United States recognize in the pharma-

1. THE JOURNAL, Jan. 28, 1911, p. 274.

cists a spirit of cooperation and the ability to assist them in this noble enterprise." Evidently the leaven is working, and ere long other pharmaceutical journals will get in line, and, together with their three pioneer contemporaries, will be able to render most valuable assistance in cleaning up the nostrum business, as it affects both the public on the one hand and the medical and pharmaceutical professions on the other.

GLUTEN FLOUR

In previous issues attention has been called to many so-called gluten flours and their supposed value in the dietary of diabetics. The misconception as to the value of the gluten content, rather than the absence of the carbohydrate element, on which their value really depends in diabetes, was emphasized. It was further pointed out that the regulations concerning the percentage of gluten and of carbohydrates and the branding of such products under the Food and Drugs Act are unsatisfactory and tend to be misleading. In this issue is an abstract of the discussions on the subject of gluten flour at the Second International Congress for the Repression of Frauds. This is a purely commercial body, and its discussions are interesting as showing the attitude of the various members—manufacturers, bakers, pharmacists, physicians—on this subject. The physicians insisted that in making a definition for gluten flour or bread it was just as important, or more important, to state the maximal permissible quantity of carbohydrates as it was to state the permissible minimum of gluten. The definition finally adopted was much more satisfactory than the requirements of our Food and Drugs act, in that it provides that "only breads containing a maximum of 25 per cent. of wheat starch and a minimum of 60 per cent. gluten, calculated on the basis of dry material, shall be called gluten bread." While 25 per cent. is a dangerously high proportion of carbohydrate for a diabetic food, yet it is much safer than many of the so-called diabetic breads and flours at present on the American market. A maximum of 10 per cent. of carbohydrates for all flours or foods advertised for diabetics would, as a legal requirement, do much to protect the sufferers from this disease and would work no hardship on the manufacturer. Further than that, all such products should be plainly labeled so as to show the actual percentage of carbohydrate content. When this is done one of the most disgraceful and dangerous of the many frauds perpetrated by American food manufacturers will have been eliminated.

SANATORIUM TREATMENT OF TUBERCULOSIS

An interesting and encouraging indication of the possibilities of the sanatorium treatment of tuberculosis in the climate of Illinois is afforded by the report of the Edward Sanatorium at Naperville, which we recently summarized in our News Department.¹ In an illustrated pamphlet, the medical director, Dr. T. B. Sachs, reviews what has been accomplished in the four years since

the founding of the institution, which consists of a farm of forty acres and the equipment. The latter has been developed until it now comprises a medical building with laboratories, an infirmary, an assembly room, a service hall, open-air sheds, tents, etc., for the accommodation of sixty patients. Modern hygienic and dietetic methods of treatment are in force, two objects being kept in view: the arrest of the tuberculous process, and the restoration of the earning power of the patients. Originally independent, the sanatorium is now conducted under the auspices of the Chicago Tuberculosis Institute. To January, 1911, over 400 patients had passed through the sanatorium, the average stay of each being about four months, and in the report 277 cases are analyzed. The results reported are surprisingly favorable. Of 176 patients in the incipient stage 161 or 91.5 per cent. at the beginning of 1911 were in apparently normal health, with full working capacity, at periods of from six months to three years and nine months since their discharge. In addition, 5.1 per cent. possessed partial working capacity. Of ninety-one moderately advanced cases, 32 patients or 35.1 per cent. had full working capacity, while 16.5 per cent. had partial working capacity. On admission, each patient is studied thoroughly by all the methods of physical diagnosis and the laboratory. Absolute rest is enforced until any constitutional disturbance subsides and nutrition improves; then exercise is gradually introduced, and later graded work becomes a feature. The work is individualized and made agreeable. Recreation and amusement are provided and most of the time of the patient is spent out of doors. The report shows that, even in a climate which seems inimical to the best results in the outdoor treatment of tuberculosis, under a proper study of cases and a proper régime, carefully and intelligently carried out, an excellent showing can be made anywhere in the treatment of tuberculosis, as has also been demonstrated in the Adirondacks and elsewhere. One important effect of such sanatorium treatment is that the patients discharged have received such an education in right living that their influence after returning to their families and friends must be most salutary.

Medical News

ILLINOIS

Auxiliary Staff at County Hospital.—To facilitate the performance of emergency operations at Cook County Hospital, the Civil Service Commission has appointed six physicians to assist the regular attending staff. The new positions of chief of staff, night surgeon, and medical statistician have been created at the hospital.

Personal.—Dr. Joseph P. Pecival, formerly superintendent of the State Hospital for the Insane, Norfolk, Neb., has been appointed superintendent of the Cook County Institutions, Dunning.—Drs. John A. Graham, George N. Pratt and Hugh N. MacKechnie, Chicago, have been appointed as the voluntary attending medical staff in the Oak Forest Infirmary. One of the new appointees is to visit the institution each day.—The damage suit instituted against Dr. John W. Daugherty, Chillicothe, in which \$20,000 was claimed by the plaintiff on account of alleged malpractice, came to an abrupt ending, January 17, as the plaintiff failed to make her case.

Another Suit Against Illinois Board.—It is reported that the Littlejohn College and Hospital, formerly known as the

1. THE JOURNAL, Jan. 14, 1911, p. 126.

American College of Osteopathic Medicine and Surgery, has begun mandamus proceedings against the Illinois State Board of Health to secure recognition of that college by the board. The charge is that the board is unlawfully discriminating against that college. The suit filed for a similar purpose by the National Medical University in December, 1909, is still pending but that college is still unrecognized.

Bills Introduced in Legislature.—Two bills providing for a board of examiners in optometry have been introduced in the General Assembly, namely Senate Bill 140, by Mr. Brown, and House Bill 121, by Mr. Hagan. During last week the following bills were introduced: Senate Bill 155, by Mr. Hurburgh, to appropriate \$100,000 a year for the College of Medicine of the University of Illinois; House Bill 149, by Mr. Chipperfield, to establish a state surgical institution for children under 14 years; and House Bill 152, by Mr. Perkins, to amend the pure food act.

Chicago

Women Physicians Reorganize.—At a meeting, held in the Fine Arts Building, February 1, by fifty women physicians of Chicago, it was voted to reorganize the Chicago Medical Women's Club. It is intended to launch an educational campaign in which milk, food and health problems will be publicly discussed.

A Saner Fourth.—At a meeting of the Sane Fourth Association, held February 8, it was decided to have a great celebration in Grant Park, and in addition to utilize every small park and public playground. It is intended that each nationality shall participate in the general and special celebrations, that folk songs and dances shall be made special features in certain localities.

Personal.—Dr. Alice Hamilton of the Memorial Institute for Infectious Diseases, who investigated the lead industries in Chicago and Illinois, with reference to lead poisoning, for the Illinois Commission on Occupational Diseases, has undertaken similar work for the federal government.—A prospectus received announces that, after nearly twenty years of labor on an English translation of the "Papyrus Ebers," Dr. Carl H. Von Klein (who may be addressed in care of the John Crerar Library, Chicago) has completed the task and will publish a subscription edition.

KENTUCKY

Medical Society Election.—At the meeting of the Jessamine County Medical Society, held in Nicholasville, Dr. Thomas R. Welch was elected president; Dr. Daniel A. P. Lenick, vice-president, and Dr. J. A. Van Arsdall, secretary-treasurer, all of Nicholasville.

Appropriation for Babies' Milk Fund.—As the result of the plea of Mrs. Litchworth Smith, president of the Babies' Milk Fund Association, made in an address before the fiscal court of Jefferson County, the sum of \$1,500 was unanimously voted for the benefit of the association toward its expenses this year.

Moving Pictures for the Insane.—Arrangements have been made by the new state board of control of charitable institutions to install a moving-picture machine at the Central Kentucky Asylum for the Insane, Lakeland. By the contract, patients are to be given two shows a week with six new films at each performance.

Expense Falls on Hospital Commission.—It is announced that the expense attached to the temporary housing of patients, during the construction of the new Louisville City Hospital, must be borne by the Hospital Commission alone. The section in the law which created the Hospital Commission makes it optional with the city whether or not it shall bear the whole or part of the expense attached to the temporary housing of the City Hospital patients.

MARYLAND

Honor System Adopted.—The students of the Medical Department of the University of Maryland have adopted the honor system and have drawn up a code of laws for carrying it out.

Personal.—Dr. James J. Murphy has succeeded Dr. George Wells as chief of the medical staff of Annapolis Emergency Hospital.—Dr. Richard C. Massenburg is reported to be ill with bronchitis at his home in Towson.

Dispensary Report.—At the annual meeting of the Northeastern Dispensary, Baltimore, Dr. Arthur Wegefarrth was elected president, and Dr. Alexander D. McConachie, secretary. During the year nearly 20,000 patients were treated

at the dispensary; 23,332 prescriptions were filled, and 1,074 visits were made to patients' homes.

New Hospital Buildings.—A stone hospital is to be built at St. Mary's Industrial School near Baltimore to cost about \$25,000.—An additional hospital building to accommodate 200 patients is to be erected at the Maryland Tuberculosis Sanatorium. It will contain also quarters for physicians, nurses and help, offices, kitchen and living room.

Health Conference.—At the health conference held in Osler Hall, February 6-11, under the auspices of the Medical and Chirurgical Faculty of Maryland, Dr. William H. Welch presided. Among the many important addresses presented were those by Dr. Woods Hutchinson, New York City, on "How the Public Educates the Medical Profession;" Dr. Henry H. Goddard, Vineland, N. J., on "The Feeble-Minded Child as a Menace to Society, Socially and Morally;" Dr. Lyman F. Kebler, Washington, D. C., on "Advertised Cures for Tuberculosis;" Dr. F. Park Lewis, Buffalo, on "Good Sight as a National Asset;" Dr. Cressy L. Wilbur, on "Unrecorded Babies;" Dr. Llewellys F. Barker, Baltimore, on "Prevention of Nervousness in Children and the Protection of the Nervous Child," and Dr. Ronald Godfrey Freeman, New York City, on "The Relation of Good Milk to Infant Mortality."

MASSACHUSETTS

Alumni Meeting.—The annual meeting of the Boston City Hospital Alumni Association was held February 15. In the morning there were demonstrations of cases in the hospital, followed by a luncheon in the library.

Association of Boards of Health Meets.—The Massachusetts Association of Boards of Health, held its annual meeting, January 26, and elected the following officers: president, Dr. Henry P. Walcott, Cambridge; vice-presidents, Drs. Samuel H. Durgin, Boston, and Charles V. Chapin, Providence, R. I.; secretary, James C. Coffey, and treasurer, James B. Field.

Personal.—Dr. Dwight S. Woodworth has been appointed a member of the board of health of Fitchburg.—The following appointments have been made to the medical staff of the Tuberculosis Commission of Lawrence: chief of staff, Dr. Charles G. Carleton; ophthalmologists, Drs. William H. Merrill and Frank A. Coulon, and medical staff, Drs. John J. Bartley, J. Forrest Burnham, John J. O'Sullivan, Harry H. Nevers, John H. Tobin, Victor A. Reed, George B. Sargent and Granville S. Allen.

Medical Council Meeting.—At the annual meeting of the Council of the Massachusetts Medical Society, Dr. David L. Edsall, St. Louis, formerly of Philadelphia, was appointed the Shattuck Lecturer at the annual meeting of the society, in June, 1911. The following delegates were elected to American Medical Association: Dr. Frederick H. Thompson, Fitchburg; Frank G. Wheatley, North Abington, and Hugh Cabot, Boston; alternates, Drs. Isaac S. F. Dodd, Pittsfield; Allen Greenwood, Waltham, and Fred T. Murphy, Boston; Maine Medical Association: Drs. George K. Blair, Salem, and Herbert W. Manahan, Lawrence; New Hampshire Medical Society: Dr. George Z. Goodell, Salem, and Omer P. Porter, Lowell; Rhode Island Medical Society: Drs. Allen Greenwood, Waltham, and Nathaniel S. Hunting, Quiney; Connecticut State Medical Society: Drs. Everett A. Bates, Springfield, and Samuel B. Woodward, Worcester; council on medical education of the American Medical Association: Dr. Harold C. Ernst, Boston, and alternate, Dr. Horace D. Arnold, Boston; auditor, Dr. Chauncey C. Sheldon, Lynn, and member of committee on publication to succeed Dr. John C. Munro, deceased, Dr. Edward W. Taylor, Boston. It was voted to pay the mileage of delegates to meetings of the American Medical Association, and to instruct delegates to make reports to the council after the meeting. It was also voted that on the first annual meeting of the society each section should elect its officers for the coming year. It was voted that the revised list of medical schools and colleges in the United States and Canada be the standard on which future fellowship in the Massachusetts Medical Society be based.

MICHIGAN

Clinic at Harper Hospital.—The medical staff of Harper Hospital, Detroit, will give medical, surgical and laboratory clinics at the institution, February 24 and 25 from 8 a. m. to 5 p. m. The medical profession is invited to be present. It is the aim of the staff to hold several of these clinics each year. The program includes medical and surgical clinics and practical laboratory work. No charges or fees are made for these clinics.

Personal.—Dr. John V. Frazier, Lapeer, has been appointed a member of the Board of Control of the State Home for the Feeble-Minded in that city.—Dr. Clark E. Spencer, Port Huron, is reported to be seriously ill at his home.—Dr. Don D. Kuapp has been appointed health officer of Flint, vice Dr. Myron A. Patterson, resigned.—Dr. John H. Kellogg, Battle Creek, has been appointed a member of the State Board of Health, vice Dr. Angus McLean, Detroit, and Dr. Thomas M. Koon, Grand Rapids, has succeeded Dr. Malcolm C. Sinclair, Grand Rapids, as a member of the board.

MISSOURI

Decide Site for Children's Hospital.—The Hospital and Health Board of Kansas City have decided to erect the new children's hospital on the southeast corner of the new general hospital grounds.

Committee on Public Health.—Dr. Jefferson D. Griffith, Kansas City, president of the Jackson County Medical Society, has appointed the following committee on public health and registration: Dr. Franklin E. Murphy, Andrew W. McAlester and Rush E. Castelow. One member of this committee, will, it is expected, meet with the mayor at the executive committee meeting of the city council each Monday morning.

Personal.—A fire at Denver, February 4, totally destroyed the office of Dr. Calvin F. Forbis.—Dr. and Mrs. Benjamin Belove, Kansas City, have returned after two years abroad.—Dr. James R. Hull has sold his interest in the Monroe Hospital, Monroe City, to Dr. John N. Southern.—Dr. Jesse E. Hunt, school inspector of Kansas City, has resigned.—Dr. John M. Doyle, St. Joseph, physician of Buchanan County, has resigned and has been succeeded by Dr. James K. Graham, St. Joseph.—Dr. William C. West, Kansas City, while making a professional call, was attacked by a negro, whom he put under arrest. He was stabbed twice in the breast but not seriously injured.

St. Louis

Changes at St. Louis University.—At the St. Louis University School of Medicine, Dr. Charles Hugh Neilson, formerly professor of physiologic chemistry, has been advanced to the chair of medicine which has been placed on a salary basis. It is planned to have other clinical chairs likewise placed on a salaried basis so that the appointees may devote their entire time to the work in their departments.

Acquitted of Failure to Report Disease.—Dr. John H. Kern, charged with having failed to report a case of chicken-pox to the board of health, and fined \$25 in the police court, was discharged by Judge Miller in the court of criminal correction. Judge Miller, in his decision, says in effect that a physician is not a scout or detective, and it is not his business to go into homes and ascertain the existence of a contagious disease, even though he may suspect that such disease exists.

Personal.—Dr. Henry Hanson, Webster Groves, has been appointed physician of St. Louis County.—Dr. Charles H. Dixon, who has been seriously ill in Cleveland, is reported out of danger.—Dr. Amand N. Ravold, medical director of the Missouri State Life Insurance Company, has resigned.—Dr. George Buckner is reported to be seriously ill with septicemia.—Washington University announced, February 10, the appointment of Dr. Fred T. Murphy, Boston, as professor of surgery in its medical department.

NEW YORK

Personal.—Dr. Anna M. Stuart has been appointed city bacteriologist of Elmira.—At the meeting of the Elmira Academy of Medicine, February 1, Dr. Arthur K. Bennett, who recently returned after ten years missionary service in Persia, read a paper on vesical calculus, with special reference to conditions found in Persia.

Newell in Rochester.—At the meeting of the Section of Obstetrics, Gynecology and Pediatrics of the Rochester Academy of Medicine, February 15, Dr. Franklin S. Newell, Boston, delivered the address of the evening on "The Requirements of Modern Obstetrics." A dinner was given in honor of Dr. Newell prior to the meeting.

Macdonald Memorial.—An association has been formed for the purpose of raising funds for a memorial for Dr. Willis G. Macdonald, and Governor Dix has been named president. A meeting was held in Albany, on February 3, where plans were discussed for raising the sum of \$100,000. The memorial will probably take the form of a laboratory for Albany Medical College.

Probing State Hospitals.—The stewards of the various state hospitals held a conference at Utica on January 21,

with a representative of the auditing committee which is engaged in investigating the affairs of the state hospitals. A searching investigation is being made and recommendations were made as to improvements in methods and system of accounts and caring for supplies and property.

Plan for Milk Commission.—As a result of the disclosures in connection with the milk business, especially in New York City, a bill has been introduced into the legislature by Assemblyman Foley, which provides for the appointment of a milk commission to have general supervision over the milk dealers in the state and over persons buying and selling milk in cities of the first class, the commission to consist of three persons appointed by the governor at an annual salary of \$5,000 and the principal office to be in New York City. The measure provides that the commission shall have the power to investigate the quality and price of milk and to fix standards of quality. The bill carries an appropriation of \$5,000.

Lecture on Public Health.—Monroe County Medical Society plans to give Rochester the benefit of a series of free lectures on preventive medicine and public health. The series will consist of eight lectures given on alternate Friday nights during February, March and April. The first lecture was given by Dr. F. Park Lewis, Buffalo, February 3, on "Conservation of Vision." The subsequent lectures are on "Occupational Diseases and Their Prevention," by Dr. Eugene H. Porter, state health commissioner; "Deformities and Their Prevention," Dr. Wisner R. Townsend, New York City; "Cancer and Its Cause and Prevention," by Drs. William S. Bainbridge, New York City, and Harvey R. Gaylord, Buffalo, and "Prevention of Insanity," which will be given in cooperation with the State Charities Aid Association.

New York City

Lying-In Hospital Alumni Meet.—At the meeting of the Alumni Association of the Lying-In Hospital of the City of New York, held at the Harvard Club, February 14, the paper of the evening was read by Dr. John O. Polak, Brooklyn, on "What Can We Expect From the Vaccine Treatment of Puerperal Sepsis."

Personal.—At the eighteenth annual dinner of the Long Island Medical Society, held in Brooklyn, February 7, the guest of honor was Dr. John O. Polak, one of the oldest members of the association.—Dr. William S. Bellows, Jamaica, who has been traveling in search of health for the last five months, has returned home.

Crusade Against Spitters.—Health Commissioner Lederle has announced that 160 persons have been arrested since January 1 in the crusade against the spitting nuisance. Of sixty persons arrested during the first week in February, forty were fined and in sixteen sentence was suspended. Only fourteen out of the 160 have been discharged outright.

Annual Report of Dispensary.—Dr. Alfred H. Riedel, house physician and registrar of the North-Western Dispensary, reports that this is the only institution in the city of New York which furnishes everything absolutely free to its applicants. During 1910 the total number of patients treated in the clinics was 17,538; the total number of visits made to patients at their homes was 9,178.

Medical Lecture Series.—The Educational Alliance has planned a series of lectures on medical topics to be given during February, March and April at Alliance Hall. The first lecture will be given by Dr. William M. Polk, president of the Academy of Medicine, on February 23, on "Medical Ethics and Their Application to Practice;" the second on March 30, on "Gynecologic Operations by the General Practitioner," by a lecturer to be announced later, and a third on April 23, by Dr. J. Brettauer on the "Secret Division of Fees."

Infantile Paralysis.—Health Commissioner Lederle has announced that since the Health Department, on November 1 last ordered that physicians report all cases of infantile paralysis as a communicable disease, eighteen cases have come to the attention of the Health Department. The division of communicable diseases has been giving special attention to this affection. Inspectors have been instructed to be very careful and exact in obtaining information as to periods of incubation and infectivity, since negative may be as important as positive findings.

Medical Society Secures Appeal.—A new trial was ordered in the appellate division of the supreme court, February 3, in favor of the New York County Medical Society, which appealed from a judgment of \$7,500 obtained against it by Paul Schmitt, charged with practicing medicine without legal authority. The court, in its opinion, stated that at the trial the evidence established in substance that the real plain-

tiff was not authorized to practice; that he held himself out as Dr. Schmitt and claimed that he could cure glanders; that an article appeared in a newspaper to the effect that a Dr. Gannett was in Bellevue Hospital suffering from glanders, and that this article was shown to the plaintiff by one Conrad, who, at the time, said he had written to Dr. Gannett; the letter being signed "The Department of Glanderine, per C. Conradus, Secretary," offering to cure him free of charge.

Approves Directory.—At a meeting of the Medical Society of the County of New York, January 23, a preamble and resolutions were adopted setting forth that a communication had been received from the Medical Society of the County of Chemung, advocating the discontinuance of the Tri-State Medical Directory, similar communications having been sent to other county medical societies in the state; recording the disapproval of the Medical Society of the County of New York of any effort to discontinue the directory; instructing its delegates to the state society to oppose strenuously any effort to discontinue the directory, and directing that a copy of the resolutions and the reasons therefor be sent to the secretaries of the county medical societies of the state, and the officers and members of the house of delegates. These reasons are that the directory is of supreme importance to the physicians of the cities which furnish the overwhelming majority of the membership of the state society; that the abolition of the directory would cause a loss of membership; that the employment of the directory is reciprocal between city and country practitioners; that the directory has proved to be a most efficient collector, as members are anxious to appear in good standing; that the directory is regarded as authoritative by boards of health, life insurance companies and other business concerns; that the directory is the most potent weapon against quackery; that the directory is an absolute necessity to larger medical societies; that the expense charged to the directory may be misleading in some particulars, and is counterbalanced in some measure by the income from advertising and sales; and that the directory is one of the most important material benefits in building up a powerful organization of medical societies.

NORTH CAROLINA

Personal.—Wake Forest College has secured Dr. W. T. Carstarphen for the chair of physiology in the department of medicine.—Dr. Franklin W. Griffith has located in Asheville.

Hookworm in Asheville.—Dr. Claude L. Pridgeon, one of the Hookworm Laboratory workers, reports, as the result of the examination of scholars in Asheville City graded school, that from 25 to 40 per cent. are infected with the hookworm.

Society Meetings.—At the annual meeting and banquet of the Buncombe County Medical Society, held in Asheville, the following officers were elected: president, Dr. Clyde E. Cotton, Black Mountain; vice-president, Dr. Charles L. Minor, Asheville; secretary-treasurer, Dr. Gaillard S. Tennent, Asheville, and Drs. S. Westrav Battle, Marshall H. Fletcher and Carl V. Reynolds, all of Asheville, delegates to the State Medical Society.—Wake County Medical Society at its annual meeting held in Raleigh, January 12, elected Dr. J. A. J. Penny, Roger's Store, president; Dr. Joel Whitaker, Raleigh, vice-president; Dr. William C. Horton, secretary, and Dr. Kemp P. Battle, Jr., treasurer.

OHIO

Personal.—Dr. George W. Crile has succeeded Dr. Dudley P. Allen as chief of the visiting and surgical staff of Lakeside Hospital, Cleveland.—Dr. Andrew J. Timberman, Columbus, has returned after a trip to India.—Dr. Charles O. Probst, secretary of the State Board of Health, Columbus, is reported to be ill with influenza.—Dr. Solomon B. Hiner, Lima, is reported to be seriously ill with pneumonia.—Dr. Jacob J. Coons, Columbus, has been appointed pathologist of the State Board of Health.—Dr. Oscar H. Sellenings has succeeded Dr. Jacob A. Stout as president of the Columbus Board of Health.

Elections.—At the annual meeting of the Cleveland Medical Library Association, the following officers were elected: president, Dr. Charles B. Parker; vice-president, Dr. Benjamin L. Milliken, and secretary, Dr. Henry L. Sanford. It was announced that the sum of \$150 has been offered by a friend of the library for a prize for the best medical paper on any subject in medicine and surgery to be submitted to a committee of judges before September 1, the competition to be open only to members of the library who have graduated within the last ten years.—At the annual meeting of the Lakeside Hospital Alumni Association, held January 18, the

annual address was delivered by Dr. Alexander Primrose, Toronto. Dr. Henry L. Sanford was elected president; Dr. Arthur H. Bill, vice-president, and Dr. Gilchrist, secretary-treasurer.

Cincinnati

New Board of Health Official.—The Cincinnati Board of Health, at a recent meeting, established the position of kitchen inspector, the position to be filled by a woman at a salary of \$600 a year.

Report of Antituberculosis League.—The financial report of the Cincinnati Antituberculosis League shows total receipts of \$22,777.96, and disbursements of \$6,017.68. Dr. Otto P. Geier was elected president; Dr. Samuel Iglauer, secretary, and Drs. Samuel E. Allen, John M. Withrow, Edwin W. Mitchell, Albert Faller, H. Kennon Dunham and William H. Strietman, trustees.

PENNSYLVANIA

Officers Elected.—At the organization of the Allegheny Valley Branch of the Allegheny County Medical Society, the following officers were elected: President, Dr. Adam C. Davis, Hites; vice-president Dr. William F. Ross, New Kensington; clerk, Dr. Nannie M. Latimer, Tarentum; and treasurer, Dr. Thomas E. McConnell, Parnassus.

The Afflicted.—While Dr. David H. Bemis, West Middletown, was making a professional call, his horse slipped and fell on him, fracturing his right leg.—Dr. Edward G. Husler, Carnegie, is in the West Penn. Hospital, Pittsburg, suffering from cerebral hemorrhage.—Dr. Wilmer R. Batt, Harrisburg, is reported to be convalescent after an operation for appendicitis.

State to Adjust Hospital Appropriations.—In order to adjust state appropriations to hospitals, the house appropriation committee has obtained a report showing the number of free days of treatment given by each hospital of the state in the last two years and Governor Tener and legislative leaders are agreed that state money shall go largely to hospitals giving most public benefit.

State Aid for Charity.—The preliminary report of the Board of Commissioners of Public Charities suggests that steps be taken for the examination of the several systems of children's aid as now dispensed, with the view to the establishment of a uniform system on a more substantial and exalted plane. The amount asked by Philadelphia institutions was \$4,772,000, and the amount recommended for distribution by the board was \$2,252,000.

Personal.—Dr. Samuel G. Dixon, Harrisburg, has been reappointed state health commissioner.—Dr. Ira J. Dunn, Erie, has returned after six months abroad.—Dr. James F. Edwards, superintendent of infectious diseases, has resigned the chairmanship of the Pittsburg Tuberculosis Commission.—Dr. George R. Vernon, president of the Clifton Heights Board of Health, has resigned.—Dr. John Todd has been reelected president of the Pottstown board of health for the eighteenth consecutive term.

Philadelphia

Addition to Hospital Opened.—The children's building of the Samaritan Hospital was opened January 19. The new building is erected to the memory of the late James L. Miles, and is the latest annex of the hospital. It contains, in addition to the children's ward, a large number of private rooms.

Statue for College of Physicians.—A heroic-sized statue of the Greek physician, Æsculapius, cut in a beautiful block of Carrara marble by the Roman sculptor, Manetti, will be presented to the College of Physicians at its next meeting. The statue is a gift of Dr. Richard H. Harte, a member of the college, and was originally intended to occupy a niche at the first landing of the marble staircase, but it is thought that it may have to be erected elsewhere, owing to its great size and weight.

Census of Defective Children.—The census of defective children in the public schools of the city is now complete and shows that there are 11,543 mentally deficient pupils. Three kinds of deficiencies are considered in the report: First, the physically deficient, embracing the blind, deaf, speech defectives, crippled and epileptics; second, the mentally deficient, backward, feeble-minded and imbecile and third, the morally deficient, truants and incorrigibles. The first class, backward children who require instruction by special methods in small special classes, number 1,857 boys and 1,063 girls; and dull children, who would be benefited by special instruction, 3,362 boys and 3,241 girls; class 2, feeble-minded children who should properly be in custodial institutions, 287 boys and 155

girls; girls 3. truant, incorrigible and vicious children of defective mentality, who should be segregated in special schools, 387 boys and 607 girls; truant, incorrigible and vicious children of fair mentality who should be segregated in special schools, 1,082 boys and 40 girls.

Personal.—Dr. S. Weir Mitchell has been renominated as a member of the board of managers of the University Museum. —Dr. George W. Merscher, chief resident physician of the Germantown Hospital, was operated on in that institution, February 7, for appendicitis. —Dr. Joseph Walsh has returned from a three months' tour of Egypt and the Orient. —Dr. Owen Copp, Brookline, Mass., for twelve years head of the Massachusetts State Board of Insanity, has been appointed physician-in-chief and superintendent of the Pennsylvania Hospital for the Insane, known as Kirkbride's. —Drs. Charles K. Mills and William G. Spiller have been elected foreign corresponding members of the Paris Society of Neurology. —Dr. Charles Furbush, chairman of the milk Commission, has been appointed by Mayor Reyburn to represent Philadelphia at the International Exhibition on Hygiene, to be held in Dresden in May. —Dr. Edward A. Spitzka, professor of general anatomy in the Jefferson Medical College, is recovering from a serious attack of blood poisoning. —Dr. Jesse O. Arnold has been elected president of the Samaritan Hospital Medical Club. —Dr. J. William White has been made a trustee of the University of Pennsylvania; Dr. John B. Deaver, clinical professor of surgery, and Dr. Milton B. Hartzell, professor of dermatology.

Children's Hospital Plans Completed.—The architects have completed plans for the group of buildings to be erected at Eighteenth, Fitzwater and Bainbridge Streets, for the Children's Hospital, the cost of which, when completed, will be \$500,000. The group will consist of an administration building, dispensary, nurses' home and ward building in the Georgian style of architecture, fire-proof and set well within its own grounds and surrounded by an open iron fence. The site measures 308x203 ft., includes half a block and was donated by Eekley B. Coxe, Jr., one of the board of managers, who gave \$100,000 for the purpose. Several houses have since been purchased for space for a power plant, laundry, etc. The buildings will conform to the latest ideas in hospital construction; covered passageways join the various buildings, forming elevated walks free from dampness; wards light and airy, three roof gardens for convalescents and thorough screening for the exclusion of flies. —Mrs. Anne McMichael Hoyt has conveyed to the Children's Hospital the residence at the southeast corner of Twenty-Second and Chancellor Streets, with a stable in the rear. These properties were presented to the hospital, which they adjoin, as a memorial to her deceased father, Morton McMichael. This gift greatly enhances the value of the present hospital, the sale of which will give fully half the money required for the new buildings.

Society Notes.—At the annual meeting of the Philadelphia Neurological Society, January 27, the following officers were elected: president, Dr. Alfred R. Allen; vice-presidents, Drs. John H. W. Rhein, and Samuel D. Ingham; secretary, Dr. George E. Price; treasurer, Dr. S. DeWitt Ludlum; and counselors, Drs. James H. Lloyd, H. H. Donaldson, and Francis X. Dereum. —The physicians and druggists of the northern section of the city have organized the Northern Medical League for the purpose of furthering the mutual interests of its members, financially, scientifically and to build up a better ethical relationship between the two professions. Bi-monthly meetings will be held and the following officers have been elected: President, M. B. Loeb; vice-president, G. Azoff; secretary, Dr. Harry S. Snyderman; treasurer, Dr. Harry A. Stember. —At a banquet February 6, the Northwestern Medical Society changed its name to "The Philadelphia Clinical Association," and elected the following officers: president, Dr. G. Morton Illman; vice-president, Dr. J. Edward Wallis; secretary, Dr. Harry Hudson; treasurer, Dr. William McKeage; executive committee, Drs. Harry A. Duncan, Daniel Longaker and Moses Behrend; board of censors, Drs. Samuel M. Wilson, Lewis S. Somers and Winslow Drummond. —The new officers for 1911 for the section on otology and laryngology of the College of Physicians are Dr. Arthur W. Watson, chairman, and Dr. Ralph Butler, clerk. —At the recent meeting of the Physicians' Motor Club, the following officers were elected for 1911: president, Dr. S. Leon Gans; vice-presidents, Dr. L. Webster Fox, Dr. J. J. Rebrecht, Dr. Richard C. Norris; secretary, Dr. J. Gurney Taylor; treasurer, Dr. Lewis H. Adler, Jr.; solicitor, B. Douglas Bartlett; directors for 3 years: Drs. Sylvester J. Deehan and H. Augustus Wilson; for 2 years: Drs. Ernest W. Kelsey and Francis J. Kelly; for 1 year: Drs.

T. J. Ellinger and E. S. Saylor; for four years: Drs. Charles R. Haig, Jr., and Ellwood R. Kirby. —The section on ophthalmology of the College of Physicians elected Dr. William M. Sweet chairman and Dr. Thomas B. Holloway, clerk.

TEXAS

Medical Association Organized.—The Lavaca County Medical Association has been organized at Hallettsville with Dr. Paul Renger, president, and Dr. W. W. Shropshire, secretary.

State Board Election.—At the first meeting of the State Board of Medical Examiners, held in Austin, February 7, organization was perfected and the following officers were elected: president, Dr. William B. Collins, Lovelady; vice-president, Dr. Marquis E. Daniel, Honey Grove, and secretary, Dr. John D. Mitchell, Fort Worth.

State Board Appointments.—Dr. Ralph Steiner, Austin, has been appointed state health officer, and Drs. Benjamin M. Worsham, El Paso; William L. Crosthwaite, Holland; William B. Collins, Lovelady; George L. Baber, Winnsboro; John H. Evans, Palestine, and James D. Osborn, Cleburne, members of the State Board of Health, and John E. Rosser, Austin, registrar of vital statistics.

Personal.—In a fire at Rusk, recently, Drs. Andrew H. McCord and John F. Johnson lost their office furniture, books and instruments. —Dr. Robert M. Wickline has succeeded Dr. Louis H. Kirk, resigned, as health officer of Austin. —Drs. Hugo V. Heblin, Fort Worth, and I. Newton Suttle, Corsicana, have been appointed first lieutenants and assistant surgeons in the Medical Corps, Texas National Guard.

New Sanitariums.—Dr. Frank L. Barnes, Trinity, is about to erect a sanitarium at Trinity to cost \$15,000. —Dr. Francis G. Floeckinger is building a sanitarium in Taylor, to cost \$15,000. —Dr. James A. Caldwell, McKinney, has let the contract for his new sanitarium which is to be completed in May. —The control of the Baptist Sanitarium, Houston, has formally passed to the new company, to which a charter has been issued under the name Baptist Sanitarium and Hospital.

GENERAL

New President of Sanitary Commission.—Dr. Meverell K. Allen, Louisville, has been elected president of the Ohio River Sanitary Commission, vice Dr. Robert E. Vickers, Huntington, W. Va., resigned.

Physicians to Meet.—The twenty-third semi-annual meeting of the Missouri Valley Medical Society will be held in St. Joseph, Mo., March 16-18, under the presidency of Dr. Donald Macrae, Council Bluffs, Ia. Drs. Charles H. Mayo, Rochester, Minn., and Heinrich Stern, New York City, will deliver the addresses on surgery and medicine, respectively. —It is announced that the next annual meeting of the Association of State and Territorial Health Officers will be held in San Francisco, June 24-26, and that a joint meeting of the health officers of the United States and Canada will follow. —The fourteenth annual meeting of the American Gastro-Enterological Association will be held in Philadelphia, April 19 and 20. Among the more important papers on the preliminary program are those on "Stretching of the Pylorus in Benign Stenosis," by Dr. Max Einhorn, New York City; "Operative Treatment of Impermeable Cardiospasm," by Dr. Willy Meyer, New York City; "The Relation of Symptoms to Pathologic Findings in Cancer and Ulcer of the Stomach," by Dr. Joseph C. Bloodgood, Baltimore, and papers on "Duodenal Ulcer," by Drs. John A. Liehty, Pittsburg; James T. Pileher, Brooklyn, N. Y., and Lewis Brinton, Philadelphia.

Manufacture and Distribution of Meningitis Serum.—The Rockefeller Institute for Medical Research now gives notice that it has discontinued the general distribution of antimeingitis serum which it has undertaken without charge ever since the discovery of this remedy, and will now devote to other lines of investigation the funds hitherto needed for gratuitous distribution of the serum, handing over to the public health authorities of municipalities and states, and to commercial establishments the routine preparation of the serum for general use. The Board of Health of the City of New York has undertaken the regular production of the serum and will provide for free distribution to all hospitals and to all physicians who apply for it. Statistics show that the death rate from cerebrospinal meningitis has been reduced to less than one-third of its former amount by the early use of antimeingitis serum. The serum is administered by being injected into the spinal canal by means of lumbar puncture, an operation which is also required to secure the fluid for bacteriologic diagnosis, and several separate injections are required in treating a patient. The effective employment of the serum is likely therefore to

be restricted on account of the experience and skill required in the administration, and the high cost of the commercial product, unless the preparation, distribution, and, when necessary, administration are undertaken by state and municipal authorities.

Memorial to the Late Dr. Howard T. Ricketts.—The Mexican government has had Dr. Ricketts' works on Mexican typhus collected and published in Spanish in a handsome volume of over 135 pages entitled, "Howard Taylor Ricketts y sus Trabajos sobre el Tabardillo," with portrait and tribute to the memory of "the heroic research worker who died in consequence of tabardillo contracted in the course of his study of that disease." The volume contains the official documents relating to his death, his special articles written in collaboration with Dr. Russell M. Wilder on the etiology of the disease, and which were published in *THE JOURNAL*, and, thirdly, the addresses delivered at the unveiling of the memorial tablet in the laboratory at Mexico where Dr. Ricketts had carried on part of his research work. Copies of the memorial volume are to be presented by the Mexican government to the "principal universities, scientific societies, libraries and medical publications of the nations friendly to Mexico, and also to all the national Mexican scientific institutions." The volume opens with the official communication from the secretary of the department to Mrs. Ricketts informing her that the laboratory in which Dr. Ricketts had worked was to be renamed after him, that the scientific institutes in the City of Mexico were to be draped in mourning for three days, that a representative body of members of the faculties was to attend the funeral and cablegrams of condolence sent to the presidents of the universities of Chicago and Pennsylvania; the replies received are also given.

FOREIGN NEWS

Centennial of the Stockholm Medical School.—The Karolinska Medico-Kirurgiska Institutet at Stockholm recently celebrated its hundredth anniversary, concluding the festivities with the bestowing of honorary degrees on a number of foreign scientists. Five members of the faculty are on the board which awards the Nobel prizes.

The Nobel Prizes.—As our readers know, the Nobel prize fund awards five prizes each year averaging from \$38,000 to \$40,000 each. Since 1900 nearly two millions have been thus distributed to leaders in physics, literature, promotion of peace, medicine and chemistry. The list of the scientific recipients forms an international Hall of Fame, the chemists thus honored being van't Hoff, E. Fischer, Arrhenius, Ramsay, Baeyer, Moissan, E. Buchner, E. Rutherford, W. Ostwald, and the 1910 recipient, O. Wallach, professor of chemistry at the university of Göttingen. The recipients of the medicine prize have been von Behring, D. Ross, Finsen, Pawlow, Koch, Cajal and Golgi, Laveran, Ehrlich and Metchnikoff, Kocher and the latest recipient, A. Kossel, professor of physiology at the university of Heidelberg. The last physics prize was awarded to van der Waals, professor of physics at the university of Amsterdam, the last literature prize to P. J. L. Heyse of Germany, and the peace prize to the International Peace Bureau at Berne. The balance between the various countries has been maintained with remarkable impartiality but the majority of the prizes have gone to Germany. Only two have crossed the Atlantic, the peace prize given to President Roosevelt and the physics prize in 1907 to Professor Michelsen of the University of Chicago. It is a question whether the design of the founder of the prize fund has been realized to date; the awards have gone to men who were already resting on their laurels and the prizes have not served to foster new research to any extent. The committee in charge of the awards pays no attention to personal applications for prizes; the applications to be considered must come from scientific societies, institutions or other organized authority. It is possible that the greater preponderance of prize-winners in certain nationalities is because their institutions and societies have taken greater pains to present the claims of candidates in their respective nations.

CANADA

Brown Memorial Fund.—More than \$10,000 has been subscribed to the memorial fund of the late Dr. Arthur A. Brown, Montreal, and it has been decided to endow a scholarship at McGill University.

Investigation of Typhoid Fever in Lumber Camps.—Senator De Veber, M.D., has secured an appropriation of \$500 from the Dominion government for his committee to investigate typhoid fever in lumber and railway construction camps.

New Provincial Board of Health.—The following comprises the new Board of Health of the Province of Ontario: Chairman, Dr. Adam H. Wright, Toronto; chief health officer of the province and secretary of the board, Dr. J. W. S. McCullough, Toronto; and Drs. David B. Bentley, Sarnia; George Clinton, Belleville; William H. Howey, Sudbury, and James Roberts, Hamilton.

Hospital Notes.—Arrangements have been made whereby the Protestant Hospital for the Insane, Quebec, will receive \$142 per patient each year from the government for a period of fifteen years.—In a suit brought for damages by a patient of Notre Dame Hospital, the hospital has won the victory.—The Charlotte Eleanor Englehart Hospital, Petrolia, has recently been opened.

Plans of Toronto Health Officer.—Dr. Charles J. C. O. Hastings, medical health officer of Toronto, estimates the expenses of his department at \$159,000 for the current year. He contemplates the reorganization of the Toronto Health Department, the establishment, in addition to the chief of laboratories, of a secretary of health, bureaus of vital statistics, contagious disease and food inspection, hospital and ambulance service, and sanitation and a school for sanitary instruction.

Personal.—Sir Wilfred Thomaston Grenfell, the medical missionary of the Labrador coast, has been selected as the William Belden Noble lecturer at Harvard University for 1911 and 1912.—Dr. George R. McDonagh, Toronto, is taking a trip to Barbados.—Dr. William E. Struthers, Toronto, has been appointed chief medical inspector of schools.—Dr. John N. E. Brown, superintendent of Toronto General Hospital, has resigned and will study hospital administration abroad.—Dr. Fred J. Tees has resigned as superintendent of the Montreal General Hospital, and has been succeeded by Dr. George Shanks.—Dr. Louis Laberge has been retained as health officer of Montreal.

Toronto Demands License Power.—The dean of the Medical Department of Toronto University, in his annual report, advocates that the power of the Ontario Medical Council be curtailed as regards the standard of medical education and examination. He claims that the work of the medical department is hampered, owing to the fact that the council does not set a high standard for qualification and examination. An effort is being made by the university authorities to have the legislature pass an act whereby a graduate in medicine from Toronto University may enter at once into the practice of medicine without any further examination by the council.—A delegation from Queen's University, Kingston, has gone to Toronto to oppose the application of Toronto University that it be allowed to grant licenses to its graduates to practice medicine without passing the examination of the Ontario Medical Council.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 27, 1911.

The Candidacy of Mme. Curie and the Election of Dr. Branly to the Academy of Sciences

The candidacy of Mme. Curie (*THE JOURNAL*, Jan. 7, 1911, p. 53) brought up the question of the eligibility of women to the Institut de France, which was warmly discussed at the quarterly session of the five academies. A resolution was finally passed to the effect that it appeared altogether wise to respect immutable tradition on this point, but that the assembly did not assume to prescribe this course to the various individual academies. The Académie des sciences therefore presented Mme. Curie in the first rank of the list of candidates in the section of physics; in the second rank were presented Dr. Branly and four other candidates, among them Dr. Broca, *agrégé* professor at the Faculté de médecine. On January 23, the academy held the election. The contest narrowed down to Mme. Curie and Dr. Branly. There were fifty-eight voters. On the first ballot, Mme. Curie received twenty-eight votes and Dr. Branly twenty-nine. Dr. Branly, having received thirty votes or a majority on the second ballot, was elected.

Edouard Branly was born in Amiens in 1846. He received the degree of doctor of science in 1873, and was soon appointed professor of physics at the Institut catholique. In 1882, he received the degree of doctor of medicine. The researches which have brought him his greatest renown pertain to radio-conductivity and thereby to wireless telegraphy. It may be said that the latter was rendered possible by the work of Branly, and the fact has been recognized by Marconi himself. If, as d'Arsonval says, every academy, whatever the number

of its sections, really comprises only two classes of members, those who honor it, and those who are honored by it, it must be acknowledged that Branly belongs incontestably to the first category.

Salvarsan (606) and Syphilitic Nephritis

In the session of the Société médicale des hôpitaux, on January 20, Professor Widai and M. Javal made a report on the treatment by salvarsan of a patient with syphilitic nephritis, who for fourteen months had had an abundant albuminuria of from 10 to 14 gm. per liter. In the seven days following the administration of the drug (0.6 gm. by intravenous injection) the albuminuria presented no appreciable change; from the eighth to the seventeenth day it diminished from 10 gm. to 2.5 gm. per liter and in the following month, with slight oscillations, it continued to decrease from 2.5 gm. to 1 gm. It should be said that the patient had been treated, at the beginning of the nephritis, by several injections of biniodid of mercury, which had no action on the kidney. Salvarsan appeared on the contrary, to effect a decrease of the albuminuria, but it should not be forgotten that the two treatments were applied at very different periods of the affection; the mercury, at the moment of the edema and the greatest retention of chlorids; the salvarsan, when the renal permeability to chlorids had been much improved. It is probable that salvarsan does not produce the same effects at all periods of syphilitic nephritis. In any case, although the state of the kidney should be taken into account in treatment by salvarsan, incipient syphilitic nephritis being regarded as a contra-indication, this does not apply indiscriminately to all forms of renal syphilis or to all the periods of the disease.

Dr. Siredey has observed a patient affected with albuminuria, edema of the legs and purpura, in whom, six months after an indurated chancre, a sclerogummatous glossitis appeared. Mercury treatment was inefficacious and appeared to increase the albuminuria; an injection of salvarsan was employed. Seven days afterward a very marked improvement of the glossitis and a diminution of the albuminuria was observed.

Portraits at the Pasteur Institute

A portrait of Dr. Roux in his laboratory is about to be placed in the library of the Institut Pasteur, by the side of the bust of Pasteur, by Paul Dubois, and the portraits of Duclaux and Metchnikoff. Around these portraits are to be the busts of the benefactors of the institute, among whom are Alexander III, who was one of the first subscribers, Dom Pedro, second emperor of Brazil, Baron Alphonse de Rothschild, Osiris and others; then those of the former collaborators of Pasteur, Grancher, Nocard and Chamberland. The portraits of the last-named are by Dr. Paul Richer, member of the Académie de médecine and the Académie des beaux-arts.

Election of Dr. Sébilleau to the Academy of Medicine

On January 24, the Académie de médecine elected a member in the section of anatomy and physiology to replace Professor Gréhant, who died last March. On the first ballot, Dr. Sébilleau, *agrégé* professor of the Faculté de médecine de Paris and surgeon of the hospitals, was elected by forty-five votes against thirty-seven for Dr. Prenant, professor of histology at the Faculté de médecine de Paris.

Prizes Offered by the Belgian Academy of Medicine

The Académie royale de médecine de Belgique has offered a prize of 800 francs (\$160) each, for studies on the following questions: (1) experimental research on the modifications produced in the peripheral and central parts by injections of alcohol into the nerve trunks; (2) a study of the lesions produced by hydrogen phosphid poisoning. The close of the competition is fixed for Feb. 15, 1912.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan 19, 1911.

Personal

Professor Nagel, director of the physiologic institute at Rostock, has just died at the age of 40. He joined the faculty of Tübingen in 1895 and after a short stay at Freiburg he was made head of a department in the physiologic institute in Berlin in 1902 whence he was called to Rostock as regular professor in 1908. The chief field of this gifted investigator was comparative physiology and the physiology of the senses. —Professor Matthes, director of the clinic for internal med-

icine at the Cologne academy for practical medicine, has accepted the call to succeed Professor Brauer at Marburg.—Professor Uhlenhuth, of the imperial health office, has received a call to Strasburg as successor to Professor Forster.—Dr. Moro, privat-docent at Munich, has assumed the supervision of the Heidelberg pediatric clinic in place of Professor Feer who has gone to Zurich.

Transfer of the Prussian Medical Bureau From the Department of Education to the Department of the Interior

Medical affairs in Prussia have not, as in some other states, a special department and an independent position, but for many years have been attached to the so-called Kultusministerium, which has charge of ecclesiastical and educational matters. In consequence of the overloading of this department, the effort has repeatedly been made to separate the medical department from the Kultusministerium and transfer it to the department of the interior. In fact, the medical bureau originally belonged to the department of the interior, having been transferred to the department of education in 1849. Various reasons for and against the change have been urged, but the prevailing motive aside from the overloading of the Kultusministerium was the fact that the medical police was already a part of the department of the interior, and it was felt best that all medical affairs should be under one management. To the medical bureaus are subordinated in the first place the highest Prussian expert authority on medicine, namely the scientific deputation for medical affairs, and also the institute for infectious diseases in Berlin and a number of hygienic institutes in provincial cities, the medical investigation offices in the provinces, etc. This change cannot be considered of great importance. It will depend on the personality of the medical department and also on the head of the department of the interior whether matters of health and those affecting the medical profession will be conducted in the same way as before or not. No restriction in the requirements of the health office is to be feared, for any state which does not keep at the front in these matters would in a certain sense saw off the branch on which it is sitting.

A Salaried Municipal Medical Councilor in Berlin

The municipal health affairs of Berlin have heretofore not been conducted by a salaried member of the city government but by a physician who had merely the honorary position of a municipal councilor. The colleague in question has undeniably shown a good capacity for organization, but in consequence of an insufficient preparation has for a long time been unequal to the task of managing so great a community as our metropolis is bound to present. For many years the Berlin medical profession and the medical press, especially the *Deutsche medizinische Wochenschrift*, have demanded that the medical affairs in this city shall receive the same representation that is received by the building interests, the schools, etc., which means that they shall be cared for by a salaried officer specially trained for this important position, who shall give his attention exclusively to the care of the public health. This demand has heretofore been refused by the city government which has been under the direction of a mayor who showed little comprehension of medical needs. Some recent occurrences which indicated the insufficiency of the organization, but especially the example of our neighboring city, Charlottenburg, which has established a municipal health officer, appears to have secured the fulfilment of the wishes of the Berlin medical profession. The commission on municipal hospitals, a few days ago, made the proposal to appoint a salaried municipal health officer with the salary of a technical member of the city government, inasmuch as the duties imposed on the city in the field of public health and the tasks voluntarily assumed in this relation have lately reached such extent and importance that it seems necessary, in addition to the member who is filling the honorary office, to secure another of distinguished ability in all such questions.

Antivaccination Movement

Ever since the introduction of compulsory vaccination its opponents have each year endeavored to have the law repealed, and they seek to gain the favor of the government, the parliament and the public for their efforts by collecting and displaying the actually observed injuries due to vaccination and also by appeals to the imaginary horrors of vaccination. Repeatedly the government has seen fit to appoint commissions before which the antivaccinationists, to whom also some physicians belong, were given opportunity to make their complaints, and regularly the result of these conferences has been that the provisions for vaccination have been improved

but the provisions of the vaccination law itself have been maintained. Lately the antivaccinationists have made a new attack and have induced two delegates of the center to make a motion that another commission be appointed to discuss a modification of the vaccination law. It is further demanded that a bill should be prepared in which it shall be provided that the present physical compulsion for carrying out vaccination be removed and that further a so-called conscience clause be introduced according to which any person shall be exempt from vaccination, if he declares before the appropriate official that he cannot reconcile the vaccination of the child with his conscience. It is clear that with the adoption of such a conscience clause, compulsory vaccination would be completely abrogated and that hundreds of thousands who are opposed to vaccination, from ignorance and superstition, would exempt their children from it. The experience gained with such a conscience clause in England, where it has existed since 1907, will, it is to be hoped, induce the Reichstag to refuse the proposal of the antivaccinationists. In England marked small-pox epidemics still occasionally develop which cause numbers of deaths. The high small-pox morbidity and mortality which occur in countries in which compulsory vaccination is not required, should easily induce the government to withhold its consent to such a proposal even if it should be adopted by the Reichstag.

Imports and Exports of Drugs and Medicinal Chemicals

In 1909 the importation of manufactured remedies and other pharmaceutical products was 285 tons, valued at \$290,000 (1,140,000 marks); in 1908, 326 tons at a value of \$413,000 (1,653,000 marks). The exports, in 1909, were: 1,109 tons at a value of \$1,994,000 (7,979,000 marks); in 1908: 936 tons at a value of \$1,742,000 (6,968,000 marks). The best customers are Austria, Russia and the United States.

Chemical products for use in medicine were imported as follows: 1909: 60 tons valued at \$178,000 (714,000 marks); 1908: 44 tons valued at \$133,000 (532,000 marks). The exportations were: 1909: 915 tons valued at \$3,223,000 (12,844,000 marks); 1908: 837 tons valued at \$2,803,000 (11,212,000 marks).

Marriages

OSCAR D. WHALIN, M.D., to Mrs. Emma Maxwell, both of Chicago, recently.

CLAYTON McPEEK, M.D., to Miss Mary Alice Biddle, both of Columbus, O., January 30.

WALTER BENJAMIN HARVEY, M.D., Pittsburg, to Miss Aurelia F. Bartlett of Lewisville, Ind., February 1.

DAVID HENRY WORTHINGTON, M.D., Aurora, Ill., to Miss Huldah Henrietta Bettcher, at Iowa City, Ia., January 17.

Deaths

Edward Gamaliel Janeway, of New York City, eminent internist and specialist on diseases of the mind, died at his summer home in Summit, N. J., February 10, aged 69. He was born near New Brunswick, N. J., and received his preliminary education at Rutgers College, from which he received the degree of B. A. in 1860, and M. A. in 1863. While still a student in the College of Physicians and Surgeons, he entered the United States Army as a medical cadet, serving in a hospital in Newark, N. J., in 1862 and 1863. In 1864 he was graduated from the College of Physicians and Surgeons. He was curator of the institution from 1868 to 1872, professor of pathology and practical anatomy from 1872 to 1879, and professor of diseases of the mind and nervous system from 1881 to 1886; professor of medicine in Bellevue Hospital Medical College from 1886 to 1892, and dean of the University and Bellevue Hospital Medical College since 1908.

He was a member of the American Medical Association, National Association for the Study and Prevention of Tuberculosis, Association of American Physicians, New York Academy of Medicine, and many other learned societies. From 1875 to 1882, he acted as commissioner of the Health Department of New York City. He was on the staff of Bellevue, Mount Sinai, Presbyterian, St. Vincent, J. Hood Wright, Woman's and French hospitals, and on the staff of the Hospital for the Ruptured and Crippled as consulting physician. He was given the degree of LL.D. by Rutgers College in 1898, by Columbia

University in 1904, and by Princeton University in 1907. In 1876 Dr. Janeway served as president of the *New York Medical Journal* Association. By the death of Dr. Janeway, the medical profession loses one of its best internists and a pioneer in the practical crusade against tuberculosis.

Stanley Douglas Curran, M.D. Bellevue Hospital Medical College, 1896; instructor in physical diagnosis in the University and Bellevue Hospital Medical College; attending physician to the clinic of that institution and to the Harlem Dispensary; adjunct physician to Washington Heights Hospital; died at his home in New York City, February 4, from a gunshot wound of the head, self-inflicted, it is believed with suicidal intent, while despondent on account of ill health, aged 40.

John Calvin McClung, M.D. Western Reserve University, Cleveland, 1873; a member of the American Medical Association; formerly a member and president of the board of education, mayor, member of the council, and health officer of Leipsic, O.; local surgeon for the Cincinnati, Hamilton and Dayton; New York, Chicago, and St. Louis, and D. T. and I. railways; died at his home, February 3, from cerebral hemorrhage, following an attack of influenza, aged 68.

Aristides Monteiro, M.D. Medical College of Virginia, Richmond, 1850; Jefferson Medical College, 1854; formerly physician in charge of the male department of the Eastern State Hospital, Williamsburg, Va.; surgeon of the Tenth Virginia Cavalry and later surgeon to Col. Mosby's command in the Confederate service during the Civil War; afterward editor of a weekly newspaper in Manchester; died at his home in Richmond, January 27, aged 82.

Charles Chesterfield Nicola, M.D. University of Michigan, Ann Arbor, 1897; a member of the American Medical Association; for several years a staff physician of the Battle Creek Sanitarium; superintendent of the New England Sanitarium, Attleboro, Mass.; while en route to New York from Bermuda where he had gone on account of his health, disappeared from the steamer *Oceana*, February 7, and is supposed to have been drowned, aged 44.

Charles Edwin Wood, M.D. University of Michigan, Ann Arbor, 1907; who entered the U. S. Public Health and Marine-Hospital Service as assistant surgeon in 1908, and was assigned to duty on the U. S. R. C. *Seneca* but resigned from the service in 1910; a member of the American Medical Association; physician to the Brooklyn Rapid Transit Employees' Benefit Association; died in the Brooklyn Hospital, February 1, from Ludwig's angina, aged 29.

Giles Bertram Allen, M.D. University of Michigan, Ann Arbor, 1867; a member of the Michigan State Medical Society; a veteran of the Civil War; formerly a member of the legislature; probate judge of Eaton County for six years, and a member of the school board of Charlotte for fifteen years, and for several years a member of the local pension board; died at his home, February 5, from heart disease, aged 67.

Jacob Coble, M.D. Medical College of Indiana, Indianapolis, 1885; a member of the Indiana State Medical Association; a veteran of the Civil War; for more than forty years a practitioner of Spencer, Ind.; local surgeon for the Pennsylvania System; a member of the district board of pension examiners; died at his home, February 4, from heart disease, aged 66.

Joseph Frederick Sommerhoff, M.D. Bellevue Hospital Medical College, 1894; for ten years chairman of the examining board of the New Jersey College of Pharmacy; and at one time professor of hygiene in that institution; for many years a practitioner of Newark; died at the home of his sister in Bloomfield, N. J., January 25, from locomotor ataxia, aged 45.

J. Elmer Bailey, M.D. Kentucky University, Louisville, 1904; formerly local surgeon at Huttig, Ark., for the Eldorado and Bostrop, Farmerville and Southern, and Little Rock and Monroe railroads; a member of the Union County Board of Health; died at his home in Strong, Ark., January 12, from typhoid fever, aged 39.

Reynaldo Dorsey Mackin, M.D. Medical College of Ohio, Cincinnati, 1887; a member of the American Medical Association; a member of the legislature of West Virginia in 1907 and 1908; local surgeon at Grafton for the Baltimore and Ohio Railroad; died at his home, January 31, from nephritis, aged 46.

John Wesley Bickford, M.D. University of Buffalo, N. Y., 1881; a member of the American Medical Association; formerly coroner of Niagara County and city physician of Lockport, N. Y.; jail physician since 1908; died at his home in Lockport, January 31, from cerebral hemorrhage, aged 62.

John Grimes Keller, M.D. Medical College of Georgia, Augusta, 1884; for two years quarantine officer of Savannah; later port surgeon and county physician; in 1902 and 1904 and 1910 coroner of Chatham County; died at his home in Savannah, January 26, from cerebral hemorrhage, aged 48.

Adolph Rosenthal, M.D. University of Vienna, Austria, 1869; for eight years a surgeon in the Austrian service; of Uniontown, Pa.; from 1882 to 1902, a practitioner of Chicago; died in Mount Sinai Hospital, New York City, January 12, two weeks after an operation for pyonephrosis, aged 65.

William Litchworth Birney, M.D. Missouri Medical College, St. Louis, 1879; a member of the Missouri State Medical Association; for half a century a practitioner of medicine, and for forty years a resident of Hydesburg, near Hannibal; died at his home, January 29, from pneumonia, aged 79.

James T. Estill, M.D. Missouri Medical College, St. Louis, 1879; surgeon for the Denver and Rio Grande Railroad at Colorado Springs, Colo.; died at his home in that city, while endeavoring to light a gas range, February 2, from the accidental inhalation of gas flames, aged 61.

Selden M. Payne, M.D. Eclectic Medical Institute, Cincinnati, 1846; assistant surgeon of the Ninety-Fourth Illinois Volunteer Infantry during the Civil War; died at his home in Lexington, Ill., January 18, from injuries received by a fall down stairs two weeks before, aged 91.

Alfred Elisha Hubbard, M.D. College of Physicians and Surgeons, New York City, 1892; of Brooklyn, N. Y.; for a year surgeon on steamers plying between Hamburg and New York; died in the Norwegian Hospital, Brooklyn, Dec. 26, 1910, from meningitis, aged 41.

Charles Albert Gaudet, M.D. Tulane University, New Orleans, 1869; a member of the American Medical Association; a Confederate veteran; at one time a member of the board of health of New Orleans; died at his home, February 1, from pneumonia, aged 63.

William L. Bowman (license, Nebraska, 1891); a pioneer practitioner and clergyman of northeastern Nebraska, where he had practiced for more than forty years; for one term judge of Stanton County; died at his home in Stanton, February 6, aged 86.

Stephen S. Stout (license, years of practice, Michigan, 1900); surgeon of volunteers during the Civil War; for more than forty years a practitioner of Cheshire; a member of the state legislature in 1899; died at his home, January 31, aged 81.

Platt Ellsworth Beach, M.D. Long Island College Hospital, Brooklyn, 1877; a member of the American Medical Association; died at his home in Seville, O., January 15, from septicemia, due to a splinter wound of the left thumb, aged 55.

John N. W. Crawford, M.D. Medical College of Ohio, Cincinnati, 1880; formerly of Portsmouth, O., but for the last ten years a resident of Geneva, Switzerland; died in Cairo, Egypt, Dec. 30, 1910, from pernicious anemia, aged 53.

Joseph Milligan Wallace, M.D. Columbus (O.) Medical College, 1879; a member of the Illinois State Medical Society, and one of the oldest practitioners of Mercer County; died at his home in Aledo, February 1, from pneumonia, aged 56.

Alfred Charles Denham, M.D. Miami Medical College, Cincinnati, 1867; for many years a practitioner of Somerset, Ky., and Cincinnati; died at the home of his daughter in the latter city, January 11, from cerebral hemorrhage, aged 81.

John M. Bradford, M.D. University of Pennsylvania, Philadelphia, 1884; at one time a member of the staff of the Episcopal Hospital, Philadelphia; died in his office in Kensington, Philadelphia, February 2, from nephritis, aged 52.

William R. Nugent, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1863; formerly chief surgeon of the Iowa Central Railroad at Oskaloosa, Ia.; died at his home in Chicago, February 3, from chronic nephritis, aged 78.

Carl William Rummel, M.D. Rush Medical College, 1899; a member of the Iowa State Medical Society; health officer and city physician of Webster City, Ia.; died at his home, January 31, from pneumonia, aged 37.

Charles W. Vroom, M.D. State University of Iowa College of Homeopathic Medicine, Iowa City, 1887; a member of the Iowa State Medical Society; died at his home in Whitten, Ia., January 9, from myocarditis, aged 61.

Fenwick Robertson, M.D. University of Maryland, 1854; assistant surgeon in the Confederate service during the Civil War; died at the Maryland Line Confederate Soldier's Home, Pikesville, Md., January 31, aged 81.

William Ely, M.D. Western Reserve University, Cleveland, 1881; a member of the Medical Society of the State of Pennsylvania; died at his home in Beaver Center, January 12, from cerebral hemorrhage, aged 62.

Thomas Zadoc Offutt, M.D. University of Pennsylvania, Philadelphia, 1856; surgeon in the Confederate service during the Civil War; died at his home in Granite, Md., January 30, from senile debility, aged 81.

Joseph L. Cook, M.D. Jefferson Medical College, 1858; formerly president of the Westmoreland County (Pa.) Medical Society, and coroner; died at his home in New Alexandria, January 19, aged 79.

Charles L. Morehouse, M.D. Eclectic Medical College of the City of New York, 1881; for sixty-four years a practitioner; died at his home in New York City, January 23, from pneumonia, aged 88.

Samuel Micajah Johnson, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1873; a veteran of the Civil War; died at his home in Carson, Ia., January 24, from cirrhosis of the liver, aged 70.

Joseph Gardner Moore, M.D. Baltimore Medical College, 1906; a member of the American Medical Association; died at his home in Philadelphia, Dec. 16, 1910, from typhoid fever, aged 33.

Clement Ritter, M.D. Jefferson Medical College, 1890; of Selma; a member of the Medical Association of the State of Alabama; died at an infirmary in Birmingham, January 11, aged 47.

George L. Hughes, M.D. Hahnemann Medical College, Chicago, 1891; died at his home in Chicago, February 9, after an operation for bladder disease, from heart disease, aged 72.

John P. Cook (license, years of practice, Texas, 1907); a Confederate veteran; for thirty-five years a practitioner; died at his home in Mexia, Tex., Oct. 1, 1910, from cholelithiasis, aged 66.

Edward Paulding, M.D. Bellevue Hospital Medical College, 1890; a physician of New York City; died at his home in Flushing, L. I., January 10, from cerebral hemorrhage, aged 48.

Henry J. Denham (license, Rhode Island, 1895); for more than a quarter of a century a practitioner of Providence; died at his office in that city, January 20, from heart disease.

John B. Baskerville, M.D. University of Pennsylvania, Philadelphia, 1869; of Dublin, Va.; a Confederate veteran; died at the home of his daughter in Dublin, January 17, aged 64.

Robert Swayne Prentiss, M.D. College of Physicians and Surgeons, New York City, 1870; died at his home in Long Island City, N. Y., January 28, from angina pectoris, aged 71.

Lemuel Leake Silverthorn (license, years of practice, Illinois, 1877); for fifty-four years a practitioner of Illinois; died at his home in Charleston, January 21, aged 79.

Samuel T. F. Kirkpatrick, M.D. Reform Medical College of Georgia, Macon, 1861; formerly of Franklin, Tenn.; died at his home in Nashville, January 26, aged 72.

Thomas Benjamin Haynes, M.D. Kentucky School of Medicine, Louisville, 1890; died at his home in Beaumont, Tex., January 27, from dysentery, aged 44.

Thomas Floyd Norvell (license, Illinois, 1878); for thirty-five years a practitioner of Illinois; died at his home in Peoria, January 24, from nephritis, aged 58.

William M. Rich (license, Kansas, 1901); for twenty-six years an eclectic practitioner of Clements; died at his home, January 27, from influenza, aged 81.

Alfred Stevens, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1874; died at his home in Iowa City, January 27, from cerebral hemorrhage, aged 71.

Isaac D. Johnson, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1852; died at his home in Kennett Square, Pa., January 30, aged 83.

James Polk Marshall (license, Arkansas, 1903); an eclectic practitioner of Caulksville, Ark.; died at his home, January 29, from heart disease, aged 65.

John A. Fitz-Gerald (license, Illinois, 1897); was found dead in his office in Chicago Heights, January 23, from valvular heart disease, aged 45.

Otto Albert Pfefferkorn, M.D. Boston University, 1910; died at his home in East Weymouth, Mass., January 28, from pneumonia, aged 24.

James R. Rowland, M.D. Texas Medical College, Galveston, 1875; died at his home in Mineola, Tex., Oct. 4, 1910, from cancer, aged 71.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

THE GLUTEN AND CARBOHYDRATE CONTENTS OF GLUTEN BREAD

At the Second International Congress for the Repression of Frauds, held in Paris, the proceedings of which are published by the Geneva White Cross Society, the question of the gluten and carbohydrate content of gluten bread was discussed. An abstract of this part of the society's proceedings, is given below, and the matter is further referred to editorially in this issue:

BREAD AND BAKERS' PRODUCTS

The following definition was proposed: "Gluten bread is bread made from a flour containing at least 60 per cent. gluten, this flour being obtained either by eliminating a part of the starch of the flour or by mixing a gluten flour with it."

Dr. Chevalier: The name gluten bread ought to be applied only to bread containing a maximum of 25 per cent. carbohydrates, starch, sugar or derivatives and 75 per cent. nitrogenous substances. According to Hewald, in fact, gluten bread ought to contain about 76 per cent of nitrogenous substances and 10 to 30 per cent. of carbohydrates. This means that in place of fixing a minimum of gluten or nitrogenous substances, one fixes a maximum of carbohydrates which is really more logical, for what the diabetic seeks is a food which is not a carbohydrate.

Pharmacie Principal Pairault: No doubt, but the question is very complicated.

The President: The definition of 60 per cent. of gluten is really the definition of the inventor of gluten bread, Bouchardt, who remarks that in his time a gluten bread was manufactured to which "legumine" was added, and which was sold under the name of "gluten and legumine bread."

M. Arpin: The definition is completed as follows: "In the above-mentioned breads the nitrogenous substances may be furnished by gluten, aleurone, casein, legumine, almonds, soya flour with oils removed, etc., but the presence or the association of these various substances ought to be specified." Consequently this would be an optional operation. That is another question which will come afterward. It is necessary first to complete the definition.

Dr. Chevalier: This quantity of gluten is not sufficient to justify the name of "gluten bread." Here are analyses published by M. Balland. He analyzed three gluten breads; they have the following compositions: The first two are very similar. They contain 36 per cent. nitrogenous substances; 1.25 and 1.76 per cent. of fat and 51.87 per cent. of starch for the first, and 52.92 per cent for the second. These are the commercial breads which exist at present. The third has the following composition:

Moisture	10.00 per cent.
Albuminoid nitrogenous substances.....	73.02 per cent.
Fat	3.45 per cent.
Starch	12.50 per cent.

It is evident that the first two breads cannot be considered gluten bread. There is nothing gained over a definition which is altogether therapeutic, and this is the point of view which I take. To give a patient gluten bread without any addition is not possible, but if you make bread with gluten and wheat flour you obtain too large a proportion of carbohydrates and therefore a bad bread. It is necessary to add either legumine or other nitrogenous substances containing a sufficiently large proportion of nitrogen to permit of the making of bread. From the therapeutic point of view, you ought to base the definition on the quantity of carbohydrates and not on the quantity of gluten.

Pharmacie Principal Pairault: Is it possible to manufacture bread with pure gluten? No! Then it must be admitted that there is a certain proportion of starch. What minimum proportion do you think possible from the practical point of view, from the bakers' point of view?

M. Arpin: Bread is made with pure gluten; I have seen it. But one needs to know if this bread can be easily masticated and digested by the diabetic.

Dr. Chevalier: From the practical point of view, I demand a maximum of 25 per cent of carbohydrates in gluten bread.

The President: This is what Bouchardt says in his book: "In the manufacture of gluten bread, the most conscientious manufacturers put in 25 per cent. of wheat flour and 75 per cent. of moist gluten to obtain a product which is readily acceptable."

M. Heudebert (manufacturer of health foods): I, myself, manufacture a gluten bread for which a patent has been applied and for which I have obtained a German patent. You know, of course, that the German patent guarantees the character of the invention. I have succeeded in manufacturing a gluten bread without the addition of wheat flour but with the addition of a certain proportion of alimentary casein. This has permitted me to make a bread which contains only a very little starch (10 to 20 per cent.), and which is very agreeable to the taste.

Pharmacie Principal Pairault: Such a bread can not be called "gluten" because it contains something else.

M. Heudebert: When Professor Bouchardt wrote what the President read to us just now, the progress in this industry which has since been realized had not been made.

Dr. Chevalier: From the practical point of view, I demand that the amount of gluten be raised from 60 to 75 per cent. There are breads which contain 12.5 per cent. of starch, as I have shown you just now in the analysis which I read.

President: You know, gentlemen, that "Père Bouchardt," as he was called, was much interested in the question. He was a practical man. It seems to me that we might pay respect to his opinion when he tells us that gluten bread ought to contain 25 per cent. of wheat and 75 per cent. of gluten.

Dr. Chevalier: There has been progress since Bouchardt and we have not the right to make a work of Bouchardt which dates from 1880, the basis of a definition in 1909.

President: I merely gave the reference as information.

Pharmacie Principal Pairault: It is necessary to know if it may be admitted that gluten bread contains anything else but gluten and starch.

President: No, it ought to contain only gluten.

Dr. Chevalier: I propose that the maximum of 25 per cent. of carbohydrates and 75 per cent of gluten be accepted. You make patients pay very dear for gluten bread; they ought to get something for their money. In fancy breads, oatmeal breads, or breads made in the Vienna style, you have 62 per cent. of carbohydrates. You are going to have 40 per cent. in gluten bread. I think that the difference is not enough; 75 per cent. of gluten is necessary.

M. Arpin: Subtracting carbohydrates.

Dr. Chevalier: Yes, subtracting carbohydrates. I will change the question if you wish; I say that 60 per cent. of gluten is not enough to justify the name of gluten bread.

President: For the percentage of gluten ought we not to appeal to the Section on Hygiene?

Dr. Chevalier: I see no objection.

President: We are business men. We ought not to adopt rules which perhaps would not be applicable to all people in commerce.

M. Heudebert: I call your attention to what will happen from the commercial point of view. *The public is ignorant of all these questions.* [Italics ours.—Ed.] A bread is called antidiabetic; if it is sold at 50 centimes (10 cents) it will be bought by preference because it is cheap, without regard to the fact whether it contains starch or not. The manufacturer who succeeds in manufacturing a bread which answers the therapeutic requirements of Bouchardt will not be able to sell it cheap, because it will be composed of expensive material. He will then be at a disadvantage, whereas in all justice he will have furnished the solution to the question. In my opinion, one might enlarge the scope and give all possible liberty on condition that the buyer shall know that in buying a bread, whether cheap or dear, he has a product which does or does not answer to what the doctor has prescribed for him, and that he shall get his money's worth. There are antidiabetic breads which contain sugar.

President: We are discussing gluten bread, not antidiabetic bread. You will consider that in the Section on Hygiene. I put the question: Do you think that we, who are only merchants, can fix the minimum of gluten that ought to be found in gluten bread? Is not 60 per cent. a little large, and if we say 75 per cent., shall we not err in the other direction? It is not only specialists who make gluten bread; all bakers make it. Are we not going to expose all bakers to the danger of being prosecuted to-morrow if we demand 75 per cent. of gluten, because they will not all be capable of making a bread with that proportion?

M. Heudebert: Gluten bread is not bought as a luxury but as a necessity. That is the point of view to take.

President: That's therapeutics.

M. Bruzeau: From the point of view of defining frauds it is necessary to fix a minimum. The rest is therapeutics.

President: That's a sensible opinion from an independent person.

A Member: It seems to me that the question of gluten is not so important as that of carbohydrates. Why not indicate, as was proposed just now, a maximum of starch?

M. Arpin: I believe that the interests of the bakers would be better safeguarded by fixing a maximum of starch, because they would not easily succeed in making a bread which contains 75 per cent. of gluten.

President: The remark has been made to me that if you fix a maximum of starch it will be necessary to incorporate another ingredient.

M. Arpin: The minimum of gluten might be fixed likewise.

President: We should be doing bad services by trying to obtain the quintessence. Under pretext of repression of fraud, we ought not to declare conscientious people adulterators.

Dr. Chevalier: I do not speak as a commercial man. I am a physician. I say "You wish to make a definition of gluten bread, taking as a basis something which does not exist for diabetics. What you ought to give as a definition for diabetics is the maximum quantity of carbohydrates which ought to be contained in the bread. Patients do not need gluten, they need bread which does not contain carbohydrates."

Pharmacien Principal Pairault: Carbohydrates comprise starch, sugar, etc.

Dr. Chevalier: Starch or sugar or dextrin all become sugar in the stomach.

A Member: Should this question not be reserved for the Section on Hygiene?

M. Arpin: Almost all the bakers sell gluten bread. We need to discuss and to define it.

President: The question has been made the subject of study by the originators of the Congress. It has not been made a subject of special reports, but I know that M. Roux has a great deal of information and that M. Rocques, Rapporteur général, has probably not fixed the figure of 60 per cent. at random. We should do well to be tolerant and to adopt 60 per cent.

Dr. Chevalier: I think that 60 per cent. is too little, for the rest is composed of carbohydrates.

Pharmacien Principal Pairault: No, for there is water also.

Dr. Chevalier: Not at all, since we are figuring only the dry material. There is no water then.

President: The report says simply 60 per cent. of gluten.

Dr. Chevalier: There are gluten breads which have 5 to 10 per cent. of water, and others which have as much as 38 per cent.

Pharmacien Principal Pairault: It is understood that the gluten is all dry gluten but the report does not say dry gluten bread. One must take the bread as it is, so much gluten, so much starch, so much water. Consequently the 40 per cent. does not consist exclusively of carbohydrates. There is also 7 to 8 per cent. of water.

Dr. Chevalier: That depends on the manufacturer. Between 38 and 7 per cent. That is just why you cannot estimate on the basis of gluten bread; you must estimate it dry.

Pharmacien Principal Pairault: It is almost a hardtask.

Dr. Chevalier: There are gluten breads that contain more moisture than hardtask. That depends on the manufacturer.

Pharmacien Principal Pairault: A bread which contains 60 per cent. of gluten cannot contain 40 per cent. of carbohydrates.

Dr. Chevalier: This proportion of 60 per cent. can be understood only as calculated on the dry product. That is why it is necessary to define exactly and not say "60 per cent. of gluten" without knowing whether it is dry gluten and dry bread.

Pharmacien Principal Pairault: Let us say simply "containing a maximum of 20 to 25 per cent. of starch cereals without any other addition."

Dr. Chevalier: That is just what I demand.

A Member: We shall be sending the question to the pharmaceutical section next.

President: It is really more a question of pharmacy than of bakery.

Another definition is proposed: "Only breads containing 25 per cent. of wheat starch calculated on the basis of dry material ought to be called gluten bread."

A Member: But that is not gluten bread.

Pharmacien Principal Pairault: It is an antidiabetic bread, not a gluten bread.

M. Arpin: Yes, it is, the rest being gluten.

Pharmacien Principal Pairault: We ought to add "and not less than 60 per cent. of gluten."

M. Heudebert: That would not injure any baker at all.

President: I believe that this solution is satisfactory to everybody.

M. Arpin: It seems to me that all interests are safeguarded, even those of patients.

President: I am going to put to the vote the following definition of gluten bread:

"Only breads containing a maximum of 25 per cent. of wheat starch and a minimum of 60 per cent. of gluten, calculated on the basis of the dry material, should be called gluten bread."

This definition put to the vote was adopted.

Association News

THE LOS ANGELES SESSION

A Preliminary Statement Concerning Hotels and Hotel Rates

The reports which are coming in indicate that attendance at the next session of the American Medical Association will be large, and that geographical distance will not materially interfere with the attendance. The hotel facilities are ample, and the halls and hotel head-quarters are compactly grouped in the down-town district; and unless the weather records of years are changed, the weather during that week should be exceptionally good. The summer climate of Los Angeles is in every way as pleasant as the winter season.

The General Head-Quarters hotel will be the Hotel Alexandria.

The General Meeting of the Association will be at the Baptist Auditorium, at Fifth and Olive Streets.

Accompanying is a list of hotels and the rates which can be obtained at the time of the session, as reported to the Los Angeles Convention League. There are 400 family and tourist hotels and apartments available which are not included in the list. Those wishing to reserve rooms should write direct to the hotels, or to the Committee on Arrangements.

RATES AT LOS ANGELES HOTELS

NAME OF HOTEL, Plan,* and No. of Rooms	ONE PERSON		TWO PERSONS	
	Without Bath	With Bath	Without Bath	With Bath
Alvarado, A., 100.....	\$2.50 up	\$4.50 up	.....	\$5.00 to \$7.00
Alexandria, E., 700...	2.00 to 3.00	3.00 to 5.00	\$3.00 to \$4.00	4.00 to 10.00
Angelus, E., 300.....	1.50 to 3.00	2.50 to 5.00	2.50 to 4.00	4.00 to 10.00
Astoria, E., 200.....	1.00	1.50	2.00	2.50
Broadway, E., 200.....	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 4.00
Fremont, A., 100.....	2.50 up	5.00 up	3.50 up	6.00 up
Hampden Arms, E., 60	1.00	1.50 to 2.00	1.50	2.00 to 2.50
Hayward, E., 300.....	1.50 up	2.00 up	2.00 up	3.00 up
Hollenbeck, E., 500...	1.00 up	1.50 up	2.00 up	3.00 up
Hollywood, A., 200....	2.00 up	4.00 up	2.50 up	6.00 up
Ingraham, A., 100.....	2.50 up	4.00 up	3.50 up	5.00 up
King Edward, E., 150.	1.00 up	1.50 up	1.50 to 3.00	2.00 to 3.00
Lankershim, E., 300..	1.50 up	2.00 up	2.50 up	3.00 up
Leighton, A., 125.....	3.00 up	3.50 up	5.00 up	6.00 to 10.00
Melrose, A., 200.....	2.50	4.00	3.50	5.00
Munn, E., 100.....	.75 to 1.00	1.00 to 1.50	1.25	1.50 to 2.00
Nadeau, E., 150.....	1.00 up	1.50 up	1.50 up	2.50 up
Natick, E., 160.....	.75 up	1.00 up	2.00 up	3.00 up
Occidental, E., 200....	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 4.00
Rosslyn, E., 285.....	.75 up	1.00 up	1.50 up	2.50 to 4.00
Snow, E., 100.....	1.00 to 2.00	1.50 to 2.50	1.50 to 3.00	2.50 to 3.50
Trenton, E., 165.....	1.50 up	2.00 up	2.00 up	2.50 up
U. S. E., 130.....	.50 to 1.00	1.00 to 1.50	1.50 up	2.00 up
Van Nuys, E., 160.....	1.50 up	2.50 up	2.50 up	4.00 up
Victoria, E., 100.....	1.00 up	1.50 up	2.00 up	2.50 up
Watson, E., 100.....	1.00 up	1.50 up	1.50 up	2.00 up
Westminster, E., 250..	1.00 up	2.00 up	1.50 up	3.00 up
Woodward, A., 125....	2.00 up	3.50 up	2.50 up	4.00 up
Westmore, A., 100....	2.00 up	2.50 up	4.00 up	5.00 up
Yorkshire, E., 100....	1.00	1.50 up	1.50 up	2.00 up

* A, American plan; E, European plan.

As regards entertainment: the nearness to the ocean beaches and to the foot hills, with the trip to Catalina Island, and the possibility of out-of-door entertainments, will make possible a variety of features not easily had in other sections of the country.

We wish that those who are thinking of attending the session would drop a postal card to the Committee on Arrangements, 240 Bradbury Building, Los Angeles, Cal., stating the

number in the party. The committee will appreciate this courtesy, as the more definite its knowledge concerning the number of visitors, the more thorough can be its preparations for their entertainment.

The undersigned will be glad to send further information on receipt of request.

H. BERT ELLIS, Chairman,
GEORGE H. KRESS, Secretary.

Rates to Los Angeles

The Chairman of the Committee on Transportation wishes to state that he has received a great many letters from members inquiring about rates, routes, etc., to the Los Angeles session. He has been unable to answer them as yet for the reason that the railroads have not been able to agree on the rates. Notice has just been received that the western roads have made a rate of \$62.50, round trip from Chicago to Los Angeles by any direct route, or by way of San Francisco. From St. Louis, Memphis and New Orleans the rate is \$57.50; Missouri River Gateways (Omaha to Kansas City inclusive), \$50.00; St. Paul and Minneapolis, \$63.50. Dates of sale are June 5 and 6 and June 10 to 22, both inclusive. The final return limit is September 15. Additional rates will be published as soon as they have been announced by the railroads. Details of routes and the arbitrary amount to be added for the northern roads will also have to be announced later.

M. L. HARRIS, Chairman, Chicago,
Committee on Transportation and Place of Session.

Correspondence

Two Appendices in One Person

To the Editor:—In THE JOURNAL, January 21, Dr. W. G. Young writes of a case in which he found two appendices in one individual, each appendix being well-defined and well-developed.

Some years ago a patient was brought to me for operation for adhesions following an appendicitis operation. On opening the abdomen, I found an appendix about three inches long, containing two hard concretions, much to the surprise of another physician present, who stated that the year before he had stood by while the same patient was operated on in an acute attack, and had seen an appendix with three concretions removed. My explanation at the time was that probably the patient possessed an appendix six inches long originally, and the first operator had removed three inches with three concretions, the rest having escaped observation in the midst of acute inflammatory products. I do not know whether this was really the explanation, or whether the patient had two appendices, as the family physician still believes.

ROBERT T. MORRIS, New York.

A Theory of the Cause of Cancer

To the Editor:—In the quest for the cause of cancer, theory and speculation have run wild, but up to the present time we seem to be as far away from the goal as we were when the pathologist first began to unravel the almost hopeless tangle. Theories have been unnumbered, and among the more recent are those of the sturgeon's egg and the trout. Investigation has been directed to cancer in other kinds of fish. Maps have been prepared showing the relation of the so-called cancer areas to the natural distribution of trout.

Cancer does not seem to limit itself to those who dine on *hors d'oeuvres* and fish. It has occurred to me that possibly the commonest form of living animal cell which is ingested by human beings, and which might be the cause of new growth, is that of the fecundated hen's egg. The latter is practically unlimited in distribution, and, indeed, where it is not obtained, other varieties of immature ovular life are used in its stead; for instance, the egg of the common duck, the seagull, the ostrich and of many others, even of reptiles.

To be sure, eggs are eaten, not always, but frequently, in the raw state as in egg-nog, beaten white of egg, and soft-boiled. In a lightly cooked egg, the ovum seems to resist coagulation more than the remainder of the egg.

We are told that all new growths are derived from one of the primitive layers, and in the fecundated egg we have all of these requirements—the endoderm, the mesoderm and the ectoderm. This living cell then, introduced into the human body and becoming attached to some abnormal part of the digestive apparatus, gastric, duodenal or intestinal ulcer for instance, begins its growth, and then by metastasis, its progress may become unlimited. In recent months laboratory work has been done in the artificial propagation of various cellular structures, notably that of the chicken embryo.

In THE JOURNAL (January 21, p. 198), Peyton Rous reports characteristic cancerous growths following the inoculation of small amounts of a watery filtrate of a chicken sarcoma, and also following inoculation of fluid supernatant after centrifugalization of a tumor emulsion.

If then, new growth may be transmitted, not necessarily by the intact living cell, the possible chance of transmission of new growth through the medium of its by-products becomes apparent.

MALCOLM SEYMOUR, M.D., Boston.

[COMMENT.—The theory that the germinal cells included in the hen's egg are the cause of cancer was proposed by G. Kelling in the *München. med. Wchnschr.*, 1904, li, No. 24. His communication was commented on editorially in THE JOURNAL, July 23, 1904, p. 269, and a second communication was made by him in the *München. med. Wchnschr.*, li, No. 43, 1904; abstr. in THE JOURNAL, Dec. 3, 1904, p. 1733. Kelling claimed to have produced malignant neoplasms by the inoculation of dogs with hens' eggs and also found that in human carcinoma of the stomach, a precipitin reaction for hen's-egg albumin could be obtained. This theory does not appear to have received any notice since that time. We have no known example of the successful transplantation or grafting of the cells of one animal species into the tissues or bodies of some other species; consequently it is rather far-fetched to assume that the living cells in the hen's egg might grow in the animal body.—EDITOR.]

Preservation of Rubber Bulbs

To the Editor:—Apropos of the note by Dr. Goodman, referring to the short life of rubber bulbs, in THE JOURNAL, Jan. 14, 1911, p. 113, and the letter on the same subject by Dr. Albert Robin, in THE JOURNAL, Feb. 4, 1911, p. 367, it occurs to me that it might be of general interest to note that the perishability of rubber bulbs, such as are used with sphygmomanometers, has been known for many years. Hill and Barnard, as early as 1897, employed a metal pump similar to that used for inflating bicycle tires on a sphygmomanometer devised by them, and reported it in the *Brit. Med. Jour.*, 1897, ii, 904.

Having encountered the same difficulty in my work with sphygmomanometers, I have had made pumps of two varieties which may now be obtained from instrument dealers at small cost. These pumps are small and are each fitted with a valve to prevent escape of pressure. The later model, which is smaller than the first, is also provided with a needle valve which permits the gradual release of pressure in the system. The first of these pumps has been in use for nearly two years, and from the number now extant, seem to be becoming increasingly popular.

FRANCIS ASHLEY FAUGHT, M.D., Philadelphia.

Differentiation of Chronic Nephritis and Neurasthenia.—Chronic nephritis with threatening uremia may sometimes present a group of symptoms in a neuropathic individual which might be mistaken for neurasthenia, e. g., headache, characterized by tightness and feeling of pressure, especially in the morning, giddiness, weariness and lassitude with inaptitude for mental or bodily work, diurnal somnolence, etc. An examination of the heart, the urine, the pulse and the retina will enable a diagnosis to be made.—F. W. Mott, in the *Practitioner*.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DESCRIPTION OF SEPTIC TANK—HOW SOON AFTER CHILD-BIRTH MAY CONCEPTION OCCUR?

To the Editor:—Kindly answer the following questions: 1. What is a septic tank? 2. How soon after the birth of a child may another conception take place?
L., Ohio.

ANSWER.—1. A septic tank is a tank into which sewage is allowed to flow, there to remain for a certain time in order that solid matters may settle out and a certain amount of putrefaction occur from the action of the anaerobic bacteria present in the sewage. Most of the benefit comes from the deposition of solid matter, which might otherwise clog filter beds. This solid matter is removed at intervals of some months. For fuller information see *THE JOURNAL*, Nov. 5, 1910, p. 1650, and Dec. 10, 1910, p. 2067.

2. Kroenig, in the *Zentralblatt für Gynäkologie*, 1893, page 445, describes a case of pregnancy in a second para who gave birth March 10, 1893, to her second child and July 4, 1892, to her first child. The first child was nursed ten days. A single coitus occurred four days after the birth of the first child, that is, on July 8. There was no further intercourse for three months. The second child, which was born 243 days after the fruitful coitus, was 52 cm. long and weighed nearly 8 pounds. This is the earliest recorded case of conception postpartum. It raises several interesting questions relating to the activities of the ovaries during pregnancy, the viability of spermatozoa in the lochia, the possibility of the nesting of the egg in the recently emptied uterus and the duration of pregnancy.

Weinberg, in the *Zeitschrift für Geburtshilfe und Gynäkologie*, vol. 1, page 7, in a paper on "The Effect of Nursing on Menstruation and Conception," has collected statistics which show that about 20 per cent. of nursing women and 80 per cent. of those who do not nurse menstruate within six weeks of labor. Of puerperæ who do not menstruate about one in one hundred become pregnant within six months and about six in ten of the puerperæ who menstruate become pregnant within the same period.

SILVER NITRATE AND OTHER COMMON GERMICIDES IN GONORRHEA

To the Editor:—Since reading the article on "Common Germicides" by Post and Nicoll, in *THE JOURNAL*, Nov. 5, 1910, I have often wondered why some of the more efficient germicides are not used clinically in the treatment of gonorrhea. I have not been able to find the information I want on the subject, nor have I been able to learn anything from a number of physicians with whom I have talked about the matter. Why can we not with advantage use tincture of green soap, alcohol or Senn's solution as an injection in gonorrhea? If we can, why has it not been done, and what is the proper way to use these agents? Why are argyrol and protargol used so extensively if silver nitrate is superior?

E. L. EVANS, M.D., Gary, Ind.

ANSWER.—Tincture of green soap and alcohol are both irritating to denuded epithelial surfaces; they cause hyperemia and increased weeping from the surfaces, and thus interfere with the formation of horny epithelium and healing. For these reasons, if for no other, they would hardly seem to be useful antiseptics in acute urethritis. The same reasons in less degree apply to Senn's iodine solution. As regards argyrol and protargol and silver nitrate: In the first place, of course, silver nitrate is fatherless and there is no one to tell every willing listener over and over again its wonderful qualities; in the second place, silver nitrate shares with alcohol the quality of being too irritating in efficient strength to be a satisfactory antiseptic for use in acute gonorrhea. In chronic gonorrhea, when properly used, it is unequalled by any of the newer silver preparations.

FINSSEN LIGHT AND LUPUS VULGARIS

To the Editor:—Is the Finsen light much used in this country? What is the percentage of cures of lupus vulgaris by this method of treatment? Is lupus vulgaris more prevalent on the Continent of Europe and the British Isles than in the United States?

JOHN B. DONALDSON, Lorain, Ohio

ANSWER.—The Finsen light is now used very little in the United States; here and in Europe it has been largely replaced among dermatologists by the x-ray. The results in the Finsen Light Institute in Copenhagen for 456 patients treated up to Dec. 31, 1900, were as follows: In slight cases 83 per cent. of the patients were practically cured; in extensive cases 52 per cent. were practically cured; 130 patients were known to be well for five years. Lupus vulgaris is much more prevalent in continental Europe and in the British Isles than in the United States.

SURGERY ONE HUNDRED YEARS AGO

To the Editor:—I am informed that a history of surgery was published in *THE JOURNAL* some years ago and that it was afterward published in book form. If you have the book will you kindly send me a copy? If not, please inform me where I can obtain it.
S. A. CLARK, South Bend, Ind.

ANSWER.—Perhaps the article you want is by Dr. George Fischer on "Surgery One Hundred Years Ago, a Historical Study," translated by Dr. Carl H. von Klein, Chicago. This work appeared in *THE JOURNAL* in 1897 in many issues, namely, from February 13 to August 14; also in the first part of 1898. It has not been published in any other form.

BLEPHAROSPASM A NASAL REFLEX

To the Editor:—Replying to the request of Dr. R. S. Lamb for information regarding "blepharospasm," I would refer him to the recent article on "Reflexes and Reflex Neuroses from the Upper Air Tract," by Dr. Bryant in the *Boston Medical and Surgical Journal*, Feb. 2, 1911.

Blepharospasm is usually a nasal reflex and the area involved is the tubercle of the septum and middle turbinal. In fact, this "genital area" of the nose is hyperesthetic and changes of blood-pressure induce the irritation which shows itself in the muscular movements. I have seen chronic symptoms, and, indeed, severe chorea, yield immediately to the removal of adenoids or to direct treatment of these areas within the nose; by direct I mean local applications under illumination.

EDMUND D. SPEAR, M.D., Boston.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Feb. 11, 1911.

Gunckel, George I., D.S., sick leave of absence extended fourteen days.

Stone, Frank P., D.S., reported for duty at Presidio of Monterey, Cal.

Weed, Frank W., captain, reported for temporary duty at Madison Barracks; left Fort Totten, N. Y.

Trinder, John H., M.R.C., reported for temporary duty at Fort Totten, N. Y.

Lambie, John S., Jr.; Worthington, Joseph A.; Tasker, Arthur N.; Snyder, Howard M., and McKinney, Garfield L., first lieuts., ordered to report to Lieut.-Col. James D. Glennan, Medical Corps, president of examining board, Army General Hospital, San Francisco, for examination for promotion.

Foster, George B., Jr., lieut., relieved from duty at the Army Medical School, Washington, D. C.; and ordered to Fort Leavenworth, Kan., for duty.

Bourke, James, captain, relieved from duty at Fort Leavenworth, Kan., and ordered to Fort Crockett, Texas, in time to arrive there about March 10, 1911.

Cowles, Calvin D., Jr., and Phillips, Hiram A., first lieuts., ordered to report to Lieut.-Col. Henry P. Birmingham, Medical Corps, president of the examining board, at the Army Medical Museum Building, Washington, D. C., for examination for promotion.

Barber, John R.; Ashford, Mahlon; Huber, Edward G., and Hunt, William L., first lieuts., ordered to report to Major William E. Purviance, Medical Corps, president of the examining board, at Manila, P. I., for examination for promotion.

Schmitter, Ferdinand, captain, ordered to repair to this city for special duty in the laboratory at the Army Medical School for a period not to exceed seven days.

Moncrief, William H., captain, on arrival at San Francisco will proceed to Fort Riley, Kan., for duty.

Le Hardy, Julius C., M.R.C., directed to proceed from Manila, P. I., to San Francisco, March 15, instead of Feb. 15, 1911.

Bierbower, H. C., M.R.C., left Fort Robinson, Neb., en route to Fort Meade, S. Dak., for duty in field with 4th Cavalry.

Johnson, Howard H., captain, left Fort McDowell, Cal., on leave of absence to include Feb. 15, 1911.

Aydelotte, John T., lieut., left Fort Sam Houston, Texas, with troop F and H, 3d Cavalry, for duty in field at Marfa, Texas.

Fox, James S., lieut., ordered to duty with troop L, 3d Cavalry, in field at Samfordyce, Texas.

Anstin, Thomas C.; Napier, Edward L., and Welles, Edward M., Jr., first lieuts., left Army General Hospital, San Francisco, for service in the field on Mexican border.

Kerr, James D., M.R.C., resignation accepted by the President, to take effect Feb. 7, 1911.

Johnson, Howard H., captain, leave of absence extended to and including Feb. 15, 1911.

Williams, Harry B., M.R.C., granted twenty-nine days' leave of absence.

Ireland, M. W., ordered to proceed to Chicago to attend the seventh annual conference on education and legislation of the American Medical Association to be held in that city March 1-3, 1911.

Pulver, Arthur L., M.R.C., granted leave of absence for one month and ten days.

Duncan, William A., captain, relieved from duty at Vancouver Barracks, Wash., and will repair to this city and report for duty at the Field Medical Supply Depot.

Medical Corps, U. S. Navy

Changes during the week ended Feb. 11, 1911.

George C. M., asst.-surgeon, ordered to duty at the naval hospital, Navy Yard, New York.

Sheldon, L., Jr., asst.-surgeon, ordered to duty at the naval hospital, Norfolk, Va.

Randall, J. A., P. A. surgeon, ordered to the naval station, New Orleans.

Ely, C. F., P. A. surgeon, ordered to temporary duty at the naval hospital, Naval Home, Philadelphia.

Brown, H. L., P. A. surgeon, ordered to the navy recruiting station, Los Angeles.

Munger, C. B., P. A. surgeon, detached from the navy recruiting station, Los Angeles, and ordered to the *Yorktown*.

Lumsden, G. P., medical inspector, transferred to the retired list from Feb. 7, 1911.

Haynes, J. P., P. A. surgeon, detached from the naval station, New Orleans, and ordered to the Asiatic station.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Feb. 8, 1911.

Anderson, J. F., P. A. surgeon, directed to proceed to lower Potomac river on special temporary duty.

Bahrenburg, L. P. H., P. A. surgeon, granted one day's leave of absence, Jan. 8, 1911, under paragraph 191, Service Regulations. Granted thirteen days' leave of absence from Jan. 21, 1911, on account of sickness.

Blount, B. B., A. A. surgeon, granted thirty days' leave of absence from Feb. 1, 1911.

Salmon, T. W., P. A. surgeon, granted two months and ten days' leave of absence from Feb. 8, 1911.

Sinclair, A. N., A. A. surgeon, granted one month's leave of absence, with pay, and four months and fifteen days, without pay, from April 1, 1911.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

STATE LEGISLATION ON PUBLIC HEALTH

Since the progress of state legislation was summarized in *THE JOURNAL*, February 4, a number of additional bills have been reported. These are classified by states. The further progress of these bills will be reported in *THE JOURNAL* from time to time.

ARKANSAS

A bill has been introduced to provide for the punishment, by fine or imprisonment, of all those other than regularly licensed physicians who "by any verbal statement, writing, print, or other method, offer or profess to cure or treat any injury, disease or deformity of any human being by any drug, nostrum, manipulation or other expedient." The administration of domestic remedies is exempt, as are also midwives.

CALIFORNIA

A bill has been introduced to authorize the selection, by the state medical society, of 150 members as experts in various lines of medical knowledge, from which list seventy-five shall be selected by the board, acting with the attorney general of the state. This list is to be posted in the office of every county clerk for reference in all litigation or criminal cases. A bill has been introduced to provide that children attending schools may, in place of a vaccination certificate, file either a statement from the parent or guardian that he is conscientiously opposed to vaccination and will not consent to the vaccination of the child, or a certificate from a licensed physician to the effect that vaccination would seriously endanger the life or health of the child.

COLORADO

A bill providing for a state board of medical examiners of nine members has been introduced, also a bill creating an osteopathic board of examiners.

ILLINOIS

The following bills have been introduced in the Illinois legislature:

A bill to enable boards of education in cities over 100,000 to establish and maintain classes and schools for dependent, neglected and delinquent children; a bill to establish and maintain a home for widows, orphans and other dependents of persons losing their lives in hazardous occupations; a bill to regulate the practice of optometry (H. B. 121); a bill to provide for the inspection, licensing and regulation of cold storage warehouses (H. B. 123); a bill to amend the delin-

quent children law (H. B. 124); a bill to regulate the practice of optometry (S. B. 140); a bill for the prevention of cruelty to animals (H. B. 28); a bill to authorize the sterilization of habitual criminals, idiots, feeble-minded, and imbeciles (H. B. 49); a bill to amend the vital statistics law (H. B. 53); a bill to prohibit the establishing and enforcing the tuberculin test for dairy animals by any city or town (H. B. 55); a bill to amend the law regarding the suppression and prevention of contagious diseases among domestic animals (H. B. 56); a bill to provide for the establishment, erection and maintenance of "sanitariums for tuberculous patients (H. B. 57); a bill to provide for the creation of public recreation districts (H. B. 73); a bill to provide for the establishment of a state sanitarium for persons afflicted with tuberculosis (S. B. 5); a bill to amend the law regarding marriages and to require a physician's certificate of health for a license to marry (S. B., 32); a bill to make an appropriation for the visitation and instruction of the adult blind (S. B. 74); a bill to forbid the issuing of policies insuring against accidental bodily injuries (S. B. 84).

The optometry bills introduced in the house and senate are similar to those previously introduced in Illinois and other states. The bill regulating the sterilization of habitual criminals and imbeciles is similar to the law adopted in Indiana and other states. Senate Bill 74, for the visitation and instruction of the adult blind, has been introduced at the request of the Chicago Women's Club. This bill would appropriate \$20,000 for the use of the board of administration and provide for the visitation of the adult blind in their homes for the purpose of instructing them in industrial pursuits and helping to make them self-supporting.

INDIANA

The bill introduced by Senator McCarthy, providing for the medical inspection of school children, passed the senate by a vote of forty to one. The following bills have passed the house: H. B. 57 for the prevention of ophthalmia neonatorum; S. B. 57 to establish a Pasteur Institute.

The following bills have been introduced: A bill to amend the present medical practice act, introduced by Senator Stotsonburg, would give all graduates of approved medical colleges the right to practice without examination. The Board of Medical Registration, as well as the physicians of the state, is strenuously opposing this bill. A bill to amend the law regarding the operation of hospitals; a bill to require the medical inspection of all male applicants for a license to marry; a bill for the prevention of the transmission of venereal diseases, and a bill to regulate the sanitation and ventilation of steam and traction passenger cars and depots.

IOWA

Beside the osteopathic bill and the bill to create a health commission, which have previously been commented on, the following bills have been introduced: a bill to provide for the proper sanitation of barber shops; a bill to regulate cancer hospitals and sanitariums; a bill to regulate itinerant vendors; a bill to require undertakers to report the names of persons dying of tuberculosis and to require the disinfection of premises occupied by infected persons and a bill to require physicians and osteopaths to report all cases of tuberculosis to the secretary of the State Board of Health.

MISSOURI

A bill to regulate the manufacture and sale of oleomargarine, a bill to provide for the medical examination of public school children, a bill to provide for a board of eclectic medical examiners (H. B. 52), and an optometry bill have been introduced. The house committee has reported unfavorably on the optometry bill.

NEBRASKA

A school medical inspection bill, endorsed by the Omaha Women's Club, has been introduced.

NEW HAMPSHIRE

An optometry bill (H. B. 40) has been introduced.

NORTH CAROLINA

A bill to permit physicians to register and practice on presentation of their diplomas, without obtaining a license from the State Board of Examiners, was introduced but has been reported on unfavorably by the house committee.

NORTH DAKOTA

The medical practice act introduced in the house, to place practitioners of all schools under the supervision of a single board, has passed the house and is now in the senate. A bill to provide for a board of control for all state educational, penal and charitable institutions has been introduced in the house.

OHIO

A bill to repeal the vaccination law, a bill to provide that no person suffering from tuberculosis shall be given a license to marry, and a bill to grant local boards of health the power to establish bureaus for the study of tuberculosis in their towns have been introduced.

OKLAHOMA

S. B. 70 would make all records of the State Board of Medical Examiners public records. S. B. 77 would amend the medical practice act, and S. B. 93 the State Board of Health act. S. B. 126 would preserve the purity of the waters of the state, including all streams and springs and all bodies of surface and impounded ground water, whether natural or artificial. Every municipality, private corporation, company, and individual supplying water to the public within the state would be required, within sixty days, to file with the secretary of the State Board of Health a certified copy of the plans of the water works and the source from which their water-supply is derived. All persons, corporations or municipalities supplying water for domestic purposes would have to secure a written permit from the State Board of Health.

OREGON

A bill to give the State Board of Health the powers of the state dairy and food commissioner has been indefinitely postponed. Bills to create a board for the examination of graduate nurses and to extend the powers of the State Board of Medical Examiners have been reported on favorably by the house.

TENNESSEE

A bill to incorporate laws regulating the practice of medicine, and making some amendments therein, has been introduced in both houses. This bill would provide that any person practicing or attempting to practice medicine under the name of any other person or firm would be guilty of a misdemeanor; would extend the term of members of the board from four to six years, and would make graduation from a medical college giving a four years' course a condition for license. A bill has been introduced to require a medical certificate as a condition for the issuing of marriage licenses.

UTAH

An amendment to the medical practice act has been introduced to make the attorney general an ex-officio member of the board and to make improper advertising and the performance of criminal abortions ground for revocation of licenses. An annual tax of \$3.00 on all licensed physicians is also specified, the fund thus collected to be used by the State Board of Medical Examiners to prosecute violators of the law.

WASHINGTON

A bill to give the State Board of Health power to regulate traffic in oysters and other shell-fish has been introduced; a bill to amend the medical practice act, and a bill to provide for a commission to designate certain hospitals and surgeons in each locality who shall attend all injured persons and who shall be paid for their services from a fund furnished by the employer and employees. A bill to provide for a state tuberculosis sanitarium has been defeated. An amendment to the criminal abortion law has been introduced, to provide that women may testify without incriminating themselves.

WISCONSIN

An optometry bill has been introduced. Dr. C. A. Harper, the secretary of the State Board of Health, has introduced a bill to require the state health inspector to inspect hotels, jails, schoolhouses and public buildings, streets, alleys and other places; a bill to require cities to make adequate provision for the care of persons with advanced tuberculosis, and a bill for the prohibition of public drinking-cups in public buildings. An effort is being made to abolish the compulsory tuberculin test for cattle. A bill to provide for a more thorough system for the registration of deaths, a bill to prohibit the publication of the fact that a person has died of tuberculosis, and a bill to require a medical certificate before issuing a license to marry have also been introduced, as well as a bill to increase the tenure of office for health commissioners in cities, towns and villages, to four years.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Third Weekly Meeting

INFECTIONS OCCURRING IN SURGICAL DISEASES AND CONDITIONS
SYMPTOMS OF TOXEMIA, SEPTICEMIA AND PYEMIA

TOXEMIA, SAPREMIA: History of local infection. Onset, fever, pulse, chills, gastrointestinal symptoms, headache, prostration, collapse. Blood-examination. Urine. "Typhoid" cases.

SEPTICEMIA: Intensity of symptoms, similarity to toxemia. Variations in symptoms due to different organisms. Blood changes. Clinical types: 1. Following local infection, gunshot wound, puerperium, trauma, etc. May be mild or severe. 2. Cryptogenetic septicemia; no history of previous infection. May be acute, subacute or chronic; may terminate in pyemia. 3. Due to mixed infection.

PYEMIA: Secondary to septicemia and toxemia. Difference in character and intensity of general symptoms. Symptoms indicating localization of metastatic abscesses; involvement of lung, pleura, cardiovascular system, brain, kidney, joints, eye, etc. Blood-examination. Course of pyemia, terminations.

TREATMENT

SEPTICO-PYEMIA OF VON LEUBE.

PROPHYLACTIC: Asepsis and antisepsis in prevention of infection.

SURGICAL: Removal of focus of infection. Prevent reinfection. Drainage of secondary infections. Production of artificial abscess.

SERUM-THERAPY: Antitoxic serums; bactericidal serums; serums raising resisting power of body or rendering bacteria more susceptible to phagocytes.

GENERAL: Elimination. Stimulation, alcohol, strychnin, quinin. Symptomatic treatment. Rectal or subcutaneous saline injections. Cr  d  s colloidal silver injections.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

ILLINOIS: Coliseum Annex, Chicago, March 2-4. Sec., Dr. James A. Egan, Springfield.

MAINE: Portland, March 14-15. Sec., Dr. F. W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, March 14-16. Sec., Dr. Edwin B. Harvey, Room 159, State House.

WYOMING: Laramie, March 7-9. Sec., Dr. J. B. Tyrrell.

The Conference on Medical Education and Legislation

This joint conference will be held at Chicago, at the Congress Hotel—formerly the Annex—March 1, 2 and 3. On the first day will be held the Seventh Annual Conference of the Council on Medical Education at which, besides the reports of the chairman and secretary, will be the following addresses:

"Entrance Examinations," by Dr. Thomas S. Fiske, Secretary of the College Entrance Examination Board, New York City.

"Subjects Included in the 'Two Years of College Work' Required for Admission to Medical Colleges," by Dr. Charles R. Bardeen, Dean of the School of Medicine of the University of Wisconsin, Madison.

"A Five-Year Medical Course," by Dr. J. George Adami, Professor of Pathology, McGill University, Montreal.

"Equipment and Instruction of the Laboratory Years," by Dr. E. P. Lyon, Dean of St. Louis University School of Medicine, St. Louis, Mo.

"Equipment and Instruction of the Clinical Years," by Dr. George Blumer, Dean and Professor of Medicine of Yale Medical School, New Haven.

"The Educational Function of Hospitals," by Dr. Frank Billings, Dean of Rush Medical College, Chicago.

"Valuation of Credentials," by Dr. Frank B. Hiller, Secretary of the Missouri State Board of Health, Jefferson City.

"The State License Examination," by Dr. Horace G. Norton, Secretary of the New Jersey State Board of Medical Examiners, Trenton.

"Interstate Reciprocity," by Dr. W. T. Gott, Secretary of the Indiana Board of Medical Registration and Examination, Indianapolis

On Wednesday evening, March 1, a special session will be held at which the "State's Responsibility in Medical Education and Public Health Matters" will be discussed. The speakers for the evening and their topics are as follows:

"Standards and Authority"—George Edgar Vincent, Dean of the Faculties of Arts, Literature and Science of the University of Chicago, and President-Elect of the University of Minnesota.

"The Responsibility of State Universities in Public Health Matters"—William L. Bryan, President of Indiana University, Bloomington.

"Professional Education a Duty of the State"—Edmund J. James, President University of Illinois, Urbana, Ill.

A joint conference will be held on the second day to discuss medical practice acts. The following addresses will be given:

"The Importance of the Regulation of Medicine in the Administration of State and Municipal Governments"—Edward J. Brundage, Corporation Counsel, City of Chicago.

"The Attitude of the Judiciary in the Enforcement of Medical Practice Acts"—Judge Jesse A. Baldwin, Appellate Court, Chicago.

"Considerations Which Should Influence Appointments on State Examining Boards"—Hon. A. O. Eberhart, Governor of Minnesota.

"What Should Be the Attitude of the State Toward the Practice of Medicine?"—Dr. M. L. Harris, Chicago.

"Regulation of the Practice of Medicine for the Public Good"—Charles R. Henderson, Professor of Sociology, University of Chicago.

"The Administration of Medical Practice Acts."

(a) "The Administrative Duties of the State Board of Medical Examiners"—Dr. A. B. Brown, Secretary of the State Board of Medical Examiners, Louisiana.

(b) "Medical Prosecutions and Revocation of Licenses"—A. C. Umbreit, Attorney for the Wisconsin State Board of Medical Examiners, Milwaukee.

(c) "The Defense of Medical Practice Acts in the Courts"—James N. Wilkerson, Attorney for the Texas State Board of Medical Examiners, Fort Worth.

(d) "Financing of State Board Work"—Dr. Herbert Harlan, President Maryland State Board of Medical Examiners, Baltimore.

On the third day the Seventh Annual Conference on Medical Legislation will be held. Representatives and members of the National Legislative Council will present reports from the various states regarding the legislative situation in each. Separate reports will be presented by the committees on Carroll memorial, medical expert testimony, optometry, model medical practice, etc. Dr. Henry M. Bracken, secretary of the Minnesota State Board of Health will speak on "The Needs of Public Health Legislation." Dr. Cressy L. Wilbur, chairman, statistician of the Division of Vital Statistics of the Federal Census will speak on "The Progress of Vital Statistic Legislation." Legislative problems will be discussed and plans for the coming year will be outlined.

California December Report

Dr. Charles L. Tisdale, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Los Angeles, December 6-9, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75, and not less than 60 in any one branch. The total number of candidates examined was 95, of whom 60 passed, including 15 osteopaths, and 35 failed, including 13 osteopaths. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas.....	(1908)		75.5
University of California.....	(1910)		83.2
University of Southern California (1906)	75.2; (1909) 87.1, 88; (1910) 84.4.		
College of P. & S., San Francisco.....	(1907)		80.6
California Eclectic Medical College.....	(1910)		78.3
Denver Homeopathic College.....	(1901)		78.7
George Washington University.....	(1910)		77.5
Northwestern University Medical School.....	(1904)		80.6
College of Physicians and Surgeons, Chicago (1897)	78.1; (1905) 83.3; (1909) 76.3; (1910) 83.6.		
American Medical Missionary College... (1902)	76.9; (1909) 83.3		
Rush Medical College..... (1900)	89; (1904) 83.2; (1909) 87.9		
Medical College of Indiana..... (1903)			77.3
State University of Iowa, College of Medicine (1885)	80.1; (1909) 79.6.		
Harvard University Medical School..... (1908)			80
Tufts College Medical School..... (1903)			81.3
Detroit College of Medicine..... (1901)			76.2
University of Michigan, Dept. of Med. and Surg., (1892)	75.7; (1897) 86.4; (1901) 87.4.		
Hamline University..... (1907)			76.5
University Medical College, Kansas City..... (1905)			77.4
Omaha Medical College..... (1902)			80.9
Columbia University, College of Physicians and Surgeons (1894)	84.4; (1910) 84.3, 89.9.		
New York Medical College and Hosp. for Women. (1892)			82.9
University of Buffalo..... (1902)			77.4
Syracuse University..... (1903)			75.1
Jefferson Medical College..... (1884)			86.4
Hahnemann Med. Coll. and Hosp., Philadelphia.. (1909)			75.5
Pulte Medical College..... (1891)			80.1
Starling Medical College..... (1900)			82.5
Cleveland Medical College, Homeopathic*..... (1896)			87
Cleveland Homeopathic Medical College..... (1902)			81.9
McGill University, Montreal, Quebec..... (1904)			75

FAILED

Coll. of P. and S., Los Angeles.... (1906)	67.7; (1908)	71
Cooper Medical College..... (1910)		69, 64.9
College of Physicians and Surgeons, San Francisco (1906)	66.7; (1909) 73.2; (1910) 73.4.	
George Washington University..... (1906)		70.9
Hahnemann Medical College and Hospital, Chicago. (1876)		80.3
Rush Medical College..... (1883)	75; (1902)	70.9
University of Louisville..... (1892)		73.4
Kentucky School of Medicine..... (1906)		66.1
Louisville Medical College..... (1895)		79.1
Coll. of Phys. and Surg., Baltimore..... (1888)		64.6
Syracuse University..... (1893)		75.8
Medical College of Ohio..... (1883)		79.9
Pulte Medical College..... (1894)		56.5
Miami Medical College..... (1908)		71.8
Western Reserve University..... (1879)		49
Eclectic Medical College, Cincinnati..... (1885)		76.2
University of Nashville..... (1902)		71.7

* Joined Cleveland University of Medicine and Surgery to form Cleveland Homeopathic Medical College in 1898.

Nebraska November Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Nov. 8-10, 1910. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. Nineteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Creighton Medical College.....	(1910)	76.9, 82.7, 83.5	
University of Nebraska.....	(1910)		89.7

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago....	(1904)	Illinois
Northwestern University Medical School.....	(1900)	Illinois
Rush Medical College (1888) Iowa; (1909)	(1910)	Illinois
American Medical Missionary College.....	(1906)	Illinois
Hering Medical College, Chicago.....	(1908)	Kansas
State University of Iowa, Coll. of Med....	(1904) (1910)	Iowa
Keokuk Medical College.....	(1898)	Iowa
Kansas Medical College.....	(1905)	Kansas
Louisville Medical College.....	(1894)	Wisconsin
College of P. and S., Baltimore.....	(1905)	W. Virginia
University of Michigan, Homeopathic College..	(1882)	Michigan
Kansas City Hahnemann Medical College.....	(1905)	Arkansas
Ensworth Medical College.....	(1893)	Missouri
University Medical College, Kansas City.....	(1900)	Kansas
Jefferson Medical College.....	(1903)	Kansas
University of Rome, Italy.....	(1906)	Kansas

Book Notices

A MANUAL OF DISSECTION AND PRACTICAL ANATOMY OF HEAD AND NECK. For Students, Surgeons and Specialists. By Hubertus J. H. Hoeve, M.D., Professor of Anatomy in the Medical and Dental College of Drake University. Cloth. Price, \$5. Pp. 598, with illustrations. H. J. H. Hoeve, Des Moines, Iowa, 1910.

In his preface the author says, "I came to the conclusion that the entire macroscopic anatomy for the dissecting-room and also for surgical purposes should be arranged in natural outline form, and consequently I have prepared this volume on the head and neck." The book contains 600 pages slightly smaller than those in Gray's "Anatomy," with the subject-matter arranged in typical outline form, with headings, sub-headings and further divisions. As there is considerable descriptive text, and as the outline form is used in laying out the matter, the full space is occupied with this one region of the body. To put the "entire macroscopic anatomy" of a region such as has been selected into an outline, is a work that might appal one less hardy than the author. As to the real test of its merit the words of the author may be further quoted as follows: "To what extent I have failed in writing the much-talked-of and badly needed ideal dissector remains to be judged by my professional confrères."

The author is evidently an earnest advocate of the outline method with thoroughness in all its details. The extent to which this method expands the text is realized when we observe that two full pages are devoted to the omohyoid muscle and more than a page to the frontal artery and vein. Different casts of mind naturally vary the point of view, so that things are seen differently by different observers. So it is with outlines: while the frequent breaks in the description by the interpolation of headings, subheadings and other divisions disturbing consecutive reading are results naturally to be expected and willingly accepted in the usual synoptical treatment of a subject where the simple divisions amply suffice to suggest the rest of the matter under review, it becomes a matter about which there is much less likely to be a unanimity of opinion when besides this all the details are exhaustively filled in. Much that is valuable and difficult of access elsewhere is likely to remain hidden in the text on account of the tediousness of unraveling the outline.

The fifty-one half-tone illustrations are about equally divided between photographic reproductions and artists' sketches of original specimens. Although suggestive of interesting and instructive original specimens, the reproductions are not the best, and leave much to be desired. Thirty-nine of the illustrations are devoted to the brain, three to sections of the head, three to sections of the larynx and pharynx, three to sketches of the orbit, and one each to the mastoid region, the veins of the diploe, and the skull with relation to the ventricles of the brain. With due respect for the author's pride in presenting none but original illustrations, one cannot help noting the absence of the beautiful figures of dissected regions that are so characteristic of the usual works of this class, and which more than any other single feature serve to stimulate the student to neat and thorough work.

THE PHYSIOLOGY OF REPRODUCTION. By Francis H. A. Marshall, M.A., Fellow of Christ's College, Cambridge. With a Preface by Prof. E. A. Schäfer, F.R.S., and Contributions by William Cramer, Ph.D., and James Lochhead, M.D. Cloth. Price, \$6. Pp. 706, with illustrations. New York: Longmans, Green & Co., 1910.

Marshall presents this subject in the most exhaustive treatise that has appeared for some time. The earlier chapter-heads in order are: "The Breeding Season," "The Estrous Cycle in the Mammalia," "The Changes that Occur in the Non-Pregnant Uterus During the Estrous Cycle," "Changes in the Ovary," "Spermatogenesis—Insemination," "Fertilization," "The Accessory Reproductive Organs," "The Biochemistry of the Sexual Organs," and "The Testicle and the Ovary as Organs of Internal Secretion." In this last-named chapter the author makes a most valuable contribution to the literature on the subject. He gives in detail the results of the experimental work of Brown-Séquard, Poehl, Zoth, Pregel, and Bonin and Ancel, Shattock and Seligmann, Boruttau, Ribbert, Carmichael and Marshall, Knauer, Halban, Morris, Glass, Dudley, Essen-Möller, Graefe, Flatau, Kleinhaus and Schenk, Dubrenil and Regaud, Lane-Clayton, Paton, Henderson, Soli, Fichera, Starling and many others. Summing up his fifty pages of

review, Marshall says: "The fact that the testis is an organ of internal secretion seems now to be definitely proved. This secretion is probably formed throughout the entire reproductive period of an animal's life; but, in those animals which experience a periodic rut, it is no doubt at this season that the testicular hormone is produced in greatest abundance."

What the author said about the testes might with equal truth have been said about the ovaries. In fact, it may be taken as positively demonstrated that these glands through their internal secretion profoundly influence development throughout the reproductive period and especially during adolescence.

Other chapters in the book concern fetal nutrition and the changes in the maternal organism during pregnancy; the innervation of the female generative organs; lactation; fertility; the factors which determine sex. This last chapter, next to that on the internal secretion from the sex glands, will be of most interest to the practitioner, as Marshall devotes considerable space to the consideration of various theories with accumulated data and evidences pro and con.

The book is well illustrated; some of the illustrations are in colors, many of them new and all of them valuable.

While Marshall has covered ground frequently covered in the preliminary chapters of works on obstetrics or in the final chapters on physiologies, the survey is incomparably more complete than one will find in any of the works mentioned, and will be valued highly by those students of obstetrics who wish to familiarize themselves with the latest and best on this subject.

A MANUAL OF PHYSIOLOGY. With Practical Exercises. By G. N. Stewart, M.D., Professor of Experimental Medicine in Western Reserve University, Cleveland. Sixth Edition. Cloth. Price, \$5 net. Pp. 1064, with 450 illustrations. New York: William Wood & Co., 1910.

The fact that this is the sixth edition is ample proof of the popularity of Stewart's "Physiology." And the fact that these six editions have appeared at intervals during fifteen years is proof of the book's worth; it has worn well. This edition is a little larger than the others, owing to the addition of new matter; but the volume is not too bulky to be held for comfortable reading.

Mention of the good qualities has been often made, and need not be here repeated; but one cannot refrain from commending the clear style that makes abstruse subjects, which easily become monotonously dull, plain and interesting. Sometimes an illustrative comparison strikes one as a little odd, such, for instance, as this concerning the heart: "Like a musical box devised to play a series of melodies in a fixed order, and from which a particular tune cannot be obtained till those preceding it have been run through, the heart in some way or other is arranged, in the presence of competing impulses from its extrinsic nerves, to play the tune of inhibition before the time of augmentation" (p. 146). Yet we would not have it changed, for the comparison is apt and the student will remember the fact because put in this striking way. There is a remarkably equable distribution of space allotted to different topics and an evenness of treatment that is too often missed in composite works by different writers. The details of experiments are plainly given. And there is a most admirable condensation without sacrifice of clearness and of needful detail which shows the hand of the investigator who at the same time can teach and explain. The author rarely permits himself to run into wearisome argument; there is almost nothing of the polemic. His own views on debatable questions are always definitely stated. Where no decision has as yet been reached this is frankly acknowledged. His judicial attitude is well brought out by his excellent discussion of the myogenic and neurogenic theories as to the heart-beat. While favoring the latter theory in many respects, he takes a neutral position, for on many of these points, he says, the proof is not yet convincing.

We wish that he had departed a little more from the original plan and had cited authorities a little more freely. Medical students would be incited often to consult originals if instead of being told that "it has been recently shown," they were given as well the author and reference. We realize the impossibility of loading up the pages with all the authorities consulted and the inadvisability, as well, of using such a

mass of names; but a little breaking of the rule now and then, and the insertion of a bibliographic reference, especially when it concerns some classic article or some really worthy contribution, would make the work a still greater help to the student. As it is, this work is certainly one of the very best text-books on physiology for the undergraduate and a reliable reference-book for the practitioner.

LEHRBUCH DER UROLOGIE, MIT EINSCHLUSS DER MÄNNLICHEN SEXUALERKRANKUNGEN. Von Dr. Leopold Casper, Universitätsprofessor in Berlin. Paper. Price, 15 marks. Pp. 575, with 221 illustrations. Berlin: Urban and Schwarzenberg, 1910.

The first edition of Casper's well-known book has been translated into English. This, the second German edition, is an enlargement and improvement of the first edition.

The subject-matter is handled in two parts. In the general part is considered the anatomy, physiology and examination of the urogenital tract. The physical and chemical examination of the urine is given so briefly that the subjects could well have been omitted. Since the author has written a work on cystoscopy, it is but natural that he should treat that subject rather briefly here. The subject suffers, also, by being poorly illustrated. The chapter on urethroscopy would be more valuable if the illustrations were not so poor and if it included a consideration of the use of the Goldschmidt urethroscope. On the whole, the chapter on diseases of the urethra and penis is good: we must, however, differ from the author when he says that non-gonorrheic urethritis is very rare. We were surprised and disappointed to find no mention made of erosive or gangrenous balanitis, a disease which produces such fearful mutilations of the penis and which is surprisingly frequent when one is familiar with the clinical picture. The chapter on urethral stricture covers the subject satisfactorily and we are pleased to observe that the author condemns the operation of external urethrotomy except in selected cases.

Diseases of the bladder are covered fully, and lithotripsy is advised in preference to the more radical operation. Vaccine therapy in urology deserves rather more extensive consideration than it receives. The chapter on the kidneys would be improved by omitting the consideration of nephritis and enlarging on the subjects of nephrolithiasis and tumors. Since the author is a pioneer in the work, naturally a good deal of space is devoted to the functional diagnosis of renal affections. This should appeal especially to American surgeons, since this subject, until recently, has been somewhat neglected in this country.

The subject of tuberculosis of the genito-urinary system is well covered in the chapters devoted to the various organs. The author believes in the radical treatment of tuberculosis of the kidney. Probably the best chapter in the book is that on disease of the prostate, in which Young's operation for prostatectomy was given the preference.

Considering their frequency, the functional disturbances of the male sexual organs are considered somewhat too briefly.

CHRONICLES OF PHARMACY. By A. C. Wootton. In two volumes. Vols. I and II. Cloth. Price, \$6.50 net. Pp. 760, with illustrations. New York: The Macmillan Co., 1910.

These two volumes are filled with curious and interesting information, the result of an immense amount of painstaking labor. The history of pharmacy is traced from its mythical beginnings to the present time. Through a great part of this course it is almost identical with the history of medicine, although Wootton has paid special attention to the drugs mentioned by ancient writers. Following a chapter dealing with the myths of pharmacy, the author gives in succession what is known of pharmacy among the ancient Hebrews, Egyptians, Greeks and Romans. The story is traced through the Arabs to the middle ages, when the account becomes more definite and truly historical. An interesting chapter is the one devoted to the progress of pharmacy in Great Britain. Succeeding chapters deal with "Dogmas and Delusions," "Masters in Pharmacy," "Chemical Contributions," and other topics, such as "Poisons in History," "Noted Nostrums," etc.

The author has made an interesting and instructive book. His death before the publication of his work is deeply to be regretted. The volumes are attractively bound and illustrated by a considerable number of portraits and pictures of statues and other subjects related to pharmacy.

CYSTOSCOPY AS ADJUVANT IN SURGERY. With an Atlas of Cystoscopic Views and Concomitant Text for Physicians and Students. By Staff-Surgeon Dr. O. Rumpel, Lecturer in Surgery at the University of Berlin. Only authorized English translation by P. W. Shedd, M.D., New York. Half leather. Price, \$8.50. Pp. 131, with 107 illustrations. New York: Rebman Co., (1910).

The first fifty-nine pages of this book are devoted to the text, the subject being considered under "Congenital Anomalies," "Cystitis," "Tumors," "Hypertrophy of the Prostate," "Concretions and Foreign Bodies," and "Testing Renal Function." In the text are twenty-two illustrations. The text is rather brief and often simply explanatory of the plates which follow. The testing of renal function receives scant attention, and hence the chapter on that subject is quite unsatisfactory. Following the text are thirty-six plates in color, showing eighty-five views of various conditions found in the bladder. They are all, of course, cystoscopic views, and the outline and coloring are very good, but they are all pasted on the pages and at times without regard to "up" and "down" of the picture, so that they are often confusing in this particular. Opposite each plate is a description of the figures and frequently a short history of the case.

HAY FEVER AND PAROXYSMAL SNEEZING (VASOMOTOR RHINITIS). By Eugene S. Yonge, M.D., Physician to the Manchester Hospital for Consumption and Diseases of the Throat. Cloth. Price, \$2 net. Pp. 150, with illustrations. New York: William Wood & Co., 1910.

Under the title of "hay-fever" the author has described three separate conditions—hay-fever (hay-asthma), paroxysmal sneezing (vasomotor rhinitis) and idiopathic rhinorrhea (nasal hydrorrhea). The first he distinguishes by ascribing as its chief etiologic factor the pollen of plants; the second depends more largely on neuroses and pathologic conditions of the upper respiratory space; and the last he attributes to neurotic condition more largely, to chronic sinus diseases or to trauma. The constitutional states as predisposing factors overlap in the three conditions. The subject is treated historically and from the standpoint of the different theories and hypotheses. The frequent association of asthmatic symptoms is kept in view, but nothing is said about the theory of anaphylaxis as a factor. Not much that is new is advanced in the treatment. The work is an interesting review of the subject.

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By Harry S. Crossen, M.D., Professor of Clinical Gynecology, Washington University. Second Edition. Cloth. Price, \$6. Pp. 1025, with 744 illustrations. St. Louis: C. V. Mosby Co., 1910.

The second edition of this work has been considerably expanded in the text, and numerous original illustrations added, which further elucidate diagnostic methods. Among the subjects given added attention are pelvic inflammation and tubal pregnancy. The index has also been amplified, but laboratory methods, except in the instance of gonorrhea, are not included, a matter which was mentioned in our extended review of the first edition. Surgical treatment is still subordinated. The elaborate attention given to diagnosis, and to treatment other than surgical, makes this a good work for the student and general practitioner.

DIE FAECES DES SÄUGLINGS UND DES KINDES. Die Bedeutung und Technik ihrer Untersuchung. Von Dr. Adolf F. Hecht, Kinderarzt in Wien. Mit Einem Vorwort von Dr. Th. Escherich. Paper. Price, 8 marks. Pp. 186. Vienna: Urban & Schwarzenberg (American Agents, New York: Rebman Co.), 1910.

This volume is the result of seven years of careful observation and study of this important subject in Escherich's clinic in Vienna. The subject is treated exhaustively and the result is equally valuable as a book of reference for the pediatrician or the general practitioner, or as a guide to the investigator. The author is fortunately a clinician as well as a laboratory investigator. One can freely endorse Escherich's warm commendation of the book to any one who is interested in this increasingly important subject.

DIFFERENTIAL-DIAGNOSTISCHE TABELLEN DER INNEREN KRANKHEITEN. Von J. Clemach, in Wien. Paper. Pp. 21. Price, 3 marks. Munich: J. F. Lehmanns Verlag, 1910.

This little volume contains twenty-one tables in which the symptoms and physical findings of allied diseases are tabulated in parallel columns. It has the faults and merits inherent in all such treatises. The clinician finds the symptoms stated too arbitrarily and dogmatically to be of value. The student who must prepare for examination, however, will appreciate the condensed summaries and the convenient arrangement of the data.

Medicolegal

Liability for Professional Service, Board and Nursing for Wife at Hospital

The Second Appellate Division of the Supreme Court of New York in the case of Thrall Hospital vs. Cecelia T. Caren (124 N. Y. S., 1038) reverses a judgment rendered for the plaintiff, and grants a new trial. It says that the action was to recovery for board, nursing, etc., received by the defendant. It appeared that while her husband was sick in the hospital she was removed to it for an operation for appendicitis. Her attending physician made the arrangements for her admission to the hospital through a physician connected with the institution. She was too ill to make provision for herself, and did not. Indeed, her illness was so severe that the proposal to present a bill to her was postponed and the charges were not communicated to her until her departure, when she said she would send a check for them. Thereafter a bill for the amount was presented to her husband, then one was sent to her with a letter requesting payment, and this not receiving attention, a bill was later presented to the husband's estate. Thus the case was one where a woman, whose husband was in the hospital, and who was herself too ill to contract, was received by it pursuant to arrangements made by the physician in attendance cooperating with a physician connected with the hospital, and on discharge promised to send a check for the bill, which was presented to her husband and to his estate, and intermediate such two presentations to herself, without attention by her. She did not engage the physician, so far as appeared. She did not promise to pay before the service was rendered. Did the law imply a promise? The answer is:

The defendant seemed to have had a home. Her physician advised her that she should go to the hospital, and made the arrangement through a physician connected with the hospital. A physician's service is a necessity that should be furnished by the husband, and presumptively was in this case, either through himself, or her implied authority to call a physician to attend a member of the family. The physician so acting for the husband advised her to go to the hospital, and she went accordingly. So the professional service was necessarily rendered in the hospital, and for it the husband was primarily liable. The board and nursing were incidental to such service. It might be that the husband elsewhere supplied a home and sustenance for her; but the room, board and attendance at the hospital were for a different purpose and inseparable from her treatment. In this view the plaintiff, thoroughly informed, should have regarded the husband as its debtor, unless the defendant expressly engaged the service, and thereby became personally liable. But there was not the slightest evidence that she did or was able to do that. Indeed, the plaintiff carefully refrained from broaching the subject until the time of her departure, when the defendant promised to send a check. Such statement did not cast the obligation on her. A wife does not become the principal debtor, or surety for her husband's debt, by promising to send a check for it, even if her own check is indicated.

Duties of Carriers to Sick Passengers and When Not Liable for Unusual Pain

The Supreme Court of Georgia says, in *Central of Georgia Railway Co. vs. Madden* (69 S. E. R., 165), that it is not one of the ordinary undertakings of a carrier of passengers to furnish nurses or medical attention. This idea has been expressed by saying that the carrier does not conduct a hospital. If one who is sick, with knowledge of the fact, gets aboard a train, he cannot complain that he suffers pain because of such sickness, or that the ordinary and necessary motion of the train increases his pain, without negligence on the part of the carrier; or that he lacks medical attention or nursing, with which he has not provided himself, and which the carrier has not agreed to provide for him. Nevertheless, a carrier of passengers does not deal with the strong and well and the vigorous alone; and a condition may arise by reason of the sickness of a passenger on its trains which will

create an emergency imposing on the carrier the duty of dealing with the passenger in accordance with the situation thus arising.

If it should be ascertained that a passenger was suffering with small-pox, the carrier not only might cause him to leave the train before arriving at the destination pointed out in his ticket, but, under its duty for the protection of its other passengers, it might become necessary to compel him to do so. So, also, if a passenger should have a ticket for a journey of 1,000 miles, and after he had been carried 100 miles it should be ascertained by the conductor of the train that such a passenger was in a dying condition, it could hardly be successfully urged that the agents of the carrier could wholly ignore this situation and allow the man to die, without opportunity for obtaining assistance or attention, merely because he had not reached the destination pointed out in his ticket. It will thus be seen that circumstances and emergencies may raise a duty on the part of the carrier to afford a passenger a reasonable opportunity to leave the train and to obtain assistance before reaching the destination originally intended.

So if a passenger on a railway train becomes ill in transit, and this is known to the servants of the carrier in charge of such train, or is so apparent that they are charged with knowledge of it, it is their duty to give him or her such care and protection beyond that demanded under ordinary circumstances as is reasonably practicable with the facilities at hand and consistent with the safe and proper conduct of the business and the safety and comfort of the other passengers.

More particularly, the court holds here that where a female plaintiff contended, and introduced evidence tending to prove, that she became ill while on board a passenger train, and that the carrier was negligent in failing, on request, to afford her opportunity to leave the train in order to procure assistance and medical attention, and in failing to assist her in leaving it after knowledge of her condition, but that she succeeded in getting off, though suffering extreme pain and about to be delivered of a child, it was not error to refuse to charge the jury that, if they believed she was able to leave the train without the assistance of the conductor, she would not be entitled to recover damages.

But it was error to charge that "the defendant would not in any event be responsible for such pain as she (the plaintiff) would have suffered on account of the birth of a child. For pains incident to childbirth, if no more, if not unusual pain, you should find for the defendant." That implied a necessary right to recover for unusual pain; but the mere fact that a woman under such circumstances may have suffered more than usual pain would not entitle her to recover damages. If there could be a recovery, it must be for that which resulted from a want of due care on the part of the carrier or its agents, while there may have been a premature delivery, and unusual pain, caused by the ordinary motion of the train, without negligence or liability on the part of the defendant.

Society Proceedings

COMING MEETINGS

American Medical Association: Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.
Association of American Medical Colleges, Chicago, February 27-28
Medical Society of the Missouri Valley, St. Joseph, Mo., March 16-18.
Natl. Confed. of State Med. Exam. and Licg. Bds., Chicago, Feb. 28.

NORTH CENTRAL SECTION OF THE AMERICAN UROLOGICAL ASSOCIATION

Meeting held in Chicago, Jan. 5, 1911

DR. R. H. HERBST, President of the Chicago Urological Society, in the Chair

Position Drainage in Suprapubic Prostatectomy

DR. HENRY J. SCHERCK, St. Louis: The principal objection to the ordinary form of drainage, either siphon or suction, is that it does not completely empty the bladder of decomposed or septic urine, and allows it to become absorbed in a freshly wounded bladder and space of Retzius. The abdominal

position does not allow the septic material to remain in contact with these surfaces, and this minimizes the chances of absorption.

DISCUSSION

DR. L. W. BREMERMAN, Chicago: I can drain the bladder suprapubically or perineally by automatic interrupted siphonage. During the first twenty-four hours following suprapubic prostatectomy the bladder can be emptied every five minutes, keeping it dry and keeping the dressing on the abdomen practically dry and making the patient comfortable.

DR. GUSTAV KOLISCHER, Chicago: The prone position was used in various conditions years ago, and in spite of it, many patients developed hypostatic pneumonia. The real dangers following suprapubic prostatectomy or any suprapubic operation are postoperative hemorrhage and infection around the bladder.

DR. E. G. MARK, Kansas City: The things to look after following suprapubic operation of any kind are hemorrhage, infection or infiltration into the abdominal wall or perivesical tissues, and hypostatic pneumonia. I am convinced that position has a great deal to do with the development of hypostatic pneumonia.

DR. R. B. F. GRADWOHL, St. Louis: The method of drainage described by Dr. Scherek is admirable in respect to the prevention of hypostatic pneumonia.

DR. ARTHUR DEAN BEVAN, Chicago: I take a tube about the size of the index finger, measuring it accurately, so that it will project $\frac{3}{4}$ of an inch into the bladder, then I take a fine catgut suture and introduce it into the suprapubic wound, stitching both above and below the tube. It almost invariably requires but a single suture above and a single suture below the tube. This suture passes through, first, the bladder wall, and second, takes a good bite of the tube and goes through the opposite wall, and is then tied. In the space between the bladder and symphysis we tuck in a small cigarette drain with iodoform gauze, projecting beyond the gutta percha.

Genital Tuberculosis

DR. F. W. ROBBINS, Detroit: In only two of twenty cases of genital tuberculosis was it possible to trace a relationship between tuberculous epididymitis and a previous gonorrhea. In neither of these patients was the tubercle bacillus found, and the diagnosis of tuberculosis may well be questioned. Rarely does genital tuberculosis follow venereal disease. About 60 per cent. of cases of genital tuberculosis are a part of the general tuberculous infection. Occasionally the disease may be so located in the external genitals as to make radical operation wise, but more often the disease of the external organ is associated with that of the prostate and vesicles, even when the bladder and kidneys are healthy. It is seldom good practice to do the extensive operation recently described by Whiteside.

DISCUSSION

DR. HUGH CABOT, Boston: I have never seen a case which occurred in such a way as to suggest that gonorrhea was the cause of the subsequent tuberculosis.

DR. D. N. EISENDRATH, Chicago: In two cases I saw there was a direct relation between gonorrhea and tuberculosis. In both cases a preceding gonorrhea had seemingly furnished the ground for the localization of the tubercle bacillus. One patient had a greenish discharge containing gonococci, and enlargement of both epididymes. The other patient had an abscess which ruptured through the scrotum. Gonococci were found in the pus. I advised antigonorrheal treatment, and it was instituted for two months without benefit. We examined the pus discharge for tubercle bacilli and found a large number of them. The whole course lasted about a year. The patient died from uremia. Autopsy showed extensive tuberculosis, a mixed infection where we had removed the epididymis, and in the kidneys, also showing gonococci, tubercle bacilli in the kidneys, pus, and a stone in the kidney.

DR. R. H. HERBST, Chicago: A man had a large nodule in the upper pole of the epididymis, the size of an English walnut, in the region of the external ring, and painful, two nodules in the prostate, had frequency of urination. He was put on tuberculin. The nodule at the external ring and the

nodules in the prostate disappeared, as well as the frequency of urination, one week after treatment. He still has a small nodule in the upper pole of the epididymis. Tuberculin, if used properly, is valuable, and should be used in almost every case.

DR. G. FRANK LYDSTON, Chicago: It is not an easy matter to prove the association between gonorrheal infection and genital tuberculosis. A large majority of cases of genital tuberculosis have been preceded by gonorrhea. If it is true that gonorrheal infection reduces resistance and does not predispose to tuberculosis, then we have a rule that differs from all other rules with reference to tuberculosis. An individual with a lowering of the power of resistance in the mucosa, other things being equal, is particularly susceptible to infection by the tubercle bacillus. The chief argument against the relation of gonorrhea to tuberculosis of the urogenital tract was missed altogether by the opponents of that theory, and that is that infection, as a rule, is descending, coming from the kidney, and from the substance of the kidney rather than from the pelvis, excepting secondarily. Gonorrheal infection of the kidney is relatively exceptional, as contrasted with the sum total of cases of gonorrhea.

A Case of Air Embolus Occurring During Operation Under Air-Inflation Urethroscopy

DR. ERNEST G. MARK, Kansas City, Mo., read a paper with the above title. It was published in THE JOURNAL, Feb. 11, 1911, page 419.

Local Paresis of the Urinary Bladder

DR. GUSTAV KOLISCHER and DR. HARRY KRAUS, Chicago: Certain cases of paresis of the bladder are caused by edema of the bladder wall. This edema may be produced by gross mechanical interference with the circulation by the impaction of tumors, or by inflammatory changes in the adjacent organs. That the bladder is paretic is shown by the fact that catheterization alone does not lead to a satisfactory emptying of the bladder, but that outside pressure has to be resorted to in order to express all the urine. That the edema of the detrusor is the cause of the vesical paresis is proved (1) by the cystoscopic findings; (2) by the palpatory findings after the bladder was drained; (3) that there are no disturbances of the central nervous system to be found; (4) that this bladder paresis disappears without any special treatment after the factors that interfere with the circulation are removed.

The Caput Epididymis an Excretory Organ

DR. WILLIAM T. BELFIELD, Chicago: The head of the epididymis is a part of the middle kidney, which functionates as a kidney in frogs and fishes, but is superseded in man by the permanent kidney. The efferent tubules constituting the head of the epididymis are the convoluted tubules of this early kidney. That they are secretory organs is indicated by the motion exhibited on traversing these tubules by the previously motionless spermatozoa. Their excretory function is indicated by the infection of these tubules with various organisms derived from the blood, e. g., those of tuberculosis, syphilis, typhoid, and the colon bacilli. These infections may extend along the genital tract to the prostatic urethra. Until recently, all infections of the kidney were assumed to ascend from the bladder. It is now known that many infections of the bladder descend from the kidney. Similarly we have been accustomed to regard all infections of the genital duct as ascending from the deep urethra; but must realize that in certain cases these infections begin in the convoluted tubules (head) of the epididymis and descend to the vesicles and deep urethra, there being a complete analogy between the second kidney (caput epididymis) and its duct on the one hand, and the third (permanent) kidney and its duct on the other. Hence, to limit treatment of all genital duct infections to the prostate and vesicles is as irrational as to limit treatment of all urinary infections to the bladder.

Other papers read were "Diagnosis in Advanced Cases of Renal Tuberculosis," by Dr. H. Cabot, Boston; "Salvarsan in Syphilis," by Dr. C. Wagner, Chicago; "Operation Cystoscopy," by Dr. W. N. Senn, Chicago.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

February 4

- 1 *Electrocardiograms and Their Significance. T. E. Satterthwaite, New York.
- 2 *Use of Electricity in Chronic Disorders of the Stomach. L. H. Levy, New Haven, Conn., and J. G. Wells, New York.
- 3 Direct Transfusion. F. D. Gray, New York.
- 4 *Percussion of the Kidneys. O. Lerch, New Orleans.
- 5 Keratitis Ex Acne Rosacea. W. B. Weidler, New York.
- 6 Recognition and Treatment of Gonorrheal Urethritis and Cystitis in Women. W. E. Dannreuther, New York.
- 7 Clinical Value of Blood-Pressure Studies. F. A. Faught, Philadelphia.

1. **Electrocardiograms.**—The Einthoven electrocardiographic machine is described by Satterthwaite. He says that the sensational statements which have appeared in the public journals as to the utility of the instrument must be received with much caution. The electrocardiogram does not as yet of itself distinguish uniformly functional from organic heart diseases; neither can the instrument dispense with the personal examination of the patient. Hence, a complete diagnosis cannot be made by the instrument when the patient and the physician are far apart. Strictly speaking, Einthoven has not inaugurated a new method; he has utilized the photographic method of Marey, and the string galvanometer of Ader, while the credit of the completed instrument is due to Edelmann. Einthoven has, however, given close study to the method with the perfected instrument, and he is, therefore, entitled, more than any other man, to have electrocardiography associated with his name. The instrument is capable of showing the time and force of action of ventricles and auricles; notes lack of transmission; and demonstrates ventricular and auricular extrasystoles more clearly than any other method. It is certainly useful in various forms of arrhythmias, particularly when there is more or less complete auriculo-ventricular dissociation. At present, however, the initial cost of the Einthoven machine, and the expense connected with operating and maintaining it, will be a bar to its general use, except in the larger hospitals or research laboratories.

2. **Electricity in Chronic Disorders of the Stomach.**—Levy and Wells advocate the use of electricity in treatment of most chronic diseases of the stomach, which have not responded to the regular medicinal methods of treatment and diet.

4. **Percussion of the Kidneys.**—Lerch uses the drop stroke in percussion instead of the hammer stroke. He uses an ivory pleximeter and a hammer with rubber-covered head. By the drop stroke he eliminates the personal factor in percussion and gets more accurate results. He can map out accurately any of the internal organs by this method. The kidneys may be mapped out in the normal position and when displaced. The author has studied his method on the cadaver, and states that one may determine by it whether both kidneys are affected in Bright's disease, and the increase in bulk of the organs.

Boston Medical and Surgical Journal

February 2

- 8 *Reflexes in Surgical Diagnosis. R. T. Morris, New York.
- 9 Disturbances Dependent on Eye-Strain. E. M. Alger, New York.
- 10 *Reflexes and Reflex Neuroses from the Upper Air Tract. W. S. Bryant, New York.
- 11 *Reflex Disturbances Referable to the Ear. J. R. Page, New York.
- 12 What Is the Meaning of Reflex? E. D. Fisher, New York.
- 13 Reflex Symptoms and Disease of the Nervous System. W. M. Leszynsky, New York.
- 14 *Intravenous Use of Cocain. P. W. Harrison, Boston.
- 15 Surgical Treatment of Gonorrheal-Epididymitis. G. G. Smith, Boston.
- 16 A New Tonsil Knife. O. A. Lothrop, Boston.

8. **Reflexes in Surgical Diagnosis.**—Morris claims that many cases of neuralgia, treated medically, belong distinctly in the surgical class. Lumbago, or neuralgia of the sciatic nerve, often is due to an enlarged prostate gland, distended seminal vesicles, pelvic adhesions and to septic or mechanical disturbance of the uterus and adnexa. Cases of trigeminal neuralgia are commonly treated on medical diagnosis alone,

and patients often say that they have not even been questioned, by neurologists of standing, relative to peripheral irritations. Morris recently operated on a patient who had suffered intensely from trigeminal neuralgia, and who had been given alcohol injections by a most competent surgeon interested in that subject, but who had not examined the pelvis at all. So intense was the woman's suffering, that at the time of the last alcohol injection, she prepared a fatal dose of morphin in a glass of water to be taken just before her anesthesia. She wished to commit suicide but to avoid disgrace to the family by having it appear that she had died from the influence of the anesthetic. The reason why she did not take the dose was that at the last moment the anesthetist refused to allow her the glass of water. When she came under Morris' care, a little later, and a large ovarian cyst was removed, the neuralgia disappeared promptly, excepting for an occasional twinge of the supra-orbital nerve at times when the barometer is low. In this case the ovarian cyst was the precipitating factor in a patient, no doubt, predisposed to trigeminal neuralgia. In another case, a woman had suffered terribly from "neurology" as she put it. In this case, Morris excised a portion of the inferior dental nerve, giving relief for about a year. On the return of the neuralgia, he sent her to a competent ophthalmologist to determine if eyestrain could be a peripheral factor in the case. The neuralgia was apparently cured permanently by correction of eye muscle imbalance.

10. **Reflexes and Reflex Neuroses from the Upper Air Tract.**—Bryant shows that the reflexes and reflex neuroses emanating from the pharynx in number and significance are second only to those arising from the nose.

11. **Reflex Disturbances Referable to the Ear.**—A plug of impacted cerumen, says Page, has been known to produce, through its irritation of the external auditory canal, its interference with the pressure equilibrium of the middle ear, and, consequently, that of the labyrinth, nearly every known reflex disturbance, even suicidal mania.

14. **Intravenous Use of Cocain.**—The subject of experiment during the past three years, three times had local anesthesia produced with cocain—once of a finger, once for work on teeth, once because of a boil on the back of the neck. The analgesia produced at these times was not different in character or duration from that usually seen. There had been no other use of cocain or allied drugs. This experiment was performed as follows: Into one of the superficial veins of the back of the hand there were slowly introduced 5 grains of cocain in a 2 per cent. solution. The introduction of the solution was completed in about thirty minutes. Dizziness and palpitation made it seem wise to stop with this amount. Tests of the patient's condition were made at once and results were found to correspond in an incomplete way with those reported for animals. Cerebration was normal, except for a restless inability to keep the mind long on one subject. Motor power was unimpaired. There was marked analgesia everywhere. An incision $\frac{3}{4}$ of an inch long through the skin, well down into the fat, was made on the anterior surface of the lower leg. This incision could be felt; it caused a mere trifle of pain. Two or three small nerves in the fat were cut; each caused a slight twinge of pain. Apparently operative procedure might readily have been undertaken with only very moderate discomfort. Two hours later a similar central incision was made on the opposite side. The sensation of pain had by this time recovered much but not all of its normal intensity. It would seem evident, then, that however suited to animals this method may be, the relatively enormous dose necessary for even an imperfect result makes it impossible for human surgery. (This experiment is of peculiar value, since the experiment was performed by the writer on himself.)

New York Medical Journal

February 4

- 17 Salvarsan in Syphilis. S. Pollitzer, New York.
- 18 *Diet in Typhoid. C. E. Nammaek, New York.
- 19 Measurement of Arterial Blood-Pressure in Man. G. Bachmann, Atlanta.
- 20 Treatment of Skin Diseases with Solid Carbon Dioxid Snow. E. Pisko, New York.
- 21 *A Case of American Relapsing Fever. W. Baetz, Ancon, Canal Zone, Panama.

- 22 Syringe for Local Anesthesia in Rectal Operations. J. F. Saphir, New York.
- 23 Avoidance of Mistakes in Diagnosis of Foot Troubles. M. Strunsky, New York.
- 24 Pneumoecele of the Lacrimal Sac. E. M. Blake, New Haven, Conn.

18. **Diet in Typhoid.**—When milk disagrees, when there is abdominal distention, and when curds appear in the stools, Nammack's favorite formula is milk, 4 ounces; fresh cream, 1 ounce; lime water, 1 ounce. This is given every three hours, and is followed by a mixture of dilute hydrochloric acid, 10 minims in 1 dram of a reliable essence of pepsin. To this prescription, strychnin is added when required. Between each two portions of milk, albumin water, made by adding the white of 1 egg to 6 ounces of boiled water, is given. The patient is also solicited to drink plain water freely. If there is complete intolerance or aversion to milk, then buttermilk or kumyss or kefir can frequently be borne. There is no danger, in Nammack's opinion, in forcing this quantity of fluid through the cardiovascular apparatus and the kidneys, unless acute nephritis exists as a complication. In that case it is both useless and injurious to attempt to drive this quantity of liquid through an inflamed and partly impermeable kidney filter. The quantity and quality of the daily urine output must be carefully studied, and attempts at flushing the kidneys postponed, until the mechanical obstacles to the flow of urine are removed. After the third week, Nammack usually allows crackers with butter, well-cooked rice, calves-foot jelly, and broth, and other solid foods when the evening temperature reaches normal. Of twenty-eight patients treated according to this plan, twenty-seven recovered; one died from ulcerative endocarditis; three patients recovered after severe intestinal hemorrhages, and in one small boy perforating appendicitis developed in the fourth week, but he recovered, after operation, performed within four hours after the onset of the appendicitis.

21. **American Relapsing Fever.**—This case occurred in the Panama Canal Zone and was typical in every respect.

Lancet-Clinic, Cincinnati

January 28

- 25 Recent Researches in Mental Medicine, Especially in the Etiology and Treatment of Dementia Præcox and General Paralysis. L. V. Briggs, Boston.
- 26 Differential Diagnosis of Cerebellar Tumors. D. I. Wolfstein, Cincinnati.
- 27 Salvarsan. A. O. Zwick, Cincinnati.

February 4

- 28 Clinical Statistics. I. S. Wilc, New York.
- 29 A Simplified Method for Intravenous Administration of Salvarsan. M. L. Heidingsfeld, Cincinnati.
- 30 *A Satisfactory Method of Suprapubic Drainage of the Bladder. F. E. Fee, Cincinnati.

30. **Suprapubic Drainage of the Bladder.**—The apparatus used by Fee consists of a 1 or 2-gallon bottle and a 1-quart bottle, equipped in the following manner: The large bottle is to be filled with water, and must have two openings, one at the ordinary neck and one at the bottom, both closed with rubber stoppers, each containing a perforation for a small tube. The lower tube is connected with a short drainage tube, passing below to a waste jar, and on this tube near the bottle is placed a small screw clamp to regulate the outflow drop. Two inches below this is placed a glass bulb dropper of the same variety as used in the Murphy proctoclysis apparatus. This bulb conveniently shows the rapidity of the outflow drop. From the neck of the bottle a small drainage tube is connected with a 1-quart bottle, the neck of which is closed with a rubber stopper containing two openings, one of which is connected with the large bottle, and the second opening is connected directly with a tube leading to the patient. The tube should have two short observation glasses inserted, one near the bottle and the other near the patient. Fee prefers to have a large drainage tube, $\frac{1}{2}$ inch in diameter, inserted into the bladder, and through this a No. 10 catheter is passed, directly connected with the drainage apparatus. The lower end of the large drainage tube should have several holes cut in its side to facilitate the passage of urine into it. The tube passing into the quart bottle should only extend down about 2 inches. The one passing to the large bottle should extend into the neck about 1 inch. This permits the urine to drop into a small bottle and not be aspirated into a larger one. If this apparatus is to work satisfactorily, the catheter and tubes

should be cleansed as often as necessary, depending on the condition of the urine; and, should it be thick and flow slowly, frequent cleansing is necessary. When all the connections are properly made, and little or no air is allowed to enter the tubes, the discharge drop need not exceed 150 drops per minute, and the large bottle need not be filled with water but twice in twenty-four hours. Fee says that with the exception of a slight wetting of the dressings, caused by the presence of the gauze drainage, for the first two or three days, this apparatus will satisfactorily drain practically all the urine from the bladder and deposit it in the small bottle, from which it can be drawn every twelve hours, measured and examined.

Journal of the Indiana State Medical Association, Fort Wayne

January

- 31 Revolutionary Methods in Connection with Syphilis. F. R. Charlton, Indianapolis.
- 32 The Surgical Year. M. F. Porter, Fort Wayne.
- 33 The Year's Progress in Pediatrics. L. P. Drayer, Fort Wayne.
- 34 Advances in Bacteriology and Pathology During 1910. B. W. Rhamy, Fort Wayne.
- 35 The Year's Progress in Medicine. T. Potter, Indianapolis.
- 36 The Year's Work of the State Board of Health. J. N. Hurty, Indianapolis.

Journal of the American Public Health Association, Columbus, Ohio

January

- 37 *Work and Play. C. O. Probst, Columbus, Ohio.
- 38 Interrelation of National Organizations Working in the Interest of Health. F. Almy, Buffalo, N. Y.
- 39 The Proper Correlation of Physicians, Engineers and Other Specialists in Public Health Work. W. T. Sedgwick, Boston.
- 40 Value of Terminal Disinfection. C. V. Chapin, Providence, R. I.
- 41 Importance of Birth Registration to Determine Infant Mortality. J. H. M. Knox, Baltimore.
- 42 Past Performances of the Laboratory Section with Some Suggestions for the Future. W. R. Stokes, Baltimore.
- 43 *Effect of Vacuum Desiccation on the Virus of Rabies, with Remarks on a New Method. D. L. Harris and L. F. Shackell, St. Louis.
- 44 *Carbo-Gasoline Method for Disinfection of Books. W. L. Beebe, Saint Cloud, Minn.

37. Abstracted in THE JOURNAL, Sept. 17, 1910, p. 1044.

43. **Effect of Vacuum Desiccation on the Virus of Rabies.**—The authors found that by using Shackell's method of desiccation, the essential feature of which is that the material is kept solidly frozen during the process of drying, brains and cords may be desiccated *in toto* without destruction of virulence. The time required for the complete extraction of water is from twenty-four to thirty-six hours. A number of brains have been so treated and the infectivity of all has been preserved. After the completion of desiccation, these brains were placed in an ordinary desiccating jar over sulphuric acid and left continually exposed to light at the ordinary room temperature. One brain has remained infective for four months. The only precaution taken was to guard against moisture. Material thus dried is like chalk and is easily pulverized. It is, however, very hygroscopic and, after a few hours' exposure to the air, becomes leathery and rapidly loses its infectivity.

44. **Carbo-Gasoline Method for the Disinfection of Books.**—The difficulties that prevent the disinfection of books seem to be numerous. If a gaseous disinfectant is used, it is very hard to have it penetrate all parts. Steam injures the book to some extent. An ideal method, therefore, would seem to be to use a liquid that would not be injurious and still kill all the pathogenic organisms that frequently infect them. Beebe found that gasoline does not injure books even after they are soaked in it for two or three hours if they are quickly dried. Gasoline has the advantage of dissolving fats and oils and, theoretically, it would appear that if a germicide were added it would act on bacteria in a dry and perhaps a wet medium. Several disinfectants which were soluble in gasoline were tried, but phenol was the only one that seemed to be efficient. In testing the efficiency of carbo-gasoline it was necessary to devise a special technic. A very volatile gasoline, which is termed 88 Baume or gas machine gasoline, was used. Liquefied phenol crystals were added to the gasoline in different amounts, and the disinfecting properties tested on several organisms. A 1 per cent. solution was sufficient to kill all non-spore producing organisms in less than five minutes. Some books were disinfected by this method after first infect-

ing them with several different organisms. In all cases 88 Baume gasoline, containing 2 per cent. phenol, was used. The books were opened at the pages where they were to be infected, put in the autoclave and sterilized at 15 lbs. steam pressure for fifteen minutes. They were then infected with *B. typhosus*, *B. coli communis* and *B. diphtheriae*. They were left in carbo-gasoline for twenty minutes. One of the books was dried over night in a sterile chamber before cultures were made. In all, sixty-two inoculations were made, eighteen with *B. diphtheriae*, nineteen with *B. typhosus*, eighteen with *B. coli communis* and seven with *Staphylococcus pyogenes aureus*, without growth in any case. Books that were treated by this method were not injured, unless the cover was lettered with an oil paint. In such cases, if care be taken not to touch the letters before the books are dried, no harm is done. This method has been tried on several different bindings, such as leather, cloth and paper, and in no case has the binding been affected. Gasoline of a lower specific gravity than 88 Baume can be used, but it takes longer for the gasoline to evaporate. If the odor of phenol and gasoline is offensive, oil of peppermint, wintergreen or cinnamon can be used as a deodorant. Beebe has found oil of peppermint, 3 parts; oil of wintergreen, 1 part, and oil of cinnamon, 1 part, efficient in disguising the odor of phenol.

Journal of the Kansas Medical Society, Kansas City

January

- 45 Pollution of Kansas Streams. J. L. Everhardy, Leavenworth.
- 46 Stricture of the Urethra. S. G. Zinke, Leavenworth.
- 47 Obstructed Nasal Respiration and Drainage. H. L. Alkire, Topeka.
- 48 Catarrhal Pneumonia. W. G. Norman, Cherryvale.
- 49 The Medical School of the University of Kansas. M. T. Sudler, Lawrence.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December

- 50 Tetanic Convulsions in Frogs Produced by Acid Fuchsin, and Their Relation to the Problem of Inhibition in the Central Nervous System. H. G. Barbour and J. J. Abel, Baltimore.
- 51 Toxicity of Martius Yellow and Some Other Anilin Dyes and the Entrance of Dyes into Cells. A. P. Mathews and E. Longfellow, Chicago.
- 52 *Physiologic Studies in Anaphylaxis: Reaction of Smooth Muscle from Guinea-Pigs Rendered Tolerant to Large Doses of Serum. W. H. Schultz, Washington, D. C.
- 53 *Action of Ether on Anaerobic Tissue. A. P. Mathews, Chicago.
- 54 Pharmacologic Studies on the Phosphatids. Methods for the Study of Their Combinations with Drugs and Other Substances. W. Koch, Chicago.
- 55 Relation of the Phosphatids to the Sodium and Potassium of the Neuron. W. Koch and F. H. Pike, Chicago.
- 56 *Relation of the Phosphatids to Overton and Meyer's Theory of Narcosis. W. Koch and F. C. McLean, Chicago.
- 57 Relation of Brain Phosphatids to Tissue Metabolites. W. Koch and A. W. Williams, Chicago.
- 58 Function of the Brain Phosphatids in the Physiologic Action of Strychnin. W. Koch and H. T. Mostrom, Chicago.

52. **Physiologic Studies of Anaphylaxis.**—Schultz found that single intravenous or intraperitoneal injections of horse serum seem to have no effect on the normal irritability of intestinal muscle toward the same serum provided the muscle be tested within a period of one or two hours after the injection. If, after the first injection of foreign serum, a long enough interval elapse, intestinal muscle shows a supranormal degree of irritability toward the same serum. The time necessary to acquire this increased irritability is probably coincident with that required for the process known as sensitization in anaphylactic animals. Guinea-pigs may be rendered tolerant to large doses of foreign serum by injecting increasingly large doses of it, at intervals of two days, for a period of twenty to thirty days. The gross body reflexes and the cardiac and respiratory reactions differ markedly from those of a sensitized animal, but intestinal smooth muscle continues to show a supranormal irritability toward a serum similar to that of smooth muscle from a sensitized animal. The tolerance induced by repeated injections of foreign serum resembles tolerance acquired toward certain chemical substances familiar to pharmacologists. As to immunity, it seems impossible by repeated injections to initiate a condition of absolute immunity, since certain tissues not only remain irritable to the serum but acquire a supranormal irritability to it.

53. **Action of Ether on Anaerobic Animal Tissue.**—Mathews tested the action of ether on the nerve cord of the heart of

the king crab, *Limulus*. The experiments consisted in separating the nerve cord from the posterior part of the heart, leaving it attached only to the front segment of the long, tubular heart. The hydrogen was generated by pure zinc and sulphuric acid and the gas was well washed in alkaline and acid permanganate, sodium hydrate and water. The replacement of air by hydrogen generally stimulated slightly both the rate and amplitude of the contractions. The contractions slowly diminished in the course of an hour in hydrogen from a rate of seventeen to a rate of about ten a minute. If air was then readmitted the rate usually fell still lower. Substitution of the ether-hydrogen mixture for hydrogen caused a short preliminary increase in the rate and amplitude of the contractions and increase in the tone of the heart-segment, provided the ganglion was in good condition and had not previously been anesthetized. This preliminary stimulation did not occur, or lasted only for two or three beats if the ganglion had been anesthetized once or twice before. Further action of the ether in all cases caused a cessation of contractions. When the ether was washed out with a stream of hydrogen, the ganglion was markedly stimulated on recovery. The ganglion generally recovered fully in the hydrogen. The recovery in the hydrogen was in most cases as prompt and complete as it apparently would have been in air; in a few cases, however, after being first for a considerable period in the hydrogen, the recovery from ether was very slow in the hydrogen, but rapid on changing the air. These results show, therefore, that the actions of ether on this facultative anaerobic tissue, while undergoing anaerobic respiration, is in all respects essentially the same as the action of ether on other aerobic nervous tissues, and as the action of ether on the same tissue in the presence of air, i. e., primary stimulation, followed by inhibition and after-stimulation on recovery.

56. **Relation of the Phosphatids to Narcosis.**—Koch and McLean doubt that there is any evidence that anesthetics or hypnotics produce changes in the state of aggregation of lecithin or cephalin, which are sufficiently consistent to account for such a general phenomenon as narcosis. They found some evidence, however, that chloroform as distinguished from pure ether has the power to form a combination with lecithin, a phenomenon which may be brought into relation with its slow elimination and consequent tendency to produce delayed poisoning.

Journal of the Oklahoma State Medical Association, Muskogee

January

- 59 *Prevention and Treatment of Septic Infections of the Extremities. E. H. Ochsner, Chicago.
- 60 Obstetric Surgery and Secondary Repair of Lacerated Perineum. J. M. Trigg, Shawnee.
- 61 Ophthalmia Neonatorum. M. K. Thompson, Muskogee.
- 62 Cases of Bronchopneumonia and One of Burn from Molten Lead Among the Dependent Children of Oklahoma. C. Puckett, Pryor.
- 63 The Modern Trend of Obstetrics. A. B. Leeds, Chickasha.
- 64 Bronchopneumonia. L. S. Willour, Atoka.

59. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1678.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

January

- 65 Predementia Præcox: The Hereditary and Constitutional Features of the Dementia Præcox Make-Up. S. E. Jelliffe, New York.
- 66 *Disturbance of Sensation in a Case of Syringomyelia. A. R. Allen, Philadelphia.

66. **Disturbance of Sensation in Syringomyelia.**—In the case cited by Allen, the pathologic process completely isolated the posterior columns from the rest of the spinal cord from the first cervical to the eleventh thoracic segments, inclusive. There was perfect preservation of tactile sensibility and loss of pain and temperature sensibility. There was very diagrammatically demonstrated the lower limit of the trigeminal area. The cavity formation in the gliomatous tissue was most marked on the right side. Allen says that the case demonstrates the following facts: (1) The pathway for tactile sensations lies in the posterior columns; (2) with total cutting off of all the afferent pathways of the spinal cord with the exception of the posterior columns tactile sensation is not in the least impaired; (3) the validity of Mann's hypothesis is not questioned by the findings of this case.

Journal of the Tennessee State Medical Association, Nashville

January

- 67 Lumbar Puncture; Its Technic, Indications and Therapeutic Uses. J. Overton, Nashville.
- 68 Tuberculin Treatment in Pulmonary Tuberculosis. W. Litterer, Nashville.
- 69 Failure to Report Communicable Disease a Criminal Disregard of Law. N. F. Raines, Raines.
- 70 Present Status of Electrotherapy. M. R. Farrar, Nashville.

Journal of Medical Research, Boston

January

- 71 *Immunity in Tuberculosis. G. B. Webb and W. W. Williams, Colorado Springs, Colo.
- 72 *Examination of the Feces of Forty Cattle for Tubercle Bacilli and Conclusions Therefrom. J. Reichel and E. S. Deubler, Philadelphia.
- 73 *The Volume Index of the Red Corpuscles. R. C. Larrabee, Boston.
- 74 *A Case of Osteitis Deformans. A. G. Ellis, Philadelphia.
- 75 *Experimental Chronic Nephritis with Exophthalmos in the Rabbit. O. W. H. Mitchell, Columbia, Mo.
- 76 *Histology of the So-Called Hypernephromata and the Embryology of the Nephridial and Adrenal Tissues. L. B. Wilson and B. C. Willis, Rochester, Minn.
- 77 *Erythrocytic Nuclei of Normal Human Blood. R. W. King, Las Animas, Colo.
- 78 Primary Tumor of Lymph Vessels and Typical Lymph-Adenoid Tissue. O. W. H. Mitchell, Columbia, Mo.
- 79 *Investigations on Pulmonary Tuberculosis. A. H. Caulfield, Gravenhurst, Canada.
- 80 *The Swamp Fever of Horses. J. L. Todd, Montreal, and S. B. Wolbach, Boston.

71. **Immunity in Tuberculosis.**—Webb and Williams report on an animal which was inoculated weekly for nine months with a tubercle culture, from which 150 bacilli had been found to infect a guinea-pig. The inoculations were all made subcutaneously around the region of the navel. Autopsy failed to show any evidence of tuberculosis. The authors believe, therefore, that it may safely be considered that a guinea-pig has received, without the production of tuberculosis, about 1,000 times a lethal quantity of living virulent tubercle bacilli.

72. **Examination of Cattle for Tubercle Bacilli.**—The microscopic examination of the feces or rectal scrapings of cattle for tubercle bacilli was found by Reichel and Deubler to be of no value in that many bacteria make their appearance in the feces or rectal scrapings with the morphology and staining characteristics of tubercle bacilli, which, however, fail to prove themselves as such. Of the forty cattle included in the examination, nine (22.5 per cent.) were found to be throwing off virulent tubercle bacilli in the feces or rectal scrapings. Of these nine cattle, the tubercle bacilli were found virulent for guinea-pigs, and in eight of the nine the tubercle bacilli were virulent for rabbits. The authors believe that the successful demonstration of tubercle bacilli in the feces or rectal scrapings of cattle is either proof that extensive or "open" lesions of tuberculosis exist, or an indication that tubercle bacilli ingested are passing through the length of the alimentary canal of the animal under examination. Cattle, with "open" lesions of tuberculosis, and throwing off tubercle bacilli in the feces or rectal scrapings, as a rule show physical symptoms of the disease. Cattle showing physical symptoms of tuberculosis are the most active disseminators of the disease, because of the probable existence of "open" lesions, and the likelihood that tubercle bacilli are thrown off in the excreta. Since they show physical symptoms they may be detected in a herd by a consideration of the history, careful observation and a thorough examination of each animal. Tuberculin-reacting cattle do not necessarily throw off tubercle bacilli in the feces until the development of "open" lesions of tuberculosis, in which event the condition may be detected by a consideration of the history, careful observation and a complete physical examination.

73. **Volume Index of Red Corpuscles.**—Larrabee believes that the method of estimating the volume index by spontaneous sedimentation, while perhaps less accurate than the centrifugal method, is good enough for clinical uses. Normally, the corpuscles settle to about 50 per cent. of their total volume, where their number per cubic millimeter is 5,000,000. A volume index from 0.9 to 1.10 may be considered normal. Healthy persons occasionally show considerable variations beyond these limits. Concentration does not of itself affect the volume index. In pernicious anemia the volume index

is almost invariably raised. The serum often has a distinct yellow color. The high index is probably also to be expected in those cases in which the pernicious picture is associated with other diseases, that is, when pernicious anemia occurs secondarily. In secondary anemia the volume index is almost always normal or lower than normal. After a severe hemorrhage, however, the volume index and the color index may be high and the blood may resemble pernicious anemia in other respects. One patient with aplastic anemia examined by Larrabee showed a low volume index. In a case of splenectomy for trauma the index was normal. In leukemia the volume index can seldom be estimated by this method. In splenic anemia the volume index was generally low. It was below normal in one case of Hodgkin's disease and high in one of malignant lymphoma.

74. **Osteitis Deformans.**—The case cited by Higbee and Ellis presented essentially all the features of the disease described by Paget, the most common manifestations of the affection being pronounced. The patient died and a careful and thorough postmortem examination was made, both macroscopic and microscopic. The findings were typical of the disease.

75. **Experimental Chronic Nephritis.**—The method used by Mitchell was very similar to that of Ophüls. Two per cent. potassium bichromate was injected subcutaneously. The amount used was started at 1 c.c. weekly, but was gradually increased in order to overcome the recuperative power mentioned by Ophüls. In one rabbit, 1/50 grain of atropin was administered simultaneously with the potassium bichromate. There was in a rabbit, injected only twice, a very marked parenchymatous nephritis with little or no indications of interstitial change. When the injections were continued several months, the predominating lesion was an interstitial nephritis. There is no evidence to show that this was produced at the same time as the parenchymatous lesion or following it. The feature noted especially in these experiments was the exophthalmos in one rabbit, which, to Mitchell's knowledge, has not been noted in experimental chronic nephritis or other conditions produced by chronic systemic intoxication. That the exophthalmos did depend on such an intoxication is, he thinks, the most probable explanation. There was no appreciable effect from the atropin used in one rabbit.

76. **Histology of Hypernephromata.**—Wilson and Willis studied fifty-four renal tumors, forty-eight of which were so-called hypernephromata; twenty-six swine embryos (serial sections), 5 to 20 millimeters; forty-three human embryos (serial sections), 6 to 70 millimeters. They concluded that most, if not all, so-called adrenal rests are probably of Wolfian origin. There is almost no evidence, embryologic or histologic, in support of Grawitz's hypothesis that the so-called hypernephromata have their origin in adrenal rests. There is much evidence that the so-called hypernephromata do not arise from proliferations of the adult secreting epithelium of the convoluted tubules. There is much evidence that the hypernephromata do arise from islands of nephrogenic tissue. Such tissue is sometimes present in the adult kidney and appears capable of forming tumors of the non-infiltrating, mixed-cordon, tubular, papilliform, and sarcoma type so characteristic of the so-called hypernephromata.

77. **Erythrocytic Nuclei of Normal Human Blood.**—King believes that he has been able to demonstrate conclusively that practically every red blood-cell in the blood of normal adults contains stainable remnants of a nucleus, and that the red blood-cells are derived from the bone marrow erythroblasts by a process of physiologic nuclear degeneration, accompanied, of course, by other changes. That the basic staining material which can be shown to exist in the central portion of practically every erythrocyte is nuclear material, King sees no reason to doubt. He feels almost confident that in a single preparation he has seen as many as ten ruptured red blood-cells, from each of which from two to six blood-platelets were emerging. He says he can hardly escape the conclusion that the blood platelets are simply the extruded fragments of the erythrocytic nuclei. The method by which he has been able to demonstrate the nucleation of the red blood-cells is simple and easily carried out. A solution of poly-

chromatic methylen blue is essential, also a saturated solution of picric acid in distilled water. This solution should contain an excess of the picric acid. In addition to these, a 1 per cent. aqueous solution of eosin, and a modified Romanowsky staining fluid will be needed. The blood films should be made on perfectly clean slides in the usual way. They must be neither too thick nor too thin. A little experience will be required before the best results can be obtained. The film should be immediately fixed for two or three minutes in methyl alcohol, and the following steps taken: (1) Rinse in tap water; (2) place for ten minutes in the blue solution; (3) rinse in water; (4) place for ten minutes in the picric-acid solution; (5) rinse in water; (6) place in 1 per cent. eosin solution for from one-half minute to two minutes; (7) rinse in water, and blot perfectly dry; (8) stain for five minutes with King's modified Romanowsky staining fluid; (9) rinse in water; dry, and examine with oil immersion.

79. Investigations of Pulmonary Tuberculosis.—The investigations made by Caulfield and others embrace: Variations in the type of v. Pirquet tuberculin reaction; deflection of complement test; procedures outlining possible classifications based on demonstrable serum reactions, and opsonic and phagocytic estimations. Two hundred patients were studied. Briefly, the data obtained from the procedures reported have given a means of grouping certain of the otherwise more or less indefinite clinical conceptions afforded by any study on a number of cases of pulmonary tuberculosis. Until certain of the reactions are proved specific Caulfield thinks it is doubtful whether the different end-results do or do not represent specific conditions between the host and the tubercle bacillus. Regarding the results in the light of clinical work and not from the standpoint of specificity the various data have aided definite conception on three considerations of tuberculous infection: (1) the existing relation between the infecting tubercle and host, as evidenced by (2) the amount of anatomic involvement and (3) the resulting clinical responses. The temporary prognostic values apparently afforded by the interpretation of the type of tuberculin reaction, of antigen-serum reaction, and of the phagocytic behavior of the patient, have been followed chiefly under the favorable circumstances of sanatorium life where most patients exhibit their best powers of resistance. In obtaining these results, observations were made which suggest that the biologic classification might change with clinical variation. Especially was this so with regard to the reactions obtained with various strengths of antigen and patient's serum. Here conception and expression are facilitated by regarding the possibility of two serum contents or reaction capacities. (1) Inhibition.—Serums with this effect allow hemolyses on the addition of "system" because of their serum-antigen resultants which are repellant or non-attractive to complement. (2) Tuberculous sensitizers.—Serums with these specific bodies cause true fixation of complement, shown as complete absence of hemolysis.

80. The Swamp Fever of Horses.—Swamp fever is a disease of horses which is widely distributed in the Western United States and in Western Canada. It is usually a chronic disease and is characterized by emaciation, weakness, irregular temperature and anemia. It is caused by an infecting agent which can be transmitted from horse to horse by the inoculation of blood taken from an infected animal. All search for a parasite by Todd and Wolbach, which might cause the disease, has been unsuccessful, although large numbers of preparations of body fluids and tissues have been examined at all stages of the disease by microscopic and bacteriologic methods.

New Mexico Medical Journal, Las Cruces

January

- 81 One Year's Progress in Our Knowledge of Tuberculosis. F. T. B. Fest, Las Vegas.
82 Education of the Tuberculous Individual in Home Care. E. F. Frisbee.

Bulletin of the Manila Medical Society

December

- 83 Leprosy. M. T. Clegg, Honolulu, H. T.
84 Polycythemia. C. B. Snyder, U. S. Army.
85 Priority in the Demonstration of Negri Bodies in the Philippines. W. P. Chamberlain, U. S. Army.
86 Community Measures Against Mosquitoes. C. S. Banks, Manila.

Canadian Medical Association Journal, Toronto

January

- 87 The Ancient Foundations of Heredity. A. B. Macallum.
88 *Renal Activity. T. G. Brodie.
89 *Rheumatism and So-Called Chronic Rheumatism. T. McCrae.
90 Association of Malignant Disease of the Thyroid and Multiple Lipomata. J. R. Goodall and L. C. Conn.
91 Salvarsan in Syphilis. J. G. Fitzgerald.
92 *Early Diagnosis of Pulmonary Tuberculosis. J. J. Thomson.
93 Roentgen-Rays with Bismuth Test Meal in Diagnosis of Gastric Conditions. F. A. C. Scrimger.

88. Renal Activity.—Brodie's view is that the glomerulus is, in reality, a means by which there may be set up at the commencement of the tubule a pressure-head sufficient in magnitude to drive the fluid down the tubule. The renal tubule is a long structure possessing an extremely narrow lumen. If, then, we apply Poiseuille's law governing the flow of fluid along capillary tubes to the kidney tubule, we at once see that a considerable pressure is required to drive even a small volume of fluid along such a tubule. It is a well-established fact that the watery part of the urine arises mainly, even under certain circumstances, entirely at the glomerular surface, and this fluid is discharged down the tubule. If we could measure the length of the tubule, the diameter of its lumen in its various sections, and then determine the volume of urine flowing along the tubule in a given time, we could, assuming that Poiseuille's law holds for the tubule, determine how great a pressure is required to maintain such a flow. To test the view, Brodie made some experiments of the following type: A vigorous diuresis was set up in an anesthetized dog by the injection of a warm, saline solution. The rate at which the urine was discharged from one kidney at the height of this diuresis was then determined, and immediately the renal vessels and ureter were ligatured and the intact organ which thus contained, as far as possible, the whole of its blood and urine at the instant of ligature, was fixed in formalin. After hardening, it was cut into portions, the medulla separated from the cortex, and pieces of the cortex weighed, embedded, and cut into sections. These were mounted in series, and then the total number of conglomeri in the whole kidney was calculated from the ratio of the weight of the whole cortex to that of the small piece examined.

The lumen of the tubule in its various parts was next measured. Taking one experiment as typical, Brodie found that a pressure of as much as 93 mm. of mercury was required to drive the fluid along one of the tubules at the rate observed during the experiment. The question at once arises: Whence is this pressure-head derived? There are only two possible sources: (1) a secretory pressure set up by the cells in some part of the tubule, presumably at the glomerulus, since the secretion of water is effected there, or (2) a direct pressure transmitted through the glomerular surface from the blood-pressure. All attempts made to ascertain whether any of the cells of the renal tubule can set up a secretory pressure analogous to that observed in the case of the submaxillary gland, have completely failed. The maximum pressure at which urine can be discharged from the kidney is always from 30 to 40 mm. Hg less than the arterial blood-pressure. Hence, Brodie's suggestion is that the pressure-head is derived from the capillary blood-pressure within the glomerulus, that pressure being transmitted in undiminished amount through the glomerular capillary wall and epithelium. To express this view of the hydrodynamic action of the glomerulus, he terms the glomerulus a "propulsor."

89. Chronic Rheumatism.—The whole argument made by McCrae is that there is no entity which we can properly term "chronic rheumatism," and he tries to point out the reasons for doing away with one of the names which is so often treated. He says that the public often reproaches physicians for the inability of the profession to cure "chronic rheumatism." Is it any wonder, he asks, when in so many instances the actual condition is not properly diagnosed but is given a name which does not have any reference to it, and to this the treatment is directed; witness the patient with popliteal aneurysm, on whom much good medicine has been wasted. We can still echo the hundred year old sentiment of Haygarth that a number of conditions are grouped together as rheumatism, which have no other feature in common than the occurrence of pain.

92. **Diagnosis of Tuberculosis.**—Thomson emphasizes (1) the lymphatic nature of the disease in its primary state; (2) the predisposition of the paravertebral cranial parts of the lung; (3) the rarity of single lesions in the lower lobes or bases of the lungs; and (4) the importance of percussion. He also notes the value of the v. Pirquet test in all questionable cases. He regards it as an undoubted advance over the uncomfortable subcutaneous injection with its accompanying fever.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

January

- 94 Edward Jenner, M.D., LL.D., F.R.S. G. W. Cook, Washington, D. C.
- 95 Physiologic Action of Certain Electrical Currents. C. M. Hazen, Richmond.
- 96 Fibroids of the Uterus, Complicated by Pregnancy. E. T. Hargrave, Norfolk, Va.
- 97 Three Unusual Cases in Radiographic Work. D. D. Talley, Richmond.

Cleveland Medical Journal

January

- 98 *Phylogenetic Association and Certain Medical Problems. G. W. Crile, H. G. Sloan and J. B. Austin, Cleveland.
- 99 Tabes Dorsalis and the Result of Specific Treatment. F. Billings, Chicago.
- 100 Fibrous Nasal Polypi. D. A. Prendergast and W. J. Abbott, Cleveland.

98. **Phylogenetic Association.**—It is the purpose of the authors to offer evidence that, underlying medicine, there are certain great natural laws which show that disease as well as health is a part of the web of life; that every phenomenon of disease fits precisely into a general plan, and that like a difficult picture puzzle if we persist we can make up the completed picture of disease. The experimental work and the laboratory findings are described fully, but the length of the article and the limited space in these columns, unfortunately prohibits abstracting this paper.

Detroit Medical Journal

January

- 101 Phosphatic Index as a Means of Diagnosis and an Aid in Treatment. J. H. Dowd, Buffalo, N. Y.
- 102 Surgical Aspect of Goiter with Special Reference to Pressure Symptoms. A. W. Blain, Detroit.
- 103 An Improved Method for Preparation of Bacterial Vaccines. C. M. Stafford, Detroit.

Woman's Medical Journal, Cincinnati

January

- 104 Fever in the Puerperium. A. W. Tallant, Philadelphia.
- 105 Suboxidation a Factor in the Cause of Disease. M. E. Dickinson, Rochester, N. Y.
- 106 The Metranoliter in Dysmenorrhea. C. MacFarlane, Philadelphia.
- 107 *A Successful Case of Cartilage Transplantation for Prevention of Perforation in Submucous Resection. I. D. Kerr, Boston.

107. **Cartilage Transplantation for Prevention of Perforation in Submucous Resection.**—In Kerr's case there was a marked cartilaginous deviation to the right with a corresponding large basal spur. There was considerable crusting and secretion in the nares. The mucous membranes bled easily, and on both sides of the septum a small white area of cartilage denuded of its mucous membrane was seen. It seemed to the author that if she did a submucous resection these traumatic perforations in the mucous membranes, together with the incision on one side anteriorly, although apparently not directly opposite when the deviated cartilage had been removed and the subsequent shrinking of the mucous membrane had taken place, that a perforation would result. To prevent this, it occurred to her that she might try transplanting a piece of cartilage between the perforations. With this thought in mind, she removed only enough cartilage with the Ballenger knife to allow space to remove the basal spur. That done, she removed the anterior half of the deviated cartilage above, and found a sufficiently straight and large enough remaining piece of cartilage to transplant, and this she allowed to remain in position until she had completed the operation. She then transplanted this piece of cartilage, which was about three-quarters of an inch in length and about one-half inch in width, bringing it as far forward as the incision. The flaps of the incision were brought carefully into place and the nares

packed for twenty-four hours. Three days after the operation granulations were seen springing in from the edges of the perforations of the mucous membranes. In ten days the granulations had completely filled in, and no cartilaginous areas could be seen. Seven months have now elapsed since the operation. There is no perforation, the mucous membrane presents a healthy condition, there has been no epistaxis, and the patient, a girl, has perfect breathing.

Long Island Medical Journal

January

- 108 Empyema of the Maxillary Antrum: Symptomatology, Pathology and Treatment. S. H. Lutz, Brooklyn, N. Y.
- 109 Suicide by Poison. C. D. Cleghorn, Mineola, N. Y.
- 110 Historical Sketch of St. Mary's Hospital of Brooklyn. J. Harrigan, Brooklyn, N. Y.
- 111 Historical Sketch of St. John's Long Island City Hospital. J. H. Barry, Long Island City, N. Y.

Virginia Medical Semi-Monthly, Richmond

January 27

- 112 Treatment of Some Forms of Cardiac Failure. L. F. Barker, Baltimore.
- 113 Acute Peritonitis. H. S. MacLean, Richmond.
- 114 Ileus. S. S. Gale, Roanoke.
- 115 Local Anesthetics in Anorectal Surgery. E. H. Terrell, Richmond.
- 116 The Status Lymphaticus; A Condition Found in Subjects Dying from General Anesthesia. C. P. Jones, Newport News.

Kentucky Medical Journal, Bowling Green

January 15

- 117 Indications for and Preliminaries to Nephrectomy. B. F. Zimmerman, Louisville.
- 118 Importance of Fetal Physical Diagnosis in Management of Shoulder Presentations. F. C. Wilson, Louisville.
- 119 Traumatic Hernia. O. E. Bloch, Louisville.
- 120 The Herz Sphygmomanometer. E. F. Horine, Louisville.
- 121 Suprapubic Lithotomy for Vesical Calculus Weighing 500 Grains. J. T. Dunn, Louisville.
- 122 Four Cases of Esophagoscopy. G. C. Hall, Louisville.
- 123 Enlarged Prostate of Traumatic Origin. G. H. Day, Louisville.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

January 21

- 1 A Lecture on Cardiac Arrhythmia. A. J. Jex-Blake.
- 2 *Theory and Practice in Treatment of Pulmonary Tuberculosis. W. C. Bosanquet.
- 3 *A Series of 1,000 Inoculations, Chiefly in Private Practice. H. W. Crowe.
- 4 *Typhoid Infection. J. A. Mills.
- 5 Myasthenia with Enlargement of the Thymus. J. O. Symes.
- 6 *Antihemolytic Action of Arsenic. J. A. Gunn and W. J. Feltham.

2. **Treatment of Pulmonary Tuberculosis.**—While there is nothing new in Bosanquet's paper his emphasis of the principles of the treatment of tuberculosis is worthy of repetition. He says that there is no specific remedy or universal mode of treatment for tuberculosis of the lungs. Neither tuberculin, nor rest, nor work, nor mountain air, nor a sea voyage, nor a sanatorium, is an infallible remedy to be administered to all, as we give quinin for malaria or mercury for syphilis. We must study the individual patient, his circumstances and his idiosyncrasies and, armed with this knowledge, try to raise his resistance to the bacillus and its poisons. Fortunately, the human organism has considerable powers of resistance, if it is not debilitated by adverse conditions; and though we must, above all, endeavor to recognize cases early, before the disease has advanced far, yet even in advanced cases there is always hope of arrest of the disease or at least of a temporary reprieve and prolongation of life.

3. **One Thousand Inoculations.**—The anterior surface of the thigh is the least painful, and in any patient who is at all needle-shy, Crowe always injects in this region, varying each time the exact locality. Other situations are into the extensor surface of the upper arm, the deltoid, or into the skin of the abdomen, but he has usually avoided the conventional site, namely, that of the intrascapular region, as the skin is so tough that it is extremely difficult to avoid hurting the patient. Sometimes he gives the injection deeply into the muscles, sometimes subcutaneously, but he does not believe

the result is affected. The vaccines he used have all been home-grown, with the exception of acne and tuberculin. Of thirty-two cases of staphylococcus infections, twenty-eight patients were cured. One case of pyemia terminated fatally; two patients with acne and one with suppurative eczema are still under treatment. Three of four cases of streptococcus infections yielded readily to the treatment. In one case of nasal catarrh, apparently caused by an extremely long streptococcus, no dose had any effect whatever. The case was a complete failure under treatment. Of six cases of infection due to *B. coli communis*, four patients recovered; one patient with nephritis and one with mucous colitis were not benefited. In seven cases of infections of the respiratory passages other than tuberculous, and caused by the pneumococcus, *M. catarrhalis*, bacillus of Friedländer, and the bacillus of influenza, the patients responded promptly. In a case of unresolved pneumonia, due to Friedländer's bacillus, the whole condition cleared up within forty-eight hours after the first inoculation, although the man had been in bed for a fortnight with high temperature, and extreme dyspnea on the slightest movement. Of thirty-six cases of tuberculosis (skin, one; kidney, two; peritoneum, three; glands, four; breast, one; bones, five; lungs, twenty;) seventeen patients were cured (lungs, seven; bones, breast and skin, one case of each; glands, four; peritoneum, three); five patients were benefited (bones, one; kidney, one; lungs, three); eight remained unaffected (kidney, one; bones, two; lungs, five).

4. **Typhoid Infection.**—Rats are suggested by Mills as being carriers of typhoid. It is in autumn, when the grain has been gathered and as winter approaches that rats and mice leave the fields and make for human habitations. One means by which they obtain entrance—as a matter of common observation—is by drain and sewage passages, especially if those be defective. (Rats themselves are apt to cause leakages and defects in improperly constructed sewers.) Granted the existence of people with actual typhoid, or of human typhoid bacillus-carriers whose excreta is among the sewage where the rats live, and which it is possible they devour, it is easy to see how millions of bacilli may be present on the body, feet, jaws and tails of these rodents, whereby food and drink may become directly as well as indirectly contaminated. In addition, typhoid bacilli may exist in the intestine of mice and rats, and their excreta in turn be a source of infection. An association with rats is traced by Mills in an asylum where the occurrence of typhoid could not be explained in any other way.

6. **Antihemolytic Action of Arsenic.**—Experiments made by Gunn and Feltham with sodium arsenite and sodium arsenate lead them to conclude that arsenic, whether in the form of sodium arsenite or sodium arsenate, exerts on the red blood-corpuscles an action antagonistic to that of certain hemolytic agents. The experiments, therefore, afford additional proof in favor of the view that a protective action on the formed red blood-corpuscles against normal or abnormal hemolytic processes may, in part at least, account for the as yet imperfectly explained benefit which results from the medicinal administration of arsenic in blood-diseases.

Lancet, London

January 21

- 7 Points in Diagnosis of Orbital Disease. J. S. Hosford.
- 8 Transverse Fractures of the Patella, Without Separation of the Fragments. A. E. Johnson.
- 9 *Congenital Pulmonary Stenosis, with Special Consideration of the Nature of the Secondary Blood Changes. E. P. Weber and G. Dörner.
- 10 Intravenous Method of Treatment of Syphilis with Salvarsan, with a Convenient Apparatus for Such Administration. H. W. Bayly.
- 11 *"Nodular" Fibromyositis, an Everyday Affection. W. H. M. Telling.
- 12 *Influence of Chloroform When Repeatedly Administered in Small Doses. G. H. Clark.

9. **Congenital Pulmonary Stenosis.**—The authors reaffirm their previous conclusion that the secondary polycythemia in cases of congenital heart disease is seldom, if ever, rivaled in degree by the secondary polycythemia which sometimes, as is well known, occurs in chronic acquired valvular affections (of the mitral valve) and in adherent pericardium. It is more nearly rivaled by the marked secondary polycy-

themia occasionally associated with late stages of pulmonary emphysema, chronic bronchitis, asthma, old bilateral pleuritic adhesion, chronic interstitial pneumonia, and pulmonary fibrosis. The polycythemia in all such cases differs from the polycythemia (possibly of primary myelogenous origin) associated with chronic splenomegaly, which has been termed "erythremia," by the not infrequent absence of real cyanosis in erythremia, especially in its early stages. Just as hypertrophy of the walls of the heart is useful in so far as it compensates for mechanical defects in the valvular apparatus, so also is polycythemia useful in so far as it compensates for difficulties in the proper oxygenation of the blood and tissues of the body; but just as in cardiac valvular disease great hypertrophy of the heart indicates some grave defect in the valvular mechanism, so also an extreme increase in the number of erythrocytes in the blood points to great impairment of the normal process of oxygenation of the body.

11. **"Nodular" Fibromyositis.**—It is maintained by Telling that chronic muscular rheumatism, or, to quote some of its synonyms, rheumatism, muscular and tendinous rheumatism, myalgia, muscular fibrositis, etc., is a pathologic condition, the essential morbid process of which is an inflammatory exudation into the fibrous tissues in almost any situation in which fibrous tissue is found. This exudate leads to swelling and thickening of very variable character and degree; it may be slight and impalpable; severe and definitely tumor-forming; acute and transient; chronic, and eventuating in hard fibrous lumps which resist all efforts at dispersal by the ordinary means at our disposal; but under all circumstances it tends to be painful. The one almost constant symptom which results from this fibrositis is pain. These infiltrations are painful when they are pressed on, and if vigorously rubbed they swell up and the pain is greatly increased. This local pain on pressure is practically the diagnostic feature of these cases. If a patient presents himself with any of the ordinary manifestations of chronic rheumatism, as a lumbago, sciatica, pleurodynia, or a cephalalgia, and with any obscure myalgic or neuralgic pain in any part of the body, Telling urges that a careful investigation should be made of the fibromuscular tissues of the affected areas. In the more recent diffuse cases there is general tenderness of these tissues, and one may not be able to feel anything which one could definitely assert to be a palpable thickening. But more usually, either with or without such general tenderness, one will find areas which are definitely, often exquisitely, tender to touch. All that is needed is a careful digital exploration of the structures involved. General treatment meted out to a feverish attack, with the employment of the ordinary pain-relieving drugs, is generally sufficient to effect a cure. If the pain is at all localized a single thorough application of massage may result in cure in this early stage. The removal of any discoverable cause, such as gastrointestinal irregularities, must be undertaken, and will not only help toward a cure, but will tend to prevent recurrences. During the more acute exacerbations drugs such as sodium salicylate, and the various means described in the acute attack produce a certain measure of relief, but recurrence is liable to occur indefinitely. To obtain a permanent cure and a complete relief from the recurrent attacks it is absolutely necessary that local treatment should be adopted with a view to obtain a complete dispersal of the indurations. Counter-irritation by blistering or cautery produces relief. Nothing, perhaps, is so efficient as the rubbing in of oil of gaultheria. Mechanical treatment must be adopted to secure a permanent dispersal. The most important of the forms are massage and systematic exercises. Acupuncture is undoubtedly of great use in relieving pain, but in Telling's experience does not produce complete dispersal of the infiltrations. In cases of fibrous nodules which will not yield to simpler measures, and which by implicating or pressing on nerves cause persistent pain, excision is not only advisable but necessary, the only caution being that the nodule must be definitely localized beforehand.

12. **Influence of Chloroform in Small Doses.**—Clark found that chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits. The liver shows degeneration of the

cells sometimes so marked that the whole center of the lobule is broken down into débris. The cells in the center of the lobule are early affected, those further out later. Fat is always present, generally in large quantities. The kidney suffers to some extent, but relatively more when the chloroform is inhaled than when injected or given by the stomach. Fat is occasionally found in degenerated cells. The spleen shows intense congestion, the sinuses being packed with red blood-corpuscles. Along with the red corpuscles an orange-colored pigment is generally present which reacts to the stain for iron. A large number of very large phagocytes are present in most cases. The average weight of the spleen was 0.46 gram heavier than the controls when chloroform was inhaled, and 0.59 gram and 0.17 gram heavier when injected and when given by stomach respectively. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of the hearts examined.

Journal of Tropical Medicine and Hygiene, London

January 16

- 13 Possible Plurality of Species of the Trypanosomes Affecting Man in Africa. A. Castellani.
- 14 Trypanosome Diseases of Domestic Animals in Uganda. Sir D. Bruce, A. E. Hamerton, H. R. Bateman and F. P. Mackie.
- 15 The Human Trypanosome of Northern Rhodesia. L. E. W. Bevan.

Clinical Journal, London

January 11

- 16 Cancer of the Rectum. F. C. Wallis.
- 17 Acute and Chronic Inflammatory Lesions of Bone. G. E. Waugh.
- 18 The Acute Abdominal Case from the Standpoint of a Country General Practitioner. F. W. Langridge.

January 18

- 19 Gait as an Aid to Diagnosis. H. H. Tooth.
- 20 Cancer of the Rectum. F. C. Wallis.
- 21 Value of Electricity in Treatment of Some Abdominal Diseases. H. Manders.

Medical Press and Circular, London

January 11

- 22 The Help of Roentgen-Rays in Diagnosis of Diseases of the Chest. A. H. Pirie.
- 23 Treatment of Suppurative Middle Ear and Mastoid Disease by Conservative Mastoid Operation. C. A. A. Dighton.
- 24 The Traumatic Neuroses. T. R. Glynn.

Archives des Maladies de l'App. Digestif, Paris

November, IV, No. 11, pp. 626-688

- 25 *Hemorrhagic Colitis. A. Mathieu.
- 26 *Syncope in Chronic Colitis. (Les pertes de connaissance dans les réactions d'origine colique.) M. Millon and L. Marre.
- 27 Rapidly Fatal Case of Diabetes Mellitus with Minimal Lesions in the Pancreas. (Cas de diabète maigre.) M. Labbé, L. Lavastine and G. Vitry.
- 28 Serodiagnosis of Echinococcus Disease of the Liver. A. Bauer.

25. Hemorrhagic Colitis.—Mathieu summarizes the treatment for hemorrhage in the course of simple dysenteriform colitis as merely rest in bed, dieting, moist heat to the abdomen, lavage of the intestines and a mild purge after two or three days. The lavage should be done with an isotonic fluid at a temperature of 38 or 40 C., not injecting more than a liter at most and never with a pressure over from 20 to 40 centimeters. Done in this way, the bowel is cleansed and soothed, with no fear of exaggerating the tendency to spasm. In the severer cases he gives two injections a day of a 0.02 per cent. solution of silver nitrate, seldom exceeding a total of four or five such injections. In the chronic forms, local applications or operative measures may become necessary. The record of the latter as he reviews it is not very encouraging and the later history is not known of many of the patients cited as cured.

26. Syncope in Chronic Colitis.—Millon and Marre have encountered cases of transient loss of consciousness in the course of an exacerbation of the intestinal trouble inducing symptoms of severe indigestion. In other cases the syncope, followed by a small diarrheic passage, is the only sign of trouble. The syncope is brief and leave no traces, but the dread of them may become an obsession in time, and they might prove dangerous in persons inclined to arteriosclerosis or nephritis. Treatment should seek to soothe the nervous system as it is peculiarly irritable in these patients, besides treatment of the intestine. Four cases in adults are reported in detail. The oldest was a man of 67.

Annales des Maladies des Org. Génito-urinaires, Paris

December 1, XXVIII, No. 23, pp. 2115-2208

- 29 *Reflex Nervous Phenomena in Urinary Apparatus in Appendicitis. F. de Meo.

December 15, No. 24, pp. 2209-2304

- 30 *Myomatous Tumors in the Bladder. (Tumeurs musculaires lisses de la vessie.) J. Heitz-Boyer and Doré. Commenced in No. 22.
- 31 *Treatment of Kidney Disease by Nephrectomy. Pausson.

29. Symptoms in Urinary Apparatus from Appendicitis.—De Meo relates the particulars of six cases in Italian literature and two from his own experience in which reflex nervous phenomena, kidney colic, pain during micturition, bladder tenesmus, cystalgia, smarting in the urethra or priapism were the first signs of trouble which later proved to be appendicitis. The inflammation in the appendix evidently acted on the vesical, renal, hypogastric or pubic plexus, inducing functional disturbance. In his cases the urinary symptoms were explained by discovery of an abscess between bladder and rectum, evidently of appendicitic origin, although there was no history of appendicitis. Both patients were young men. In two of the cases from the literature these attacks of pain in the right inguinal region had been ascribed to rheumatism, the fourth simulated kidney colic with strangury. As no improvement followed a month of medical measures, the appendix was removed and all symptoms ceased. Acute retention of urine was also the predominant symptom in another case in which the lesion proved to be an encysted abscess in the pouch of Douglas, the appendicitis having run a latent course.

30. Myomatous Tumors in the Bladder.—Of the twenty-three patients given operative treatment, two died within a few days of peritonitis and one from unknown cause. The literature on the subject is reviewed in detail.

31. Indications for Nephrectomy.—Pausson concludes his review of the results of the functional tests as applied to determine the condition of the other kidney with the statement that none of them gives positive information. The confidence in the functional capacity of the remaining kidney cannot be more than presumptive at present. So many factors are involved that it is impossible to estimate them all with certainty.

Archives de Médecine des Enfants, Paris

December, XIII, No. 12, pp. 881-986

- 32 Inconvenience and Dangers of Milk from Cows Fed with Factory Waste. E. C. Aviragnet.
- 33 *Mucomembranous Colitis. A. Arraga.
- 34 After-Treatment of Congenital Dislocation of the Hip Joint Reduced by the Bloodless Method. (Luxations congénitales de la hanche.) P. V. Badin.
- 35 Case of Deforming Fibrous Osteitis with Osteomalacia. S. de Souza.

33. Mucomembranous Colitis.—Arraga says that this affection is extremely common in Argentina among children, and that his experience has demonstrated that it is a manifestation of an inherited arthritic tendency. This primary arthritic tendency he ascribes to overfeeding, especially with meat and eggs. Children born with this tendency manifest it early by green diarrhea alternating with constipation. The tendency to constipation and colitis may remain through life—the result of a functional insufficiency of the digestive organs, liver and ductless glands. Overfeeding with meat and eggs aggravates this congenital tendency. Women nursing such children should subsist largely on a milk-vegetable diet, he affirms, and weaning should be postponed as late as possible.

Lyon Médical, Lyons

December 11, CXV, No. 50, pp. 981-1024

- 36 *Treatment of Pulmonary Tuberculosis by Artificially Induced Pneumothorax. J. Courmont.
- 37 Prophylaxis of Communicable Disease in the Lyons Schools. C. Lesieur.

December 18, No. 51, pp. 1025-1080

- 38 Advantages of Appendicostomy: Two Cases of Intestinal Obstruction. G. Gayet.
- 39 Classification of School Children Who Cannot or Will Not Study. (Essai de classification des enfants paresseux.) E. Weigert.

36. Artificially Induced Pneumothorax in Tuberculosis.—Courmont reports benefit from immobilization of the lung in three patients out of his series of four thus treated. In the one unsuccessful case the tuberculous lesions were not

restricted to the lungs and larynx. The method is necessarily limited to cases in which only one lung is involved and the adhesions are not too pronounced. Even ulcerative processes in the larynx may heal when expectoration from the diseased lung stops—this point is instructively brought out in his case-reports. Lesions in the intestines do not seem to be influenced by the suppression of the sputum. In three other cases, the method was found inapplicable. The nitrogen was injected in amounts ranging from 500 to 1,300 c.c., a total of 9,800 c.c. being injected in the first case between April 13 and September 1, in eleven injections. The total was 12,950 c.c. in seventeen injections in the course of seven months in the second case. The third patient was so much improved by five injections in about six weeks that he considered himself cured and declined further treatment.

Presse Médicale, Paris

January 11, XIX, No. 3, pp. 17-24

- 40 *Myocarditis and Sudden Death in Scarlet Fever. E. Weill and G. Mouriquand.

40. **Fulminating Scarlet Fever.**—Weill and Mouriquand found intense lesions of acute myocarditis at necropsy on a young man who died suddenly on the fifth day of severe scarlet fever which had developed suddenly in the midst of apparent health. The heart findings indicated serious trouble from the first.

Revue de Gynécologie, Paris

December, XV, No. 6, pp. 513-632

- 41 External Male Pseudohermaphroditism; Suppurative Orchitis Simulating Appendicitis. G. Gayet and Jalifier.
42 *Fibromyomas of the Stomach; Two Cases. P. Peugniez and L. Jullien.

42. **Gastric Fibromyomas.**—Peugniez and Jullien report two cases; in both the operation was done on the assumption of cancer. Both patients have been apparently cured by excision. In some of the cases on record the tumor after a long benign phase seemed to enter on a period of rapid malignant growth.

Revue de Médecine, Paris

December, XXX, No. 12, pp. 937-1012

- 43 Mycosis Due to the *Oidium eutaneum*. (Oidionmycose gommeuse ulcéreuse disséminée. Mycose nouvelle.) de Beurmann, H. Gougerot and R. Vaucher.
44 Pathogenesis of Cancer. (Maladie et mutation.) M. Jankelevitch.
45 Lesions of the Pancreas in Infantile Gastro-Enteritis. M. Salomon and P. Halbron.
46 Hippocratic Finger with Cardiovascular Disease. (De l'hippocratisme.) J. Baur.

Semaine Médicale, Paris

January 18, XXXI, No. 3, pp. 25-37

- 47 *The Tourniquet Sign of Disease with Hemorrhagic Manifestations. (Le signe du lacet.) C. Frugoni and F. Giugni.

47. **The Tourniquet Sign of Hemorrhagic Disease.**—For more than four years Frugoni and Giugni have been studying the local phenomena which develop in an affection with a tendency to hemorrhagic manifestations when a slightly constricting band is applied to the limb above. The band is not drawn tight enough to induce actual arterial hyperemia, but merely enough to cause the veins to be a little more prominent, and any tendency to a hemorrhagic diathesis is then rendered locally evident. They relate their experiences with this test applied to patients with various hemorrhagic affections, comparing the findings with those of tests of the various properties of the blood. The trouble does not seem to be with the blood itself so much as in the walls of the vessels. In some of their patients a slight traumatism at one point was followed by hemorrhagic manifestations all over the body except the face, and no means could be devised to induce them in the face; evidently the vessel walls here are exceptionally stout.

Archiv für Kinderheilkunde, Stuttgart

LV, Nos. 1-2, pp. 1-160. Last indexed February 11, p. 462

- 48 Research on the Thymus and Its Importance in Pediatrics. H. Klose.
49 *Tuberculosis and Tuberculin Treatment in Infancy and Early Childhood. II. P. Rohmer.
50 Cutaneous Thrush in Infants. (Soormykose der Haut im frühen Säuglingsalter.) J. Ibrahim.
51 Toxic Eruption with Bronchiectasia. E. Ruediger.
52 *Idiosyncrasy of Infants to Cow's Milk. R. Halberstadt.
53 Calomel as a Diuretic. F. v. Szontagh.

49. **Tuberculin Treatment of Infants and Young Children.**—Rohmer reports the details of six cases in which Schlossmann's method of tuberculin treatment with comparatively large doses (0.0002 gm.) was applied. The outcome was unfavorable in every instance, although at first marked benefit seemed to be derived; the underlying tuberculosis however continued its course practically unmodified. The large doses of tuberculin seemed to exert an injurious influence on the organism as a whole, bone lesions developing in some of the children while in one the tuberculosis flared up in a fulminating form after an intercurrent attack of measles.

52. **Idiosyncrasy to Cows' Milk in Infants.**—Halberstadt reports six cases and is inclined to regard idiosyncrasy to cows' milk as a symptom of a congenital constitutional anomaly. It does not manifest itself during the first days of life but develops gradually, like pylorospasm, and seems to be somewhat in the nature of anaphylaxis. The different elements of the milk seem to be at fault in different cases but the constitutional unfitness is the primal cause.

Archiv für klinische Chirurgie, Berlin

XCIV, No. 1, pp. 1-201. Last indexed Dec. 31, 1910, p. 2312

- 54 Surgery of the Biliary Apparatus. (Beiträge zur Chirurgie des Cholelithiasis und Hepaticus einschl. der Anastomosen zwischen Gallensystem und Intestinis.) W. Eichmeyer. Concluded.
55 Fracture of the Radius. II. Zuppinger.
56 Hernia of the Bladder. R. Felten.
57 Importance and Treatment of Congenital Bladder Diverticulum. B. N. Chozoff.
58 Dosage in Radiotherapy of Tumors. (Massendosierung bei Tumoren.) A. Hessmann.
59 Metastatic Tumor in Pleura with Primary Racemose Sarcoma of Cervix Uteri. A. Heddäus.
60 *Results of Operative Treatment of Diffuse Peritonitis. II. Schmid.
61 Experimental Transplantation of Thyroid and Parathyroids. (Ueber homoioplastische Epithelkörperchen- und Schilddrüsenverpflanzung.) H. Leischner and R. Köhler.
62 Echinococcus Disease of the Bones. (Knochenechinokokkus.) I. Titov.

60. **Operative Treatment of Diffuse Peritonitis.**—Schmid reviews the experiences in this line in Körte's surgical service at Berlin. Rigidity of the abdominal walls and local pain indicate the danger and demand immediate operation. To wait until further signs of peritonitis develop, after perforation of the stomach or other organ or appendicitis, is to court disaster. Perforation of lower parts of the intestines has a graver prognosis. The outcome in all cases depends more on the stage of the peritonitis than on technic. Peritonitis pus is peculiarly dangerous for loose cellular tissue, fat tissue and for the fascia of the abdominal wall. The abdomen can master small amounts of infectious material but succumbs when confronted with too much. Prevention and early operation are the watchwords of success, he declares. In 358 operative cases the mortality among the 235 patients in whom the abdomen was rinsed out—which includes all the severer cases—was 40 per cent., while it was 42 per cent. in the others. The mortality was 25 per cent. for both groups in the cases in which the operation was done within three days after the onset of trouble. It was 55.4 per cent. in the "rinsed" patients operated on by the fourth day or later, while it was 69.2 per cent. in the corresponding group of the "non-rinsed" patients. This difference speaks volumes, he declares, in favor of rinsing out the abdominal cavity as the second group contained all the milder cases.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVIII, No. 2, pp. 175-302. Last indexed January 14, p. 159

- 63 Comparative Research on Acid-Fast Bacilli. (Vergleichende Untersuchungen mit den praktisch wichtigsten säurefesten Bazillen.) N. Jancso and A. Elfer.

Berliner klinische Wochenschrift

January 2, XLVIII, No. 1, pp. 1-48

- 64 *Typical and Atypical Pulmonary Tuberculosis. (Lungenphthise.) D. v. Hansemann.
65 Malignant Syphilis and Salvarsan. A. Buschke.
66 Cutaneous Reaction of Syphilids Under Salvarsan. R. Kalb.
67 *Salvarsan Given the Nursing Mother for Inherited Syphilis in Infants. J. Peiser.
68 Radiography of the Lungs. (Die anatomischen Substrate der Lungenröntgenogramme und ihre Bedeutung für die Röntgendiagnostik der Lungentuberkulose.) M. Cohn.
69 *Reaction in Urine of Breast-Fed Infants. S. Engel and L. Turnau.
70 Present Status of Tropical Diseases. (Fortschritte auf dem Gebiete der Tropenkrankheiten.) H. F. W. Hoffmann.

January 9, No. 2, pp. 49-100

- 71 Proctoscopy and Anemia from Varices in Upper Rectum. (Recto-Romanoskopie und schwere Anämien durch Blutungen aus hochsitzenden Varicen des unteren Dickdarms.) C. A. Ewald.
- 72 The Electrocardiogram with Displacement of the Heart. G. F. Nicolai.
- 73 Susceptibility to Bacterial Infection. (Bakterienempfindlichkeit und ihre Bedeutung für die Infektion.) F. Neufeld and H. Dold.
- 74 The "Interstitial Gland" of the Ovary Found in Certain Animals. (Die interstitielle Eierstockdrüse.) L. Fraenkel.
- 75 *Remarkable Urinary Concrements. (Ungewöhnliche Blasen- und Nierensteine.) M. Roth.
- 76 Brief Ethyl-Chlorid General Anesthesia. M. Behr.
- 77 Theory of Anaphylaxis. U. Friedemann.

64. **Atypical Tuberculous Processes in the Lung.**—Hansmann believes that important information as to the curability of pulmonary tuberculosis can be derived from the study of necropsy findings in deaths from various causes. Diseases which do not show a tendency to spontaneous cure are not amenable to therapeutics. Therapeutics, therefore, he says, is engaged merely in cooperating with and fostering the natural tendency to heal. Unless the anatomic findings show a tendency to a spontaneous cure under favorable conditions, little can be hoped from treatment; he has never known of a case of acute miliary tuberculosis which terminated in recovery. The same can be said of acute disseminated cheesy bronchitis. Anatomic findings suggesting even a beginning of a healing process with these affections have never yet been encountered, to his knowledge. With tuberculous apical processes no recovery is known when the lesion extended below the second or third rib; the most that can be expected from treatment in these cases is to prolong life. It is impossible to destroy all the tubercle bacilli in such advanced cases. In regard to the importance of mobilizing the superior aperture—the Freund operation—he admits the usefulness of curing the rigidity of the part but thinks that this can be accomplished by gymnastics—exercises of the muscles attached to the upper rib. He emphasizes in particular the importance of this mobilization as a prophylactic measure in families with a history of tuberculosis and an inherited tendency to stenosis of the superior aperture. He is convinced that if orthopedic measures of this kind could be commenced about the age of 12 and continued to 21, the development of typical pulmonary tuberculosis might be avoided in many cases. It is the task of the family physician to warn the parents of the necessity for such treatment for their children, especially when they are growing fast and the chest is flat and narrow. In conclusion he insists anew on the necessity for antisyphilitic measures when a tuberculous process develops in a syphilitic. Typical pulmonary tuberculosis always begins in the apex, he states, but atypical forms are encountered almost invariably in children and in the aged.

67. **Salvarsan in Inherited Syphilis.**—Peiser refers to four cases in recent literature in which salvarsan taken by the nursing mother had a beneficial effect on the infant with severe manifestations of syphilis. He then describes two cases and refers to four recently reported in which no benefit was apparent although the mothers were given salvarsan systematically.

69. **Urine Reaction in Breast-Fed Infants.**—Engel and Turnau state that a black precipitate forms in the urine of breast-fed infants when 15 or 20 drops of a 2 per cent. solution of silver nitrate are added to 5 c.c. of the urine. The discoloration reaches its height in ten minutes or still earlier if the fluid is heated. There is no black discoloration with urine from bottle-fed infants.

75. **Urinary Concrements.**—Roth gives an illustrated description of a number of cases of remarkable kidney and bladder concrements and comments on the difficulty of differentiation when, as often happens, the symptoms are slight and misleading, or there may be no subjective symptoms. The main point is to bear the possibility of eventual stone formation in mind. In one of his cases nothing suggested kidney stone until the cystoscope revealed the source of the bleeding as in the kidney. Patients with hematuria are too apt to be lost sight of after the hemorrhage is over, and yet hematuria, he insists, is almost invariably the manifestation of some important urogenital affection. Mistakes will be avoided far more frequently if the cystoscope is used even

with apparently merely nervous symptoms on the part of the bladder. No one should be classed as a "sexual neurasthenie" until after exclusion of all other possible causes.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 1, XLI, No. 1, pp. 1-48

- 78 Salvarsan in Syphilis. E. Heuss.
- January 10, No. 2, pp. 49-80
- 79 Modified Definition of Spores. (Warum ist est berechtigt, der granulären Form des Tuberkulosevirus Sporencharakter zuzuschreiben?) W. Knoll.
- 80 Transfusion of Blood in Pernicious Anemia. Tièche.

Deutsche medizinische Wochenschrift, Berlin

January 12, XXXVII, No. 2, pp. 49-96

- 81 Syphilis in Rabbits. (Syphilitische Allgemeinerkrankung bei Kaninchen.) P. Uhlenhuth and P. Mulzer.
- 82 *Poisonous Butterine. (Verwendung gesundheitsschädlicher Stoffe in der Margarinefabrikation.) W. P. Dunbar.
- 83 *Fever with Malignant Kidney and Suprarenal Tumors. J. Israel.
- 84 *Phenolphthalein Test for Occult Hemorrhage in Gastro-Intestinal Tract. I. Boas.
- 85 Relations Between Tabes Dorsalis and Leptomenigitis. M. Astwazaturow.
- 86 Bactericidal Properties of Effusions. S. Weil.
- 87 Nail Extension. T. Vocekler.
- 88 Plastic Operation with Functional Cure of Severe Trapezius Paralysis. O. Rothschild.

82. **Poisonous Butterine.**—Dunbar's communication, giving the results of his research, was summarized in the Berlin Letter, February 11, page 435. He warns of the danger of new poisonous ingredients being used in the production of articles intended for food as the manufacturers go farther afield in search of less expensive ingredients for their products. (As stated in the Berlin Letter, January 7, page 54, the firm manufacturing the poisonous butterine advertised a reward for "discovery of the person who had adulterated the product," suggesting that it was a criminal act of revenge. But Dunbar traced the disturbances to a new ingredient used in making the butterine.)

83. **Fever With Malignant Tumors in Kidneys or Suprarenals.**—Israel has encountered eighteen cases in which a tumor in a kidney or suprarenal was accompanied by intermittent or relapsing fever. In some of the cases the fever was for a long time the only sign that anything was wrong. In twelve of the cases the cancer was confirmed by an operation and he gives the temperature curve of some in this group, showing the complete disappearance of all tendency to fever after removal of the cancer, and its persistence without much modification after merely palliative or partial operations. With metastasis the fever flares up again as also if some hitherto latent cancer germs rouse to malignant energetic growth. The outcome was less favorable in the febrile than in the non-febrile cases. The importance of suspecting cancer with fever of unknown cause is illustrated by the case of a patient at the Trousseau hospital at Paris, with a large tumor in the left kidney and intermittent fever, who was long treated on the assumption of malaria and enlarged spleen. One of Israel's patients with hectic fever but no signs of pulmonary or bronchial tuberculosis was sent to a sanatorium for lung diseases until development of signs pointing to a tumor in the kidney. Israel comments on the scanty literature on fever with renal cancer and hypernephroma, some of the most experienced clinicians not even mentioning the subject; but he declares that this must be due to inadequate study of the cases or misinterpretation of the findings or to too brief period of observation before the operation. In some patients the fever always accompanied or just preceded hematuria. The fever was observed with cancers of different histologic structure. The rapid growth of the tumor, propagation to the adipose capsule, veins or adjoining tissue favor the development of a febrile temperature but are not indispensable for it.

84. **The Phenolphthalein Test for Occult Gastro-Intestinal Hemorrhage.**—Boas remarks that the benzidin test for occult bleeding is so sensitive that the findings are liable to be misleading; even having eaten a little meat, days before, may lead to a positive response. On the other hand, the unmodified guaiacol test is not sensitive enough. Midway between them stands the phenolphthalein test which he commends to the general practitioner as more reliable than either while it

is extremely simple, the reagents used are durable, and the color reaction is so pronounced that it is impossible to mistake it. He tabulates the comparative findings with the three tests and describes the technic. The stool is rubbed up in water till it forms a thin fluid. Into this a little acetic acid is stirred; ether is then added, and the reagent glass is slowly moved to and fro until the contents are well mixed. The ether is then decanted into another reagent glass and 20 drops of the phenolphthalin reagent are added, the whole is shaken and then 3 or 4 drops of hydrogen dioxid are added. In the presence of blood the phenolphthalin is oxidized into phenolphthalein and as it is in an alkaline medium the fluid turns pink. With considerable blood the pink tint persists for some time, with very little blood the pink tint soon fades away. The reagent is made by dissolving 1 gm. of phenolphthalein and 25 gm. of potassium hydroxid in 100 gm. water and reducing with 10 gm. of pulverized zinc. The resulting red fluid is stirred or shaken over a small flame until it is entirely decolorized, the phenolphthalein being reduced to phenolphthalin. It is then filtered when it is ready for use and keeps indefinitely. With much admixture of blood the reaction is pronounced even without addition of hydrogen dioxid. No meat should be eaten for a few days before the test.

Deutsche Zeitschrift für Chirurgie, Leipsic

December, CVIII, Nos. 1-2, pp. 1-220

- 89 Extradural Surgical Anesthesia. A. Læwen.
90 *Origin and Treatment of Ischemic Muscular Contracture and Gangrene. B. Bardenheuer.
91 Plastic Technic After Amputation of Breast. L. Heidenhain.

90. **Treatment of Ischemic Contracture and Gangrene.**—Bardenheuer devotes about 155 pages to his study of the origin and treatment of these conditions illustrating the various points by examples from his own experience. The prognosis depends, he says, on the period in which the ischemic myositis or contracture is discovered and suitable treatment applied. This should include search for the central, causal, retro-muscular or retrofascial hemorrhage probably responsible for the trouble or measures to prevent its development, treatment of the primary acute ischemic myositis and means to correct the resulting contracture. The conditions are graver in different regions.

Medizinische Klinik, Berlin

January 8, VII, No. 2, pp. 45-84

- 92 Gonorrheal Pyosalpinx. E. Opitz.
93 Chronic Intestinal Catarrh. (Leitsätze über die Diagnose, Pathogenese und Aetiologie des chronischen Darmkatarrhs.) E. Schmidt.
94 Functional Tests of the Stomach in General Practice. (Soll der praktische Arzt diagnostische Magenfunktionsprüfungen vornehmen?) F. Goldschwend.
95 *Improved Serodiagnosis of Syphilis. (Serodiagnose der Syphilis mittels Präzipitation von Natr. glycochol. unter Heranziehung des Cholesterins.) O. Herman and A. Perutz.

95. **Improved Serodiagnosis of Syphilis.**—Herman and Perutz having simplified the precipitation test devised by Elias, Neubauer, Porges and Salomon report positive results in 108 out of 134 cases of syphilis, while the Wassermann reaction was positive in only seventy-two out of 102. Their test consequently gave 4 per cent. more positive reactions than the Wassermann technic. In eighty-nine control cases traces of precipitation were observed in only a single instance, the findings in all the other cases being negative. They commend their modification as practically reliable, much simpler than the Wassermann test and as destined to wide application in general practice for the serodiagnosis of syphilis. The technic requires only a little blood, which is allowed to stand for a few hours. The clot is then detached with a platinum wire, the serum is centrifugated, the sediment removed, and the serum is then inactivated by heating exactly to 65 C. for half an hour in the water bath. The serum should not be powerfully hemolytic. The reagent is a mixture of 2 gm. sodium glycocholate with 0.4 gm. cholesterin and 95 per cent. alcohol to 100 c.c. This mixture is diluted with distilled water, 1 to 20. The second reagent is a freshly made 2 per cent. aqueous solution of sodium glycocholate. To 0.4 c.c. of the serum are added 0.2 c.c. of the twenty times diluted reagent 1, and 0.2 c.c. of the 2 per cent. sodium glycocholate solution, and the whole is well shaken. The test tube is then plugged with cotton and allowed to stand quietly at room

temperature for twenty-four hours. After twenty-four hours distinct precipitation indicates a positive reaction but if the fluid is merely turbid with fine flakes and no precipitate thrown down the reaction is regarded as negative. The findings in 223 cases are tabulated for comparison, the non-syphilitic cases showing, with a single exception, a constantly negative reaction.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXII, No. 3, pp. 311-510. Last indexed January 28, p. 312

- 96 Drumstick Finger with Subclavian Aneurysm. (Entstehung der einseitigen Trommelschlägelfinger bei Aneurysmen der Arteria subclavia.) E. Ebstein.
97 *Inflammation of Adipose Capsule of Kidney. (Entzündung der Nierenfettkapsel.) W. Bussenius and C. Rammstedt.
98 *Tuberculous Articular Rheumatism. (Ueber einen autoptisch verifizierten Fall von tuberkulösem Gelenkrheumatismus.) E. Melchior.
99 *Syphilitic Spondylitis. (Syphilitische Wirbelentzündung.) H. Ziesche.
100 Surgical Treatment of Intestinal Syphilitic or Cancerous Stenosis. H. Schmilinsky.
101 Hyperplastic Muscles and Salivary Gland Disease. (Speicheldrüsenerkrankung und Myopathie.) S. Schoenborn and K. Beck.
102 *Postoperative Paralysis of Stomach. (Postnarkotische Magenlähmung.) A. Payer.
103 Histology and Functions of Gastric Mucosa. (Magenschleimhaut, insbes. bei chronischen Erkrankungen des Magens.) J. E. Schmidt.

97. **Inflammation of Adipose Capsule of Kidney.**—Bussenius and Rammstedt remark that the syndrome resulting from mere congestion and infiltration of the adipose capsule has not been much studied. Soldiers are especially liable to it as result of contusions, kicks, riding unruly horses, lifting heavy weights, etc. Sometimes the syndrome comes on insidiously but more often it comes on abruptly with chill and high fever. The temperature rises in a series of peaks, then remains continuous for a day or so, then becoming remittent with low morning and high evening curves. Even a difference of 2 C. (3.6 F.) between morning and evening temperatures is not conclusive of suppuration. The pulse-rate is generally faster than the temperature would warrant, and sweats may also be observed. The digestive apparatus usually shares in the disturbance, and constipation follows after a period of diarrhea in some cases. Sudden pain is characteristic, not always in the kidney itself, but below, and pressure increases the pain. It may radiate to the stomach, bladder, cecum, perineum or genitals. The chief tender point is found just below the twelfth rib and pressure here generally brings on the pain anew, as also deep breathing, coughing and moving the trunk. There is some swelling of the lumbar region unless the trouble is in the front of the capsule. Seven cases are reported in detail. They show that the patients can recover under medical measures alone in some cases. The general condition is the criterion; if the patient does not seem to be growing worse, expectant treatment is justified. Repeated exploratory punctures are useful, and the hot-air apparatus frequently renders good service. In the authors' cases, potassium iodid seemed to have a decided influence in promoting absorption of the products of the inflammation. Under these measures three of the patients recovered entirely, although slowly, but in the other cases the process passed into a suppurative stage, and recovery followed evacuation of the pus. They advise operative treatment, even if no pus is evident, if the general condition seems to be growing worse and the patient weaker. The pus may make its way into the intestines, bladder or ureter and a spontaneous cure may thus be realized.

98. **Tuberculous Articular Rheumatism.**—Melchior remarks that only four cases have been published to date in which the tuberculous nature of the articular rheumatism has been established beyond question, and to this list he now adds a fifth. The patient was a girl of 19 with glandular tuberculosis as a child and later a tuberculous process in the lower jaw compelling total resection in 1909. Twelve days after the operation, moderate fever developed with multiple acute swelling of joints, the syndrome deceptively resembling that of acute articular rheumatism except for the relatively low fever, the slight painfulness of the lesions in the joints, their torpid character and the absence of the sweats characteristic of ordinary acute articular rheumatism. Tubercle bacilli were found in the blood. The joint lesions seemed to subside

spontaneously so that by the end of three months nothing was left of them except a slight thickening of one knee. The patient died in a few months from amyloidosis, independent of the joint processes. Necropsy revealed tuberculous nodules in the synovial membranes of the joints which had been involved. During life inoculation of animals had been negative, showing that the presence of tubercle bacilli in the synovial membrane does not necessarily imply their presence in the effusion in the joint.

99. Syphilitic Spondylitis.—Ziesché reports a case and reviews recent literature on this subject, tabulating the details of eighty-six cases he has found on record. The affection is generally considered as unusually malignant but this, he thinks, is because it is not recognized until it is in an advanced stage. In the case of a child the condition received treatment early and improvement was soon realized. In this case there was not the slightest reason for suspecting syphilis; the first sign of trouble was a gibbus in the region of the first and second lumbar vertebræ. The tuberculin tests were negative but the Wassermann reaction was positive although no swollen glands could be discovered. Investigation disclosed syphilis in the child's nurse. Mercury and iodid brought rapid improvement. Ziesché is convinced that syphilitic spondylitis is more frequent than generally suspected; in the mild cases the lesions heal and nothing is known of them. In this compilation the age was mentioned in fifty-three cases, and 28 per cent. of the patients were between 30 and 40; 22.7 per cent. under 10, and 11.3 per cent. between 50 and 60. The cervical vertebræ alone were involved in sixty-one of the eighty-eight cases; the thoracic in twelve; both in one, and the lesions were diffuse in four cases. In over 41 per cent. only one vertebra was affected, two vertebræ in over 28 per cent., and four in 5 per cent. In eight of the sixty cases of syphilis of the cervical vertebræ death occurred suddenly. Thirty-eight of the patients recovered under appropriate measures although left with more or less functional disturbance. Mercury and potassium iodid should be given in large doses, he says, even transient salivation should not be allowed to interrupt the treatment, and the iodid should be continued for a time after apparent recovery.

102. Acute Dilatation of the Stomach After General Anesthesia.—Payer states that a fatal termination occurred in over 53 per cent. of the cases of this trouble in the literature and his own experience. The diagnosis in time is more important here than in almost any other affection, he emphasizes, as change of position is the only and the efficient cure. The trouble has been called by twenty-one various names, including pseudo-ileus, mesenteric incarceration of the bowel and also acute paralysis of the stomach. The initial shock, the increased peristalsis and antiperistalsis and secondary acute dilatation of the stomach form the general description of the syndrome, but Payer is convinced that the trouble is in reality a primary paralysis of the stomach from the toxic action of the anesthetic. For several years he has been examining the stomach functioning before and after operations under general anesthesia, and he found more or less of a tendency to paralysis of the stomach in nearly every instance. This paresis is accompanied by gastrorrhœa and each in turn aggravates the other; if the patient lies on his back serious trouble may follow while if he is turned on his right side the stomach contents flow spontaneously out of the stomach. Atony of the stomach is almost invariably evident as the patient rouses from the anesthetic; sometimes the lower margin of the stomach will be found below the umbilicus, but this atony generally subsides so that no trace is left after from twelve to twenty-four hours. Postoperative vomiting is directly connected with this atony; in every case in which it persisted longer than this, the atony also persisted. The critical period is from the third to the fifth day, when a more liberal diet is allowed. Even although there may be no symptoms, investigation will show how the lower margin of the stomach drops lower, the effect being more pronounced the shorter the interval since the anesthesia. Errors in diet have a marked influence on the development of the paresis, and children are especially liable to it. Even a week after the anesthesia, acute dilatation of the stomach and disten-

tion may occur. Drainage of the peritoneal cavity is also liable to affect the stomach and induce atony, as he observed in two striking cases—an appendicular abscess in a child and a liver abscess in a man. Payer now makes a point of having the patient lie on the right side if there is any tendency to vomiting after from twelve to twenty-four hours. This generally answers the purpose but if disturbances persist he gives a chamomile tea enema, with the patient still lying on the side, repeating the enema frequently at need, giving nothing by the mouth. In very severe cases the knee-chest position was the only means of final relief; this never failed. He never had to resort to lavage of the stomach. During the last two years he has been giving oxygen freely in connection with the anesthesia, to paralyze the toxic action of the chloroform, and imagines that he has noted a favorable influence on the gastric paresis. This postnarcotic gastric paralysis, as he calls it, has been observed after the most diverse operations. He lists also the predisposing factors as they have been recorded in the literature and also the factors that proved the last straw. The latter list includes overfilling of the stomach with food or fluids, the toxic action of veronal, or of scopolamin, dread of the operation, abdominal straining, compression of the abdomen by a plaster cast, tamponing the abdominal cavity (Nakahara), compression of the duodenum by tampons, wandering kidney or liver, drastic purgative (Jacoby), and saline purges, increasing the stomach content by osmosis (Selby).

Monatsschrift für Kinderheilkunde, Leipsic

IX, No. 8, pp. 383-446. Last indexed January 7, p. 82

- 104 *Formula for Estimating General Condition of Infants. (Formel zur Beurteilung von Säuglingen in bez. auf ihren Allgemeinzustand.) J. Bauer.
- 105 Metabolism of Infants with the Exudative Diathesis. F. Steinitz and R. Weigert.
- 106 Lessening of Sensibility to Opium with Increasing Age of Laboratory Animals. (Empfindlichkeit verschieden alter Tiere gegen die Opiumalkaloide.) E. Döbeli.
- 107 Advantages of Large Doses of Antitoxin in Diphtheria. I. Wickman.
- 108 *After-History of Children with Eczema. (Schicksal von Ekzemplkindern.) E. Moro and L. Koll.
- 109 Leukemia with Skull Tumor in a Year-Old Child. O. Herbst.

104. Formula for Estimating General Condition of Infants.—Bauer thinks that a good estimate for comparison can be obtained by dividing the weight in grams by six times the length in millimeters, plus three times the age in days. The formula for this is: $W \div 6(L + 3D) = X$. Weight $\div 6$ (Length + 3(Age in days)) = the unit of health.

108. After-History of Children with Eczema.—Moro and Koll have traced the fate of sixty-three boys and thirty-seven girls between 3 and 11, known to have suffered from chronic eczema during infancy. The majority were found apparently healthy. No special tendency to the rheumatic or gouty diathesis could be discovered in these children or their parents and no evidence of special overfeeding. Another point brought out is the frequency of spasmophilic phenomena in infants with the exudative diathesis. The coincidence is too striking to be merely casual; it seemed rather as if both were clinical manifestations of one and the same diathesis. The total findings are tabulated under various headings and compared with similar data from control groups.

Münchener medizinische Wochenschrift

January 10, LVIII, No. 2, pp. 65-120

- 110 Chemical Composition of the Nucleus of the Cell. (Chemische Beschaffenheit des Zellkerns.) A. Kossel.
- 111 *Gastrospasm. R. Waldvogel.
- 112 Hemagglutinin Reaction in Serum Sickness. F. Bauer.
- 113 *Premonitory Symptoms of Puerperal and Postoperative Thrombosis and Embolism. H. Michaelis.
- 114 Salvarsan in Treatment of Syphilis of the Nervous System. H. Marcus.
- 115 Salvarsan in Syphilis. Favento.
- 116 Ictine in Syphilis. C. Ravasini.
- 117 *Direct Massage of the Heart with Apparently Fatal Chloroform Accident. (Erfolgreiche direkte Herzmassage bei Narkosenscheitod.) A. T. Jurasz.
- 118 Lead Poisoning from Glazed Earthenware Preserve Jars. (Bleivergiftung durch irdenes Topfgeschirr.) J. Wengler.
- 119 Subcutaneous Injections of Natural Radio-Active Mineral Water. F. Hirz.

111. Gastrospasm.—Waldvogel is convinced that true gastrospasm is a very frequent if not the most frequent affection of the stomach, far more common than the often mistakenly

diagnosed gastric ulcer, while the symptoms resulting from the gastrosplasm are more constant than those from altered secretion. The prognosis of gastrosplasm is favorable under appropriate treatment, that is, sedative measures to reduce the irritability of the innervation of the stomach and of the nervous system in general. He differentiates the condition by the level of the lower margin of the stomach after the patient has taken an effervescent mixture: 4 gm. of sodium carbonate and 4 gm. of tartaric acid, each in 100 c.c. of water. He gives the mixture two or three hours after breakfast or four or five hours after dinner and has the patient recline. Finger percussion from the nipple downward shows that the inflated stomach under these conditions, in a healthy and not excited person, always reaches to the umbilicus. The findings are much more reliable with this test, he thinks, than with bismuth and radiography. He accepts gastrosplasm when with the complaints of oppression, pain and eructation of pure air without odor or taste, the lower margin of the stomach is found to be a handbreadth above the umbilicus and only two or three fingerbreadths below the costal arch. The contraction of the stomach is most marked in the region nearest to the umbilicus. In some cases, the entire effervescent mass was explosively vomited—a further confirmation of the assumed gastrosplasm in the absence of palpable stomach lesions. The gastrosplasm is generally observed with clinical pictures in which spasms of all kinds are common. Lead poisoning is a frequent cause, and also abuse of tobacco, arteriosclerosis of the abdominal vessels and uremia. But chief of all causes is general neurasthenia, and various signs of nervous excitability and abnormally low nervous threshold generally accompany the gastrosplasm, such as tremor of the fingers and tongue, accelerated pulse, insomnia, etc. Gastrosplasm on the other hand is seldom encountered with hysteria. He adds that in one case the patient dropped tobacco completely after long abuse and a condition of atony of the stomach followed which lasted for several weeks.

113. Premonitory Signs of Thrombosis.—Michaelis had a fatal case of pulmonary embolism in the first week he set up practice for himself; this was followed by two non-fatal cases of embolism in less than six months and five others in two years. Since then he has not had thrombosis develop in any case and he is convinced that his careful prophylactic measures now are responsible in large part for the absence of this serious puerperal and postoperative complication. It always gives warning, he declares, in the form of a very slight rise in temperature, possibly transient and unnoticed unless the temperature is taken four times a day and the thermometer left in place for fifteen minutes at least. This alone permits the recognition of a temperature above 37.5 C. (99.5 F) at any time during the day. He does not say, of course, that every subfebrile temperature is an index of the onset of thrombosis, but that anything over 37.5 C. suggests the necessity for caution and close supervision of the patients, guarding them against any violent movement, any excitement or fright, and keeping the bowels loose with oil injections, and a mild laxative and suitable diet. If the patient is allowed to get up early, heedless of the warning of the slight subfebrile temperature, danger looms large. He is convinced that these measures and keeping the patient in bed for a week as quiet as possible, have contributed in no small proportion to the smooth recovery of many of his patients showing slight transient subfebrile temperature, thus tiding them past the danger stage.

117. Direct Massage of the Heart in Apparently Fatal Chloroform Accidents.—Jurasz reports another case in which the patient's heart and lungs ceased functioning suddenly during a long operation; by prompt massage of the heart, with the hand introduced in the laparotomy wound and squeezing the heart through the diaphragm, the vital functions were restored. The patient was a woman of 50 whose pylorus was being resected for cancer. All went well for an hour, but as the duodenal stump was being attended to, the apparently fatal accident occurred. Artificial respiration was kept up at the same time as direct massage was applied to the heart and oxygen pumped into the lungs. The heart showed the effect of the massage in two minutes and the patient began

to breathe spontaneously. The massage and artificial respiration were then suspended, but immediately the syncope came on again. The artificial respiration and heart massage were then resumed and in a minute the vital functions began again. The operation was then concluded under a few whiffs of ether, with no further disturbance. The pulse at the close was small but regular and recuperated under a few injections of camphor so that no further stimulants were necessary. Eight minutes in all elapsed between the first stoppage of the heart and its definite revival and no further disturbance in its functioning occurred although the operation was continued and more of the anesthetic given. Jurasz has found records of sixty-four cases of direct massage of the heart in the literature. The patients were resuscitated in two out of the twenty cases in which the massage was done through the chest wall and in eleven of the twenty-six cases in which the heart was massaged through the diaphragm. None of the patients survived when the hand was introduced through an opening made for it in the diaphragm. The total recoveries thus number thirteen or 23.3 per cent. of the cases, but temporary success was obtained in fifteen additional cases. He advises incising the epigastrium in five minutes at latest after arrest of the heart functioning and seizing the heart between the thumb and two fingers, to squeeze it rhythmically about sixty times a minute, supplementing this with artificial respiration and insufflation of oxygen if possible. The massage and artificial respiration should be kept up for a time after the first spontaneous movements. It is sufficient to sterilize the field with tincture of iodine, massaging with the gloved hand.

Therapeutische Monatshefte, Berlin

January, XXV, No. 1, pp. 1-80

- 120 *Digitalis in Arrhythmia. (Digitaliswirkung bei unregelmässiger Herzthätigkeit.) E. Edens.
- 121 Action of Digitalis on the Isolated Vessel Walls. R. Gottlieb.
- 122 Action of Strophanthin on the Heart. R. Gottlieb.
- 123 *Mode of Action of Certain Diuretics. E. Meyer.
- 124 Treatment of Furuncles. A. Schüle.
- 125 Treatment of Rhinophyma. F. Pels-Leusden.
- 126 Radiotherapy of Tubercles. H. Dietlen.
- 127 Serotherapy. (Therapeutischer Wert der Heilsera.) H. Riesel.
- 128 Salvarsan in Syphilis. L. Halberstaedter.

120. Action of Digitalis in Arrhythmia.—Edens states that the newer methods of examining the pulse and heart action have only strengthened our confidence in digitalis. When the drug fails to act—which used to be ascribed to impurities in the drug—we now know that it is because the heart affection is of a kind which is not influenced by digitalis. This very failure is proving a most important aid for diagnosis and prognosis, as he illustrates by a number of case-reports and tracings. The chief element in the action of digitalis, possibly, is the promotion of the circulation through the coronaries by the lengthening of the diastole and the better filling of the arterial system. When mechanical obstacles, such as aortic insufficiency, interfere or when the acceleration of the pulse is the result of nervous influences rather than of insufficiency of the heart muscle, then digitalis is liable to fail. The drug is thus liable to render good service, he asserts, in differentiating the various kinds of extrasystoles and in improving the contracting power of the heart. It may seem to induce a bigeminy rhythm of the entire heart but under its continued administration the rhythm alters so that the contraction of the auricle occurs simultaneously with that of the ventricle systole while the interval between the first and second systole persists unmodified. These are the cases described by Hering as "pseudo-alternans," and Edens has encountered five such cases; the digitalis induced bigeminy of the ventricles while retarding the auricle beat.

123. Action of Diuretics.—Meyer reports experiences which show that the improvement in the circulation liable under digitalis may be followed by very much increased elimination not only of urine but of sodium chlorid in the urine. In a case of extreme dropsy with only 360 c.c. of urine, under digitalis the urine increased in two days from 360 to 3,300 c.c. and the sodium chlorid from 2.9 to 26.4 gm. A similar remarkable diuretic action was observed in a case of tuberculous polyserositis under calomel and digitalis, the figures being almost identical with those in the first case. He

explains this action of calomel as due to the absorption of the fluid effused into the intestines under the influence of the calomel.

Therapie der Gegenwart, Berlin

January, LII, No. 1, pp. 1-48

- 129 Physical Measures as Aid in Treatment. (Ueber Gymnastik in der häuslichen Praxis.) A. Goldscheider.
- 130 *Inhalation of Superheated Air in Bronchitis. (Behandlung der Bronchitis und verwandter Zustände mit trockner, heisser Luft.) A. Schmidt.
- 131 *Infant Feeding in Health. (Ernährung des gesunden Säuglings.) M. Pfaundler.
- 132 *Resection of Spinal Nerve Roots for Spastic Paralysis. O. Foerster.
- 133 *Gastric Surgery. (450 in drei Jahren ausgeführte Magenoperationen.) H. Küttner.
- 134 *Treatment of Uterine Hemorrhage. B. Kroenig.
- 135 Politzer's Air Douche During Deep Inspiration. (Neuere Modifikation meines Verfahrens zur Wegsammachung der Eustachischen Ohrtrumpete.) A. Politzer.

130. Treatment of Bronchitis by Dry, Hot Air.—Schmidt has been systematically applying this measure for a number of years and has found it useful in simple chronic catarrhal inflammation of the larynx and bronchi; it is less effective in emphysema bronchitis and bronchiectasia, and is unreliable in tuberculous pulmonary and laryngeal processes. The patients inhale the superheated air through a tube with removable glass mouthpiece; the air is filtered through cotton, dried by passing through calcium chloride and heated in a small chamber inside a large, asbestos-coated stove heated by gas or electricity. A thermometer is mounted in the tube near the mouth. The patients experience great relief from the dry hot air thus inhaled through the mouth and expelled through the nose and in many cases the bronchitis seemed to be permanently cured.

131. Infant Feeding.—Pfaundler suggests, as a readily remembered formula for a healthy infant, taking cow's milk to one-tenth of its weight in grams, adding carbohydrates to one-hundredth of its weight, and water to bring the whole to 1 liter; the whole is divided into five portions and as much of each portion given as the child drinks with relish. This formula is useful from the second to the sixth month; and may be modified according to the child's individual digestive functioning. He prefers for the carbohydrate up to the fourth month sugar and oatmeal gruel, after the fourth month a 2 to 4 per cent. wheat, flour or barley gruel.

132. Resection of the Posterior Nerve Roots for Spastic Paralysis.—Foerster states that this operation has now been done in forty-five cases to date, including twenty-seven of Little's disease. The best results have been obtained in Little's disease, a large number of totally bedridden patients having been restored to their feet. Satisfactory results have also been obtained in a case of tuberculous spondylitis, in one of a traumatic transverse lesion of the spinal cord, and in spastic paralysis of the legs following hydrocephalus or encephalitis in childhood. The results were disappointing in the five cases of multiple sclerosis. In five cases of spastic paralysis of the arm after hemiplegia good results were obtained in three but only moderate benefit in a fourth. A fifth patient whose operation dates from eight weeks is already beginning to use his arm which had been totally paralyzed before the resection of the posterior roots. The majority of the patients have thus been benefited by the operation. The principles and technique were described in THE JOURNAL, Oct. 16, 1909, page 1342.

133. Operations on the Stomach.—Küttner comments on the exceptional prevalence of gastric cancer in southeastern Germany; in the last three years the surgical clinic at Breslau in his charge has had 426 patients with certain gastric cancer and 258 suspects, with 130 with non-malignant surgical gastric affections. About 30 per cent. of the cancer patients had suffered for years from stomach trouble while the others had noticed gastric symptoms only for less than six months. In 10 per cent. of the cases there had been no pain; in 20 per cent. no vomiting; in 7 per cent. no loss in weight—usually the patients had lost from 20 to 30 pounds. In a very few cases there had been nothing to attract attention to the stomach, the patient complaining merely of lassitude and loss of weight. In 31 per cent. the palpation findings were negative. There was no hydrochloric acid, or merely traces, in 73 per cent.; lactic acid was noted in 57 per cent., and traces of

bleeding in only 61 per cent. In a few patients both the motor and secretory functioning of the stomach seemed to be entirely normal. He performed a radical operation in 102 cases, using the Billroth II technique and Murphy button, silk sutures and plastic reinforcement of points exposed to special stress. The immediate mortality was 24 per cent. mostly from defective suturing or complications on the part of the lungs, pneumonia or cachexia. To date, after an interval of from one to three years, 37.5 per cent. of the patients are still living; the proportion of cured after three years was 30 per cent. in his previous series. Nearly half of the patients who had gastroenterostomy done for a callous gastric ulcer have succumbed since to gastric cancer, and only 16 per cent. are still in good health of those whose condition is known.

134. Treatment of Obstetric and Gynecologic Hemorrhage.—Among the other measures described, Krönig expatiates on the success of compression of the abdominal aorta by a tourniquet and pad applied to the artery. This seems to answer the same purpose as the Momburg technique while it does not have the unpleasant by-effects of the latter, he says. The aorta compressor devised by Gauss has been applied in 100 cases and has proved eminently useful; its unwieldiness however, gives the Momburg technique the advantage outside of an institution. He comments on the transformation in the conception of uterine hemorrhage in the last few years, the defective functioning of the ovaries now being incriminated rather than the uterus. Treatment therefore is directed more to the ovaries and curetting of the uterus is regarded now as a mere symptomatic measure, no longer causal treatment. The aim should be to act on the ovaries directly or indirectly by way of other ductless glands, possibly by organotherapy, or radiotherapy. The Roentgen rays have shown great efficacy in this respect, and are proving, he says, a powerful means of treating climacteric hemorrhage, menorrhagia during the forties and in hemorrhage with uterine myomas. Over seventy patients have been given systematic radiotherapy for myoma and, with the exception of two cases in which the course was not completed, all the patients were clinically cured and the growth of the myoma arrested or it has entirely retrogressed. The Roentgen-ray treatment has superseded operative measures at his clinic as it has so many advantages over the latter and the disturbances from the Roentgen menopause are comparatively insignificant as it is brought on so gradually. The only objection is the expense. He remarks in conclusion that no progress seems to have been realized in late years in the management of uterine hemorrhage from cancer, gonorrhea or tuberculosis. With hemorrhages at puberty and chlorosis, radiotherapy is not possible on account of danger of injury of the ovaries; he has obtained excellent results however in such cases from sweating procedures in addition to iron, keeping the patients in bed for three or four weeks. Even when all other measures had failed this treatment proved successful.

Virchows Archiv, Berlin

December, CCII, No. 3, pp. 321-474

- 136 Behavior of Plasma Cells and Vessels in Lymph Glands After Severing the Nerves. L. Martinotti.
- 137 Chronic Changes in Heart Valves. W. Dewitzky.
- 138 Case of Tuberculous Sclerosis and Multiple Tumors in the Kidney. J. Kirpichnik.
- 139 Interstitial Connective-Tissue Cells in Testicle and Their Atrophy. (Zwischenzellen und Hodenatrophie.) K. Koch.
- 140 Giant Cells in Amyloid Organs. (Vorkommen von Riesenzellen in amyloiden Organen und die Beziehungen zwischen dem ischämischen Infarkt und der Amyloidose.) T. Tsunoda.
- 141 Origin of Chronic Inflammation. (Versuch einer Theorie der chronischen Entzündung auf Grund von Beobachtungen am Pankreas des lebenden Kaninchens und von histologischen Untersuchungen nach Unterbindung des Ausführungsganges.) M. Natus.
- 142 Red Blood Corpuscles in the Epidermis. H. Josephy.

Wiener klinische Wochenschrift, Vienna

January 12, XXIV, No. 2, pp. 43-82

- 143 *Obese Children. (Fettkinder.) R. Neurath.
- 144 Pulmonary Distomiasis. (Zur Kenntnis der Lungendistomienkrankheit.) Y. Tanaka.
- 145 *Causes and Treatment of Temporary Partial Amaurosis. (Flimmerskotom und seine Behandlung.) A. Pichler.
- 146 Circumscribed Chronic Peritonitis with Adhesions. W. Denk.
- 147 Differential Diagnosis of Hysteria and Allied Organic Nervous Disease. Z. Bychowski.
- 148 *Salvarsan in Syphilis. (Bemerkungen zur Ehrlich-Debatte.) E. Finger.

143. Obese Children.—Neurath discusses pathologic obesity in the young; it is characterized by the local preponderance of the accumulations of fat in the subcutaneous tissue and by the association with other physical anomalies. He describes a case in which a boy of 10 weighed 36.8 kg. (about 80 pounds) while only 109 cm. (43 inches) tall. The child measured 83 cm. (33 inches) around the waist and 53 cm. (21 inches) around the head, and complained of disturbances in vision in the evening, headache and dizziness. A course of thyroid treatment had a marked influence on the obesity. The facts observed in this case compared with others like it in the literature suggest, Neurath thinks, a tendency to hydrocephalus with compression of the hypophysis from the distention of the third ventricle interfering with the functioning of the hypophysis. The obesity seemed to have developed suddenly after scarlet fever three years before, and Goldstein has reported three cases which he explains as hypophysis obesity following a serious meningitis. Babonneix has also reported six cases of obesity in children; all were remarkably short, and in all the head was unusually large. The obesity in one had followed scarlet fever. Neurath has also reported another case in which hydrocephalus in a child caused symptoms suggesting a cerebellar tumor plus obesity. The symptoms finally subsided, confirming the assumption of hydrocephalus without a primary tumor, the distention of the third ventricle downward accounting for the symptoms observed. The obesity resulting from this cause is characterized especially by accumulations of fat in the abdomen, buttocks and chest, unusually short stature, and sometimes by symptoms of pressure on the cerebellum. In two other cases the obese children had epileptiform seizures; the syndrome was of the type described by Tandler as eunuchoid obesity, the result of a functional incapacity, hypoplasia of the interstitial tissue of the ovaries or testicles, the internal secretion regulating the secondary sexual characteristics and the course of ossification. The epileptiform convulsions suggested an organic affection of the brain apart from true epilepsy. Neither of the children had reached puberty.

145. Transient Partial Blindness.—Pichler suffers himself from recurring scintillating scotoma and his study of the subject shows that the attacks are not only analogous to migraine but are amenable to the same treatment and prophylactic measures. There seems in most cases to be a hereditary predisposition which is enhanced by any cause weakening the nervous system or inducing vasomotor disturbances. The partial blindness itself we seem to be unable to influence but the succeeding headache can be warded off or mitigated by sedatives. If the patient feels the slightest sign of an impending attack, immediate cessation of work, lying down for half an hour, and eating a light lunch will often dispel the attack. Pichler's attacks are generally preceded by a bright spark floating before his eyes; if he is able to drop work at once and lie down for half an hour there is no further trouble, but if he keeps at work the typical attack and headache follow. He found marked neurasthenia in thirty-nine of his fifty-three patients, and about the same number stated that the attacks came on after long-continued close eye-work. In treatment the main point is to discover the actual underlying cause in each case and by hygiene and suitable measures keep the vital functions in good order.

148. Salvarsan.—Professor Finger is chief of the clinic for skin diseases and syphilis at the university of Vienna, and he insists that salvarsan should not yet be placed in the hands of the general practitioner as it has not been sufficiently studied in respect to the technic of administration, dosage and indications, especially as he and others have observed injurious by-effects from the drug. It is immaterial, he continues, for the practitioner to know how these by-effects can be explained. It is not enough to assure him that the by-effects and fatalities are not yet positively known to be the work of the new drug. What he must be assured before the drug is offered for general use is that the untoward effects sometimes observed are certainly not the work of the drug which he is being urged to use. Besides, Finger adds, even Ehrlich himself admits that one of the fatalities recorded was the direct consequence of the administration of salvar-

san. [The injurious by-effects to which Finger refers were mentioned in THE JOURNAL, January 7, page 83, in an abstract of his article on the subject.] He states that similar by-effects have been observed in a number of other cases since; the clinical picture is practically the same in all. He refrains from comment on principle in order not to bias his judgment of the drug which has certain undeniable advantages, wishing to regard even the by-effects from the optimistic rather than the pessimistic standpoint. He comments further on Igersheimer's conclusions that salvarsan cannot harm a healthy eye because it seems to cure syphilitic eye lesions; this assumption does not necessarily follow. The predilection for the drug may vary in the healthy and the diseased optic nerve. Igersheimer's further statement that large quantities of arsenic were refound in the animals' eyeballs in his experimental research, even although no appreciable harm resulted certainly suggests caution. The frequency of the occurrence of by-effects with salvarsan cannot be compared with those from mercury as each new day may bring new developments while the matter is practically settled for mercury. Finger also comments on Martius' statement that extensive necrosis was observed in every one of the twelve cadavers he had opportunity to examine two or three weeks after injection of salvarsan. [Martius' communication was summarized in THE JOURNAL, February 4, page 388.] Finger also calls attention to the fact that a distinction must be made between the frequency of syphilis as a cause of eye disturbances and the frequency of eye disturbances in the course of syphilis. Syphilologists know of the eye disturbances only from the complaints of the patients, while the ophthalmologists discover disturbances which escape the notice of the attending physician.

Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart

LXVII, No. 3, pp. 603-799. Last indexed February 4, p. 389

- 149 Utilization of Anterior Wall of Cervix in Operation for Vesicovaginal Fistula. O. Küstner.
- 150 A Young Placenta Implanted on Uterine Isthmus and Cervix. R. T. Jäschke.
- 151 Retrogression of Lutein Cystomas After Hydatidiform Mole. E. Santi.
- 152 Pseudotumor in Small Pelvis from Contraction of Pyriform Muscle. (Seltenes Palpationsphänomen im kleinen Becken.) A. Mayer.
- 153 Rudimentary Solid Uterus Bipartitus with Solid Vagina. H. Küster.
- 154 *Tuberculosis of the Placenta. J. Novak and F. Ranzel.
- 155 *The Cicatrix After Cesarean Section in Respect to Later Pregnancies. (Die Uterusnarbe des korporealen und cervikalen Kaiserschnitts und ihre Chancen bei späteren Schwangerschaften und Geburten.) F. A. Scheffzek.
- 156 Eclampsia and the Wassermann Reaction. M. Semon.

154. Tuberculosis of the Placenta.—Novak and Ranzel report ten cases of tuberculous placenta; tubercle bacilli were found in the placenta in seven. They review the history of this subject and the conclusions that might be drawn from their and others' findings in regard to the marriage of tuberculous girls and sterilization of tuberculous married women.

155. The Cicatrix After Cesarean Section.—Scheffzek has had spontaneous rupture occur after Cesarean section at a previous pregnancy in two cases in his experience. In ten other cases labor in women who had had Cesarean section done in former years was abnormally prolonged; in one case labor lasted for sixty-eight hours. In five cases Cesarean section had to be done anew and in four women premature delivery was artificially induced but version and forceps were required to terminate it. His experience shows that the cicatrix of the extraperitoneal Cesarean section is far stronger than that of the classic technic. Section in the body of the uterus necessarily impairs the child-bearing faculty much more than the extraperitoneal technic. Even when there were suppuration and infiltration during the healing of the extraperitoneal section yet there was no fixation of the uterus or displacement from retraction of the cicatrix. The extraperitoneal technic has been applied in seventy-one cases to date and it is so much simpler, he thinks, than the classic technic that he regards it as applicable by the general practitioner even under primitive conditions. He has frequently operated in this way without an operating table, in a room hastily arranged for the purpose, and obtained the same favorable results as in a well-equipped clinic.

Zentralblatt für Chirurgie, Leipsic

January 14, XXXVIII, No. 2, pp. 33-72

- 157 *Ligation of Veins for Suppurative Portal Thrombosis. (Venenunterbindung bei eitriger Pfortaderthrombose nach Appendicitis.) O. Sprengel.
158 *Glycerin to Relax the Bladder. O. Franck.
159 Operative Treatment of Stenosis. F. A. Kehrler.

157. Ligation of Veins in Suppurative Thrombosis of the Portal Vein.—THE JOURNAL, Aug. 28, 1909, page 753, mentioned the successful outcome of ligation of the mesenteric veins in a case of portal thrombosis following appendicitis. Sprengel recently encountered a case of the kind and applied the same measure in treatment. His patient was a man, aged 29, with a first attack of appendicitis with perforation. Sprengel recently encountered a case of the kind and applied two days after the operation had been first proposed and found then that the ascending colon had no well-developed mesentery and that the retroperitoneal peritoneum was exceptionally fat. These facts may have been responsible for the failure in this case. The ligation did not fully answer its purpose and the pyelephlebitis continued its fatal course, involving even the finest ramifications of the portal vein. A single case of failure is not decisive, however, but Wilms' successful case is still the only one on record.

158. Glycerin as a "Laxative" for the Bladder.—Franck has had scarcely a single failure since he has made a practice of injecting from 15 to 20 c.c. of a 2 per cent. boric acid-glycerin into the bladder without attempting to draw the urine. He injects it without a catheter, with force enough to send it past the sphincter at the outlet of the bladder. About 10 c.c. escapes from the urethra but enough gets into the bladder to answer the desired purpose, stimulating the "peristalsis" of the organ so that spontaneous evacuation of urine follows in twenty minutes at most. This is now his routine practice after all abdominal operations and he has found it useful also in paralysis of the bladder from mechanical and nervous causes. Even strictures and enlargement of the prostate are transiently favorably influenced by this liquid catheter, as he calls it.

Zentralblatt für Gynäkologie, Leipsic

January 14, XXXV, No. 2, pp. 49-96

- 160 *Extradural Injections for Pain in Sacral Region. (Epidurale Injektion bei Kreuzschmerzen.) H. Albrecht.
161 Mammary Origin of Eclampsia Toxin. E. Martin and E. Santi.
162 Anatomic Mammary Insufficiency. (Zur Frage der anatomisch begründeten Stillunfähigkeit.) R. T. Jaschke.
163 Sudden Death During Delivery. E. Venus.

160. Epidural Injections for Sacral Pains.—Albrecht has applied Cathelin's technic in fifty-three cases of severe pains in the sacral region without appreciable disease in the genital organs. The result was the complete cure of the pain in 72 per cent. while the benefit was brief or no benefit was observed in 28 per cent. His experience shows that the procedure is particularly useful in treatment of functional bladder disturbances, in idiopathic pruritus vulvæ and for coccygodynia. He injected from 30 to 40 c.c. of physiologic salt solution, with or without local anesthesia. In two out of three cases of enuresis a cure was obtained by a single injection, as also in nine out of sixteen cases of severe functional neuroses without pathologic findings in the abdominal organs or genitalia. Most of these patients had long been under treatment in the hospital without appreciable benefit. In a case of exophthalmic goiter with pain in the lumbar and sciatic regions, the pain subsided for three days and then returned but disappeared permanently after a second injection with no recurrence during the five months to date. In another case a complete cure was realized by this means after failure of systematic and repeated courses of other measures for relief of intense sacral pain and idiopathic pruritus in a woman with premature menopause. [The technic was described in THE JOURNAL, July 13, 1901, page 150.] Equally favorable results were obtained in eleven out of thirteen cases of severe sacral pain persisting after apparent cure of old chronic inflammation of the uterine appendages. He thinks it possible that the sacral pain in these cases was a morbid pain-habit and that this habit was broken up by the single injection. Some of these patients had been in the hospital for from six to fifteen weeks under a course of treatment to promote absorption of the products of inflammation.

Zentralblatt für innere Medizin, Leipsic

January 14, XXXII, No. 2, pp. 33-64

- 164 Behavior of Purin Bodies in a Case of Cirrhosis of the Liver Before and After the Talma Operation. E. Axisa.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 8, XXXII, No. 4, pp. 33-48

- 165 Antitoxie Action of Tuberculous Effusions. (Studi sugli essudati tubercolari umani considerati in rapporto alla immunità.) S. Livierato and E. Crossonini.
January 12, No. 6, pp. 59-66
166 General Anesthesia with Aid of Scopolamin. R. Caminiti.

Policlinico, Rome

January 8, XVIII, No. 2, pp. 37-68

- 167 Salvarsan in Syphilis. (Il preparato di Ehrlich-Hata nella cura della sifilide.) M. Truffi.
January 15, No. 3, pp. 69-100
168 *The Scapula-Angle Sign of Tuberculous Pulmonary Lesions. C. A. Crispolti.

168. The Scapula-Angle Sign of Tuberculous Pulmonary Lesions.—Crispolti states that the "acromion symptom" to which O. Kuthy has recently called attention is nothing but Baccelli's scapula-angle sign which has long been taught in Italy as an important indication of a disease process in the lungs causing the wall of the chest on that side to lag behind the other in the excursions of respiration. Baccelli found that this difference in the excursions was most marked at the superior angle of the scapula, at the inner extremity of its upper border, and that this difference was apparent even when the lesion was in an incipient stage. Kuthy devoted his attention to the movements of the acromion, and calls it the acromion symptom. He found it pronounced in 99.3 per cent. of 356 tuberculous patients examined, and in the eighty-five cases in which the trouble was bilateral, the sign was pronounced on the side most involved.

Ugeskrift for Læger, Copenhagen

January 12, LXXIII, No. 2, pp. 35-70

- 169 General Anesthesia with Scopolamin, Morphin and Ether. R. Hastrup. Commenced in No. 1.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

DISEASES OF THE JOINTS AND SPINE. By Howard Marsh, M.A., M.C., Cantab., F.R.C.S., Master of Downing College and Professor of Surgery in the University of Cambridge. New and Enlarged Edition Thoroughly Revised by the Author and by C. Gordon Watson, F.R.C.S., Surgeon to the Metropolitan Hospital. Price, \$3. Cloth. Pp. 632, with 100 illustrations. Chicago: Chicago Medical Book Co., 1910.

SERUM AND VACCINE THERAPY. Bacterial Therapeutics and Prophylaxis Bacterial Diagnostic Agents. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., Professor of General Pathology and Bacteriology, King's College, London. Second Edition. Cloth. Price, 7 shillings 6 pence net. Pp. 406. London: J. & A. Churchill, 7 Great Marlborough Street, 1910.

ABHANDLUNGEN ÜBER SALVARSAN (EHRlich-HATA-PRÄPARAT 606 GEGEN SYPHILIS). Gesammelt und mit einem Vorwort und Schlussbemerkungen herausgegeben von Dr. Paul Ehrlich, Geh. Obermed.-Rat, a. o. Professor, Direktor des Instituts für experimentelle Therapie, Frankfurt a. M. Paper. Price, 6 marks. Pp. 402. Munich: J. F. Lehmann's Verlag, 1911.

DIE HEILUNG DER GICHTISCH-RHEUMATISCHEN ERKRANKUNGEN GEMÄSS DER ERFOLGREICHST BEWÄHRTEN METHODE. Von Dr. M. J. Kittel, Spezialarzt für gichtisch-rheumatische (orthopädische) und für innere Frauenbehandlung in Franzensbad. Von J. F. Kleine. Paper. Pp. 128. Berlin: Kleine & Stapf, W. 15, Kurfürstendamm 35, 1911.

HOWARD TAYLOR RICKETTS Y SUS TRABAJOS SOBRE EL TABARDILLO (TIFO DE MEXICO). Publicado por la Secretaria de Instrucción Publica y Bellas Artes en cumplimiento del acuerdo relativo del Presidente de la Republica. Paper. Pp. 137. Mexico City, Mexico, 1910.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of the Sixth Annual Meeting, Washington, D. C., May 2-3, 1910. Paper. Pp. 440. Secretary, Dr. Henry B. Jacobs, 11 Mt. Vernon Place, West, Baltimore, Md.

FESTSCHRIFT ZUR VIERZIGJÄHRIGEN STIFTUNGSFEIER DES DEUTSCHEN HOSPITALS. Herausgegeben von dem Medical Board im Auftrage der Aerzte des Deutschen Hospitals und Dispensary in der Stadt New York, 1909. Paper. Pp. 598.

VIERZIG JAURE DES DEUTSCHEN HOSPITALS UND DISPENSARY IN DER STADT NEW YORK. Eine geschichtliche Darstellung. Paper. Pp. 119, with illustrations.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 8

CHICAGO, ILLINOIS

FEBRUARY 25, 1911

RETROPERITONEAL SHORTENING OF THE ROUND LIGAMENTS*

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PITTSBURG

I take it that the following propositions are generally conceded, and are accordingly excluded from this discussion.

1. Many displacements cause no symptoms and require no treatment.
2. Many displacements cause discomforts which may be easily and completely relieved by well-fitting pessaries.
3. In many instances discomforts due to displacements could be best relieved by operation were there not complicating affections, pulmonary, cardiac, renal, thyroid, etc., which would render operation unduly hazardous. In such cases pessaries serve a useful purpose.

There remain, however, many displacements, some simple and others complicated, which require operative correction. It is to this class alone that my remarks will refer.

The last decade has done much to crystallize our views regarding the normal position of the uterus, the mechanism of posterior displacements, the rôle played by coincident affections and the relative degrees of discomfort due to each and the many ways by which displacements may be corrected, with their respective advantages and defects.

NORMAL POSITION

The normal relative positions of the uterus and vagina are rarely given in text-books of anatomy, obstetrics or gynecology. Dissections and frozen sections of the female pelvis are misleading. They are usually made after fermentation has caused distention of the alimentary canal, including the rectum. The anterior and posterior walls of the rectum are normally in contact except when gas is being expelled, or at the time of defecation. Text-book illustrations usually show the rectum enormously distended. Adapting the illustrations of four well-known text-books to the scale of a normal mature woman, we find both the rectum and the vagina inflated to a diameter of $1\frac{1}{2}$ to 3 inches. This inflation of the canals occupies nearly the entire antero-posterior diameter of the pelvis. This distortion pushes the uterus and vagina forward, the illustrations making them appear almost vertical, and almost in a straight line. As they appear to be on end the uterus is raised from its normal pelvic position to become an abdominal organ.

Normally, however, the vagina is almost horizontal, runs almost directly backward, and the uterus is directed forward at an acute angle. This horizontal position exerts an important influence in preventing prolapse, whereas the vertical position favors telescoping.

We have three chief factors which prevent uterine prolapse or hernia: (1) the pelvic floor; (2) the uterine ligaments, and (3) the normal acute angle between the uterus and vagina (with the cervix as a fairly fixed point), which causes the intra-abdominal pressure exerted from above to close the vaginal slit firmly.

It is a wise provision of Nature that normally closes the oblique opening through the pelvic floor more and more tightly as intra-abdominal pressure increases. This is effected by rendering the vaginal canal and the uterus which run in opposite directions, more and more nearly parallel and horizontal. This method of closure is analogous to that of the ureter as it enters the bladder.

In order that the uterus may remain in its normal position it is necessary to maintain to a considerable degree the functional value (1) of the pelvic floor; (2) of the supporting ligaments which radiate from the cervix, and (3) of the round ligaments, which act as guy-ropes.

MECHANISM OF RETROVERSION AND OF PROLAPSE

With the cervical attachment of the base of the broad ligaments acting normally as a pivotal point, the fundus will remain forward if the round ligaments are normal. If the round ligaments are stretched (as by a fall or after delivery), however, the fundus may turn backward to any degree, though the integrity of the broad ligaments and of the pelvic floor remains unimpaired. As a matter of fact, however, posterior displacements are very often, if not usually, accentuated by an injury to the pelvic floor or by stretching of the supporting (i. e., radiating) ligaments, or by both.

Should both these supports be impaired at the same time (i. e., the pelvic floor and radiating ligaments), the direction of both the uterus and the vagina is rendered more nearly vertical and they assume more nearly a straight line. When such mechanical conditions exist, it is easy for the uterus to be telescoped into and through the vagina. Such a prolapse implies:

1. A shortening of the posterior wall of the vagina as by a perineal tear.
2. The stretching of the sacro-uterine ligaments permitting the cervix to move forward.
3. Elongation of the round ligaments permitting the fundus to tilt backward.
4. Stretching of the broad ligaments, permitting the uterus to sag downward.

The degree of prolapse and the speed with which it develops varies with the type of work and other causes for varying intra-abdominal pressure, such as straining at stool, etc.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-First Annual Session, held at St. Louis, June, 1910. This article is part of a symposium, other articles of which appeared last week and further on in this issue.

COINCIDENT AFFECTIONS

In my experience about 70 per cent. of patients requiring operation for posterior displacements of the uterus have also suffered from associated diseases of the ovaries, tubes or appendix. Fortunately, the medical profession has emerged from that period when it was cus-

analysis and have assumed the concrete form of gallstones, gastric and duodenal ulcer, floating kidney, ureteritis, chronic appendicitis, hyperthyroidism, incipient tuberculosis, relaxation of the sacroiliac joints and other postural defects with consequent muscular and ligamentous strain, etc.

The medical profession and womankind owe a lasting debt of gratitude to Drs. Reynolds, Lovett, Goldthwaite and others for demonstrating the frequency with which



Fig. 1.—Normal acute angle between the uterus and vagina. Intra-abdominal pressure, exerted from above, closes the vaginal slit firmly, thus preventing prolapse.

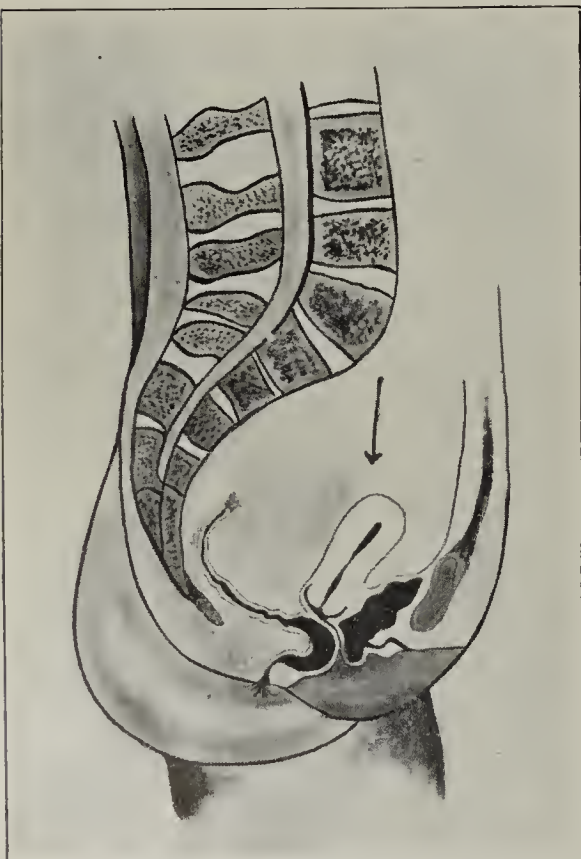


Fig. 2.—Cystocele and rectocele. Cervix permitted to move forward by relaxed broad and sacro-uterine ligaments. When the foregoing occurs the uterus and vagina are in approximately the same vertical line. It is then just a question of time when the uterus will telescope into and through the vagina.

tomary to attribute all discomforts of doubtful origin to the genital tract. By virtue of close scrutiny and strict adherence to the laws of logic many so-called reflex uterine pains have been reduced to their correct



Fig. 3.—In common with other forms of transperitoneal suspension of the uterus, the Gilliam operation leaves firm bands of tissue stretching across the free abdominal cavity. R. L., round ligaments stretching across the free abdominal cavity, leaving three openings (O), through which it is possible for a loop of intestine to slip and become strangulated.



Fig. 4.—If by chance the ligaments should be overshortened and the fundus held in contact with the abdominal incision, the two surfaces become adherent. A suspensory ligament would be added and we would have four openings through which an intestine might slip and become strangulated. R. L., overshortened round ligaments and resulting suspensory ligaments (S. L.) which stretch across the free abdominal cavity, leaving four openings (O) through which an intestine might slip and become strangulated.

backache is due to postural defects and rendering it easy to differentiate between the several types of pain.

Our chairman, Dr. Clark, has wisely emphasized the importance of making an itemized record of the several

disease conditions affecting the individual patient; of the percentage in which they contribute to her discomforts, and of the extent to which each may probably be relieved by the proposed plan of treatment.

In this day of safe surgery, many people expect too much from operations and one will reduce the frequency and degree of disappointment if he strives to tell the individual patient beforehand just which of her discomforts may *not* be relieved by the operation. This

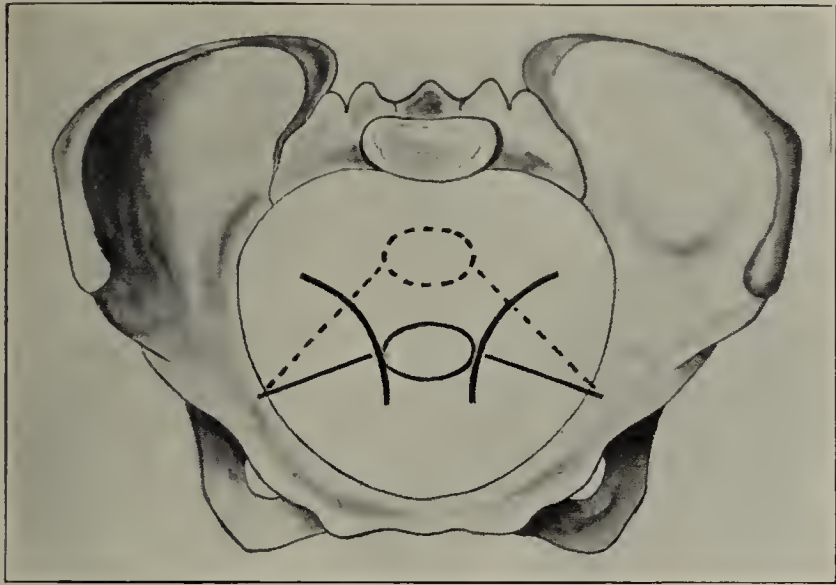


Fig. 5.—Heavy straight lines indicate normal direction of round ligaments. Dotted lines show the slight degree of stretching which will permit the uterus to become retroverted.

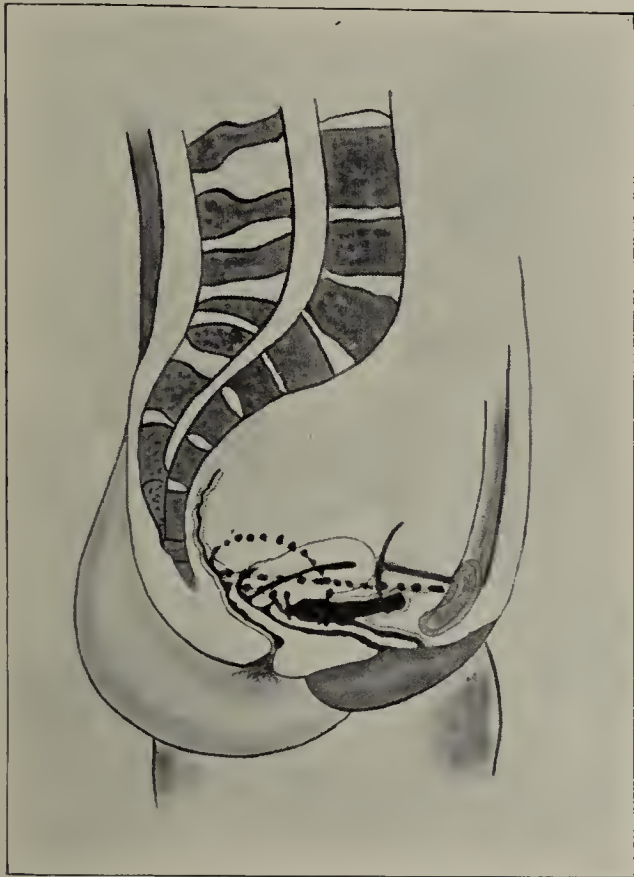


Fig. 6.—Heavy lines represent the shortened round ligament, which is directed forward. Dotted lines represent the marked stretching of the transplanted round ligaments that must take place before retroversion can occur.

enables the patient to decide judiciously regarding a plan of treatment.

OPERATIVE CORRECTION

It is needless to review here the evolution of the various procedures or to enumerate the several operations and modifications which hold the uterus forward. Each of the several recognized avenues for surgical correction has its advocates who have modified the following types of operation:

1. Inguinal shortening of the round ligaments (Alexander, Edebohl, Martin, Goldspohn).
2. Vaginal fixation of the uterus and vaginal shortening of the round ligaments (Goffe, Schnebing, Duhrssen, Maskenrodt, Vineberg, Reed, Wertheim).
3. Intra-abdominal shortening of the round ligaments (Polk, Wylie, Dudley, Mann, Bissell, Morris, Baldy).
4. Attachment of round ligaments posterior to the uterus (Webster and Baldy).
5. Attaching the uterus to the anterior abdominal wall firmly, loosely, indirectly (Kelly, Fowler, Martin, Dorsett).
6. Transperitoneal shortening of the round ligaments (Olshausen, Ferguson, Beck, Gilliam, Martin, Campbell, McGannon).
7. Retroperitoneal shortening of the round ligaments (Ferguson, Noble, Simpson, Montgomery, Mayo, Peters, Barrett).
8. Shortening of the sacro-uterine ligaments through the abdomen or vagina (Bovée, Bishop, Stoner, Young).
9. Transverse attachment of the base of the broad ligaments in front of the cervix.
10. Intraperitoneal shortening of the round and broad ligaments (Coffey).

The uterus may be held forward by any one of several satisfactory methods. In order that it may remain in its normal position, it is necessary to maintain, to a considerable degree, the functional value, first, of the pelvic floor; second, of the supporting ligaments which radiate about the cervix; and third, of the round ligaments which act as guy-ropes. I take it that correction of mechanical defects of any of these structures constitutes an essential part in the several operations considered in this symposium.

The principles of safe and effective correction are simple. They not only take into consideration the normal



Fig. 7.—Uterus held in normal position by ligaments shortened and directed forward behind the parietal peritoneum (P').

position of the genital organs and the mechanism of displacements, but also the existence of other pelvic viscera (intestines, bladder, ureters) and the accidents common to them. The value of an otherwise satisfactory operation may be impaired by a considerable percentage of failures; by interfering with the function of reproduction; by causing considerable pain; by leaving bands of adhesions stretched across the free abdominal cavity; by entailing too great a risk to life or by frequently substituting other pathologic conditions which are themselves a source of considerable inconvenience.

It has always seemed to me that when skill, technic, facilities and other conditions justify elective operations, the mere fact of opening the abdomen does not necessarily entail serious risk. When the abdomen is opened, one can occasionally detect and correct associated troubles which would otherwise continue to cause discomfort. For these and other reasons, I am

ner of attaching the ligaments was not to suspend the uterus, but to keep the fundus from rising and describing its backward arc of a circle.

The shortened ligaments would undoubtedly undergo the same changes of hypertrophy and involution common to normal ligaments in the course of gestation and the puerperium. Thus far the operation was ideal.

But in common with other forms of transperitoneal suspension, firm bands of tissue were stretched across the free abdominal cavity.

If by chance the ligaments were over-shortened, and the fundus of the uterus held in contact with the abdominal incision, the fundus would become adherent.

A suspensory ligament would be added, and we would then have four openings through any one of which it seemed possible an intestine might slip and become strangulated.

It occurred to me at that time, as doubtless it did to many others, that if this possible source of danger could be avoided, the operation would be well-nigh ideal. At the Cincinnati meeting of the Southern Surgical and Gynecological Association in November, 1902, three papers were presented, each describing a method of utilizing the strong points of the Gilliam operation but obviating its dangers by effecting the shortening and transplantation beneath the parietal peritoneum. The first of these papers was read by Dr. A. H. Ferguson of Chicago; the second by Dr. George Noble of Atlanta, and in the third, I presented a

preliminary report regarding the technic of a similar retroperitoneal operation.

The underlying principles of my operation were then described as follows:

It consists essentially of changing the course of the round ligaments from a transverse to nearly an anteroposterior

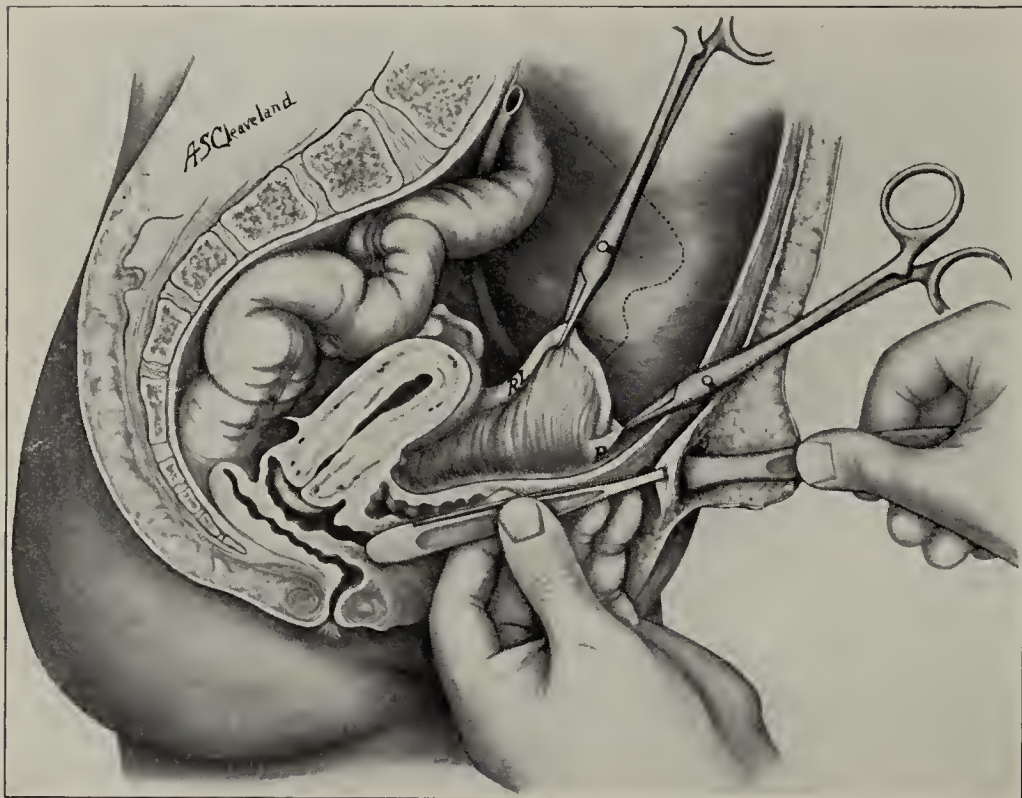


Fig. 8.—First step in retroperitoneal shortening of round ligaments. Landmarks are fixed by guide forceps preparatory to passing curved forceps in manner suggested and practiced by Drs. Charles H. Mayo and Barrett. R. L., round ligament grasped about 1½ inches from uterus. P., parietal peritoneum overlying internal ring picked up, as suggested by Dr. S. A. Chalfant.

inclined to look with favor on the operations which open the abdomen in the mid line, thus making it possible to investigate all areas of discomfort.

At the time the Gilliam operation was first proposed, I was much impressed by the fact that if considered

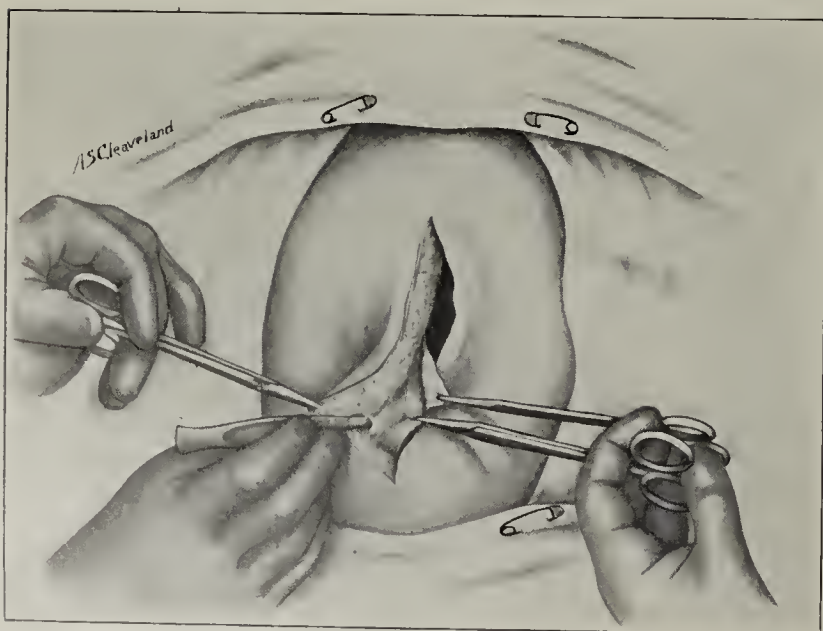


Fig. 9.—Second step: The skin is retracted and the fascia punctured about 1½ inches to the side of the lower angle of the incision.

from the standpoint of the genital tract alone, it was simple and based on effective mechanical principles. The strong part of the round ligaments was used.

The ligaments were directed forward thereby giving them greater retaining power. The effect of that man-

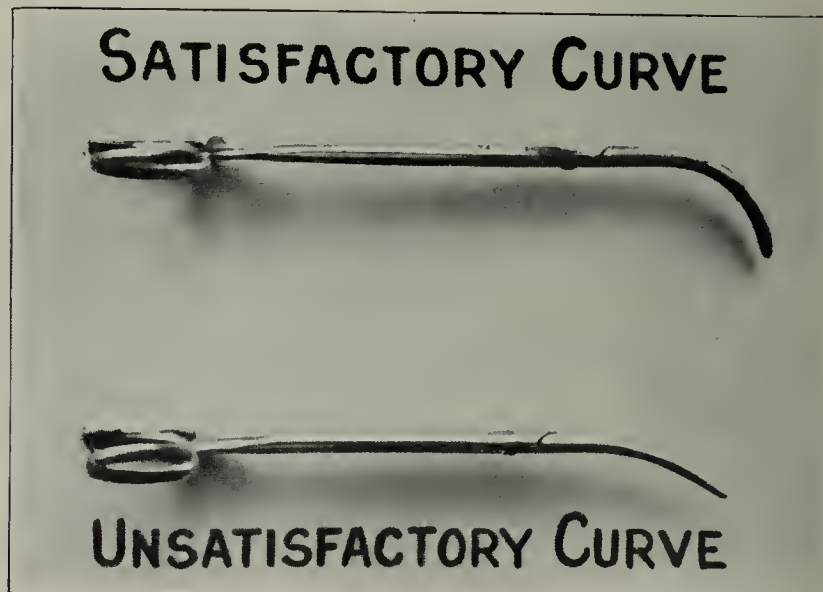


Fig. 10.—Forceps of satisfactory and unsatisfactory curve.

direction: in shortening the round ligaments so as to leave the distal end slack; the proximal end being used to control the movements of the uterus; finally, and especially, in effecting these changes beneath or by puckering the parietal peritoneum, thus leaving no bands of adhesions and no pockets which may strangulate an intestine. These principles have commended themselves to me as being mechanically and sur-

gically correct. Varying details of technic will readily suggest themselves to the operator.¹

That this observation of eight years ago was fully warranted is shown by the subsequent publication of a considerable number of modifications of the three operations proposed at that meeting.

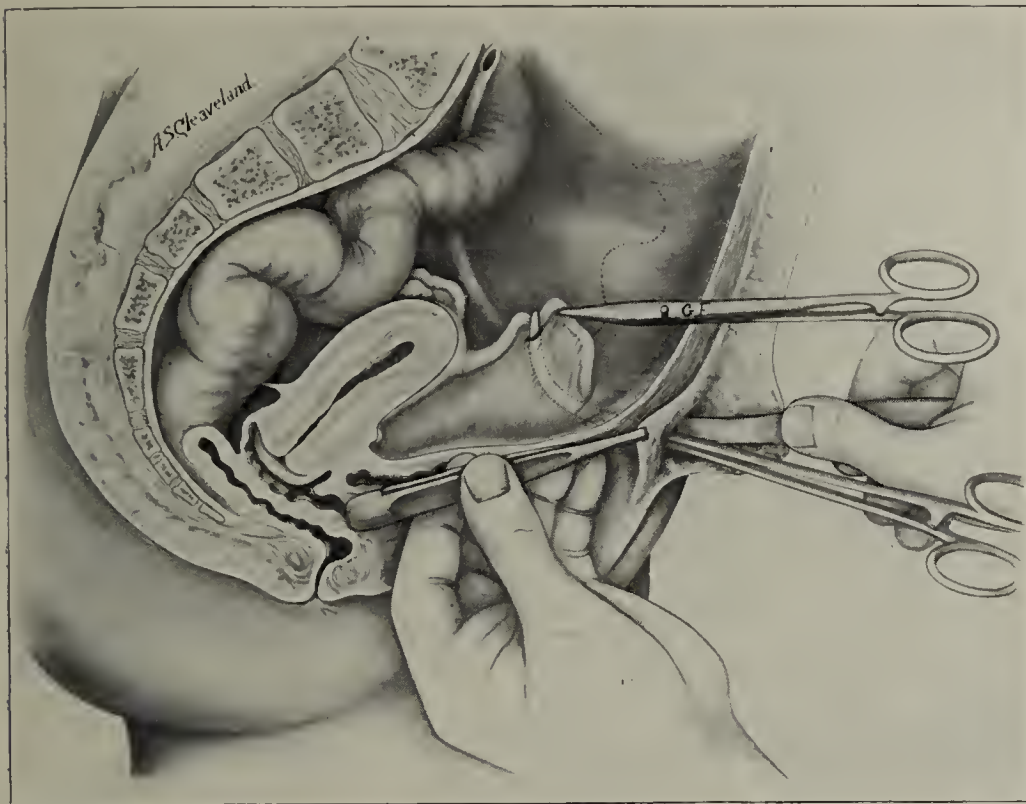


Fig. 11.—Third step: The forceps of proper curve, having passed through the fascia and obliquely through the rectus muscle, skirts beneath the parietal peritoneum to the internal abdominal ring, where it passes between the layers of the broad ligament and follows the course of the round ligament to $1\frac{1}{2}$ inches of the uterus. At that point it penetrates the peritoneum, entering the peritoneal cavity for the first time, and then grasps the round ligament proximal to the guide forceps. (G. F.).

TECHNIC

My own technic has undergone several minor changes but has gradually settled down to that which we have employed for several years and considered safe, to a high degree effective, and as free as any abdominal operation of any kind can be, from the risk of adhesions. It has no bands stretching across the free abdominal cavity and carries no essential danger of strangulation. Except in two cases, it has caused no dragging sensation during pregnancy, or at any time, except during the first few days of the healing process.

Notable modifications have been made by Dr. Montgomery, Dr. Charles H. Mayo, Dr. Barrett and others. The operation as it now stands is a composite one. It consists in the following steps:

1. A median abdominal incision is made.
2. The round ligament is caught $1\frac{1}{2}$ inches from the uterus and the parietal peritoneum at the point of the internal inguinal ring (Fig. 9).

3. The skin is retracted and the fascia punctured about $1\frac{1}{2}$ inches to the side of the lower angle of the incision (Fig. 10).

4. A forceps of proper curve passes through this puncture, obliquely through the rectus muscle, following the method of Dr. Charles H. Mayo, and enters the broad ligament at the internal ring. It then continues to pass beneath the peritoneum and by the side of the round ligament until it reaches the hemostat holding the round ligament.

5. The curved forceps then penetrates the peritoneum and grasps the round ligament. The free margin of peritoneum is held by a hemostat during the next step.

6. The curved forceps is drawn out bringing the round ligament through the tunnel it has made.

7. The round ligament is then fastened and suspended just beneath the fascia by a linen thread which closes the rent in the fascia and at the same time holds the ligament firmly. The same process is repeated on the opposite side.

Some features and variations in technic and subsequent care which deserve comment are the following:

1. The ligament should not be attached to the upper surface of the fascia. Any permanent perforation of the fascia invites hernia.

2. The operator should actually see that his suture attaches the ligament to the fascia rather than to the fat overlying the fascia.

3. If the round ligaments are caught too near the uterus, or if they are fastened together in the mid line (either above or below the fascia), the uterus will be held in contact with the line of incision and a suspensory ligament will form. In one of my early cases that happened. The intestine became adherent, slipped behind the suspensory ligament (which should never exist) and annoying cramps followed, requiring operation.

RESULTS

1. *Mortality.*—I have done this operation with modifications, and in connection with necessary plastic and other work, about 400 times. There have been two deaths (in complicated cases), giving a

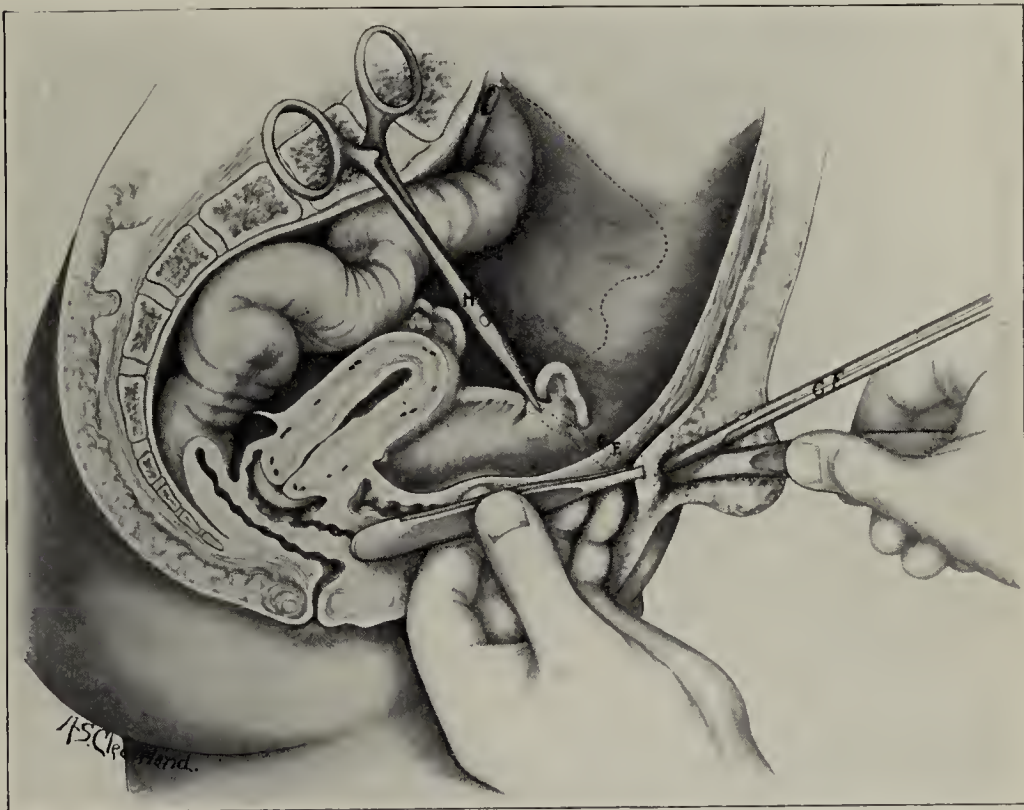


Fig. 12—Fourth step: The margin of peritoneal wound having been caught by hemostatic forceps (H), the curved forceps (C. F.) grasps the round ligament. By withdrawal of the curved forceps the round ligament is drawn out through the canal made by the forceps.

mortality of 0.5 per cent. In about 70 per cent. of these cases, the appendix, tubes and ovaries, or adhesions required attention. During the last few weeks, I have gained definite information regarding about 75 per cent. of the patients. Regarding the other 25 per cent., either nothing has been heard from them or their physicians,

1. Am. Jour. Obst., 1903, xlvii, No. 2.

or else the doctor has reported that his information is neither recent nor exact. These facts have been obtained in two ways: first, from the medical attendants who have recently seen and examined the patients; and second, from my own notes made at the time of recent examinations. This inquiry includes:

Nine have aborted; four had aborted before; two of them probably had syphilis; in two no cause was known by the attendant. Three of these also bore one child. One had an ectopic gestation. Twenty-three bore one child at the end of normal pregnancy. Three of these also aborted once each. One of this number is reported to have died of puerperal infection seventeen days after a normal delivery. Five have had two children at the end of normal pregnancies.

4. *General Health.*—This has been very markedly improved or completely restored in 82 per cent.

Little or no improvement, 15 cases, 5 per cent.

Somewhat improved, 38 cases, 13 per cent.

Markedly improved, 128 cases, 43 per cent.

Completely restored, 117 cases, 39 per cent.

5. *Local Discomforts.*—These were very markedly or completely relieved in 84 $\frac{2}{3}$ per cent.

Little or no improvement, 10 cases, 3 $\frac{1}{3}$ per cent.

Required second operation for cystic ovaries after which relief was complete, 6 cases, 2 per cent.

Somewhat improved, 28 cases, 9 $\frac{1}{3}$ per cent.

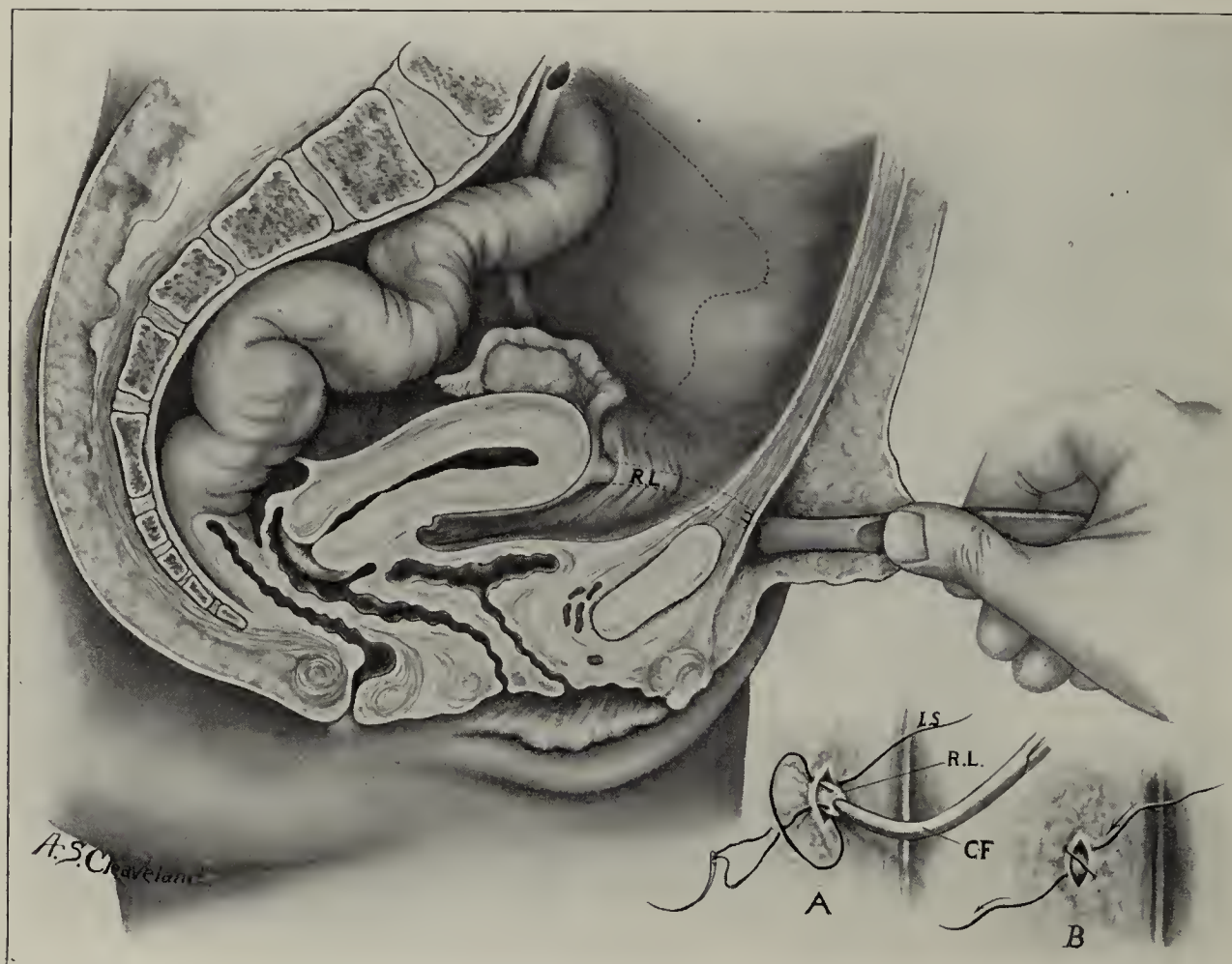


Fig. 13.—Final step: The round ligament (R. L.) is suspended beneath the fascia by a linen suture (L. S.) which also closes the rent in the fascia. The same process is repeated on the opposite side. Method of fastening shown on the margin.

2. *The Present Position of the Uterus.*—In two cases the uterus is known to be retroverted but without discomfort. Three or four uteri with congenital defects are about in the long axis of the body. Four with prolapse are known to have the fundus forward, but the cervix was not held well back by the plastic operations and shortening of the sacro-uterine ligaments. In three cases after delivery the uteri were back at about the sixth week, but were permanently corrected by the temporary use of pessaries. In all the other cases, that is, in more than 97 per cent. of those heard from, the uterus is in the normal position.

3. *Pregnancy.*—For various reasons (patients unmarried, widows, passed menopause, operation required removal of one or both adnexa, etc.), 40 per cent. of those heard from would not be expected to conceive. Of the remaining one hundred and eighty patients heard from, forty-five have conceived. One patient is now normally pregnant three months; one patient is now normally pregnant four months; two patients are now normally pregnant six months; two patients are now normally pregnant eight months, and one patient is now normally pregnant nine months.

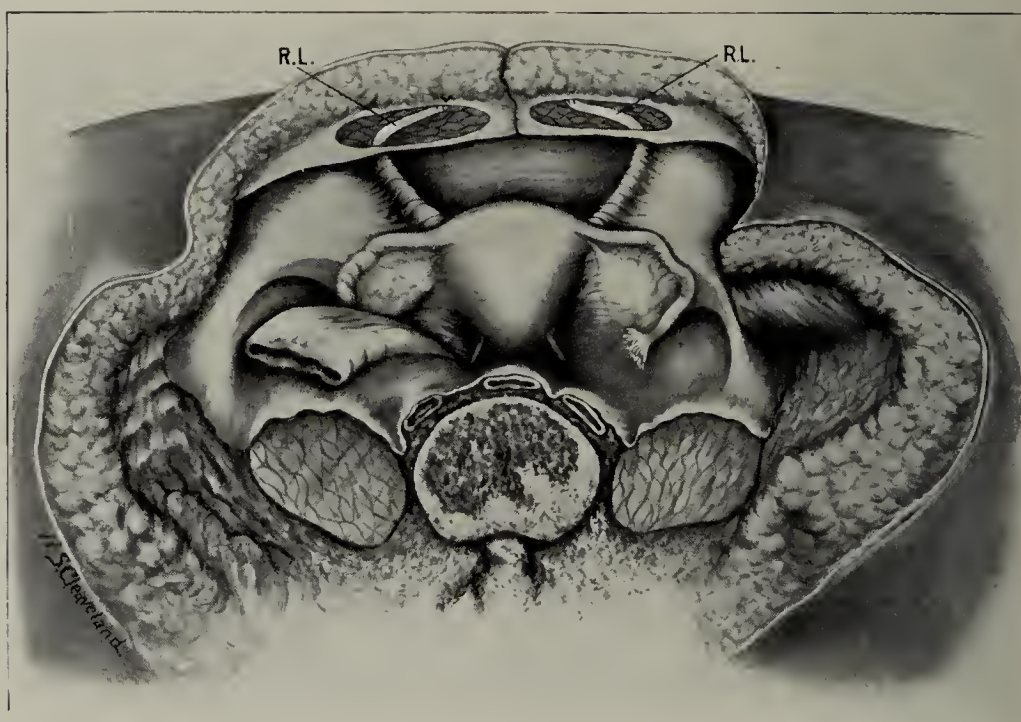


Fig. 14.—Retroperitoneal course of the round ligaments fastened beneath the fascia. P., folds of peritoneum covering the round ligament. R. L., round ligament as it lies in its oblique course through the rectus muscle and attached to the under surface of the fascia.

Decidedly improved, 72 cases, 24 per cent.

Completely relieved, 182 cases, 60 $\frac{2}{3}$ per cent.

6. *New Local Discomforts.*—Here inquiry was especially made regarding dragging sensation in the new course of the ligaments. New discomforts were noted

in two, or less than 1 per cent.; no new local discomforts in 296, or about 99 per cent.

My percentage of partial or complete failure to hold the uterus forward has been about 2 per cent. No round-ligament operation alone will be uniformly successful under the following conditions:

must also be corrected. I have had three or four partial failures due to this cause.

3. When the sacro-uterine ligaments and the base of the broad ligaments have been very much stretched, giving a decided prolapse. These defects should also be corrected (as, of course, the underlying lacerations). I have never had difficulty in keeping the fundus forward, but I have occasion-



Fig. 15.—If the round ligaments are caught too near the uterus or if they are fastened together at the mid-line (either above or below the fascia) a suspensory ligament will likely be formed. Dotted lines show the retroperitoneal course of round ligaments which are fastened together in the mid-line S. L., which is the dangerous suspensory ligament so likely to form if this error is made.



Fig. 17.—A low attachment of the bladder to the cervix, and a high attachment of the sacro-uterine ligaments. This faulty leverage must be overcome to ensure the success of any corrective measures.

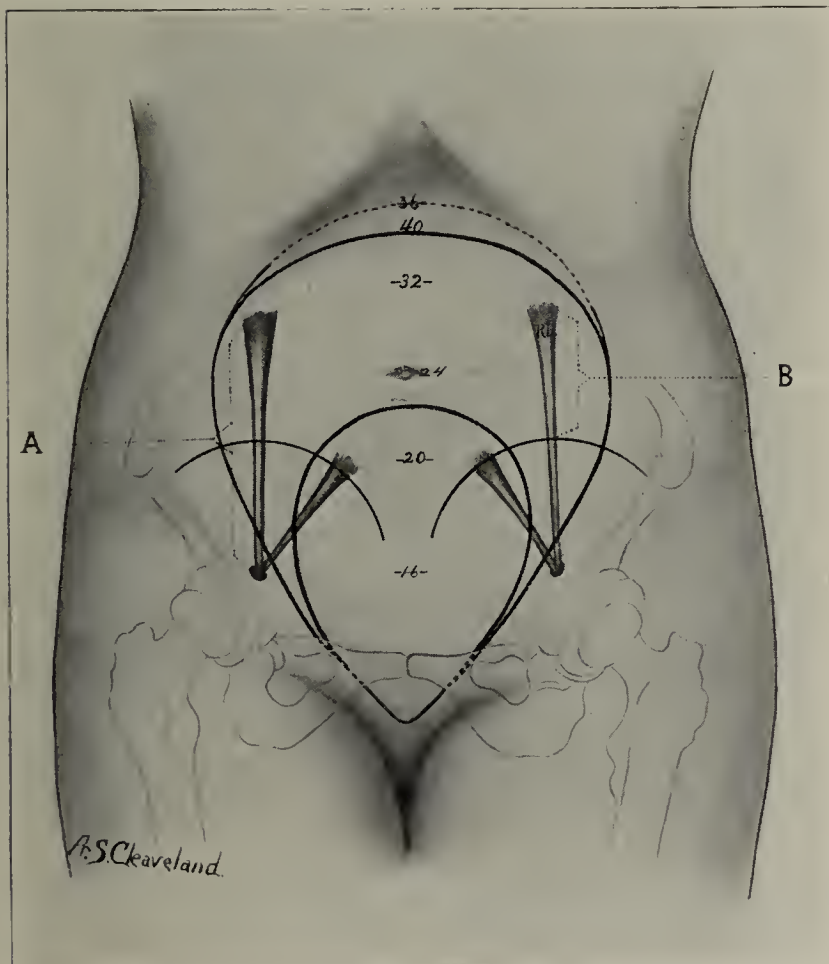


Fig. 16.—Immediately after delivery the uterus is markedly reduced in size and length. The length of the round ligaments is gradually reduced. For days they are long enough to permit the uterus to fall back into the hollow of the sacrum. If it remains back during the puerperium, the ligaments will be permanently stretched. A, total length of round ligament at the beginning of labor. B, excess of ligament at the end of labor.

1. When the ligaments are very delicate. I have had one failure due to this cause.

2. When the congenital attachment of the bladder is low and that of the sacro-uterine ligaments is high. This defect

ally had an imperfect result because my attempts at shortening the sacro-uterine and the broad ligaments were not always perfectly satisfactory. I have knowledge of four cases of this kind.

The ligaments undergo the normal course of hypertrophy and involution during pregnancy and the puerperium. It is attended by slightly less risk of post-partum retroversion than follows delivery where the uterus has never previously been misplaced. This less risk is due to the anterior direction of the ligaments. Puerperal retroversions are easily and permanently corrected by the temporary use of pessaries. It, accordingly, is the imperative duty of the obstetrician to see that every uterus is in its normal position for at least three months after delivery, whether there has been previous trouble or not.

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Massage in Neurasthenia.—The patients in whom massage is of most value are those feeble and emaciated individuals, asthenic in every respect, tired with the slightest effort, afflicted with atonic forms of dyspepsia in their most extreme degrees, often with flabby toneless hearts, low blood-pressure, anemic and incapable of the slightest mental exertion. The methods most suitable to neurasthenic patients are firm stroking or effleurage and kneading movements or pétrissage, the slapping, percussive and vibratory motions being omitted at first entirely, though vibration may soon be adopted for the abdomen, where it is especially useful in stimulating the intestinal muscle and the portal circulation. The mark of good massage is that the patient should feel rested and inclined to sleep, and should have a pleasant sense of warmth and comfort.—C. W. Buckley in the *Practitioner*.

THE TECHNIC OF THE EXAMINATION OF ESOPHAGEAL LESIONS*

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About 300 esophageal cases which have come under observation during the last four years have been studied not only with a view to the establishment of a correct diagnosis and productive therapeutics for the individual case, but also with the idea of determining the relative value of the clinical and technical findings. I wish in this paper to consider briefly those points which contribute to obtaining definite technical data safely.

The clinical examination is of the utmost importance not only for its intrinsic value, but as a guide to the succeeding technical procedures. The more important features to be determined in esophageal diseases by the technical methods of examination are the existence, size and relations of pockets, dilatations and strictures, and the character of the esophageal wall, notably at the seat of narrowing.



Fig. 3.—Diverticulum of esophagus, from skiagraph.

The technical methods which have proved of especial value may be grouped under three heads, namely: roentgenography, esophagoscopy and the various methods of sounding.

Roentgenography discloses thoracic masses obstructing the esophagus by pressure from without and occasionally a good shadow may be obtained of an esophageal tumor. Its chief service is that of revealing the position, shape, size and relations of diverticula and dilatations when filled with bismuth mixtures. Diverticula as a rule give shadows which are characteristic (Figs. 1 to 6). The large dilatations which occur in the upper third of the esophagus above organic strictures can be distinguished from diverticula by a tail-like portion of bismuth extending downward from the bottom of the sac (Fig. 7). However, this may be absent. Passing a small sound on

a thread quickly differentiates the two conditions. Most striking are the large, irregularly spindle-shaped shadows obtained in cases of diffuse dilatation of the esophagus following spasmodic and, infrequently, organic stricture at the cardia.

In cases of cardiospasm (Figs. 8 to 19) the lower extremity of the shadow is cone-shaped and its apex corresponds (Figs. 8 and 20) to the hiatus esophagi, while in cases of organic stricture the outline is irregular and terminates above the hiatus. In most instances the dilatation extends to the upper border of the manubrium and is constricted at the root of the lung. The dilatations occurring above organic strictures are, as a rule, of



Fig. 4.—Diverticulum of esophagus, from skiagraph.



Fig. 5.—Diverticulum of esophagus, from skiagraph.

limited extent and in their lower portion irregular in outline (Fig. 21).

While the fluoroscopic pictures are interesting in studying both the normal and pathologic processes of deglutition, they add but little to the plate method in esophageal diagnosis. Mucilage of acacia has proved the most valuable vehicle in which to give bismuth. It adheres to the esophageal wall and can be readily washed out. The heavier bismuth meals and the rubber bags filled with bismuth do not give any advantage commensurate with the discomfort caused the patient. The bismuth capsule but rarely gives information not more

* Read in the Section on Surgery of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

* The illustrations accompanying this article were so numerous that part of them have been omitted because of lack of space. The entire article appears in the Transactions of the Section and in the author's reprints.

easily obtained by other methods of examination. In patients complaining of slight or questionable dysphagia a delay in the passage of the bismuth may indicate grounds for an esophagoscopic examination.

In esophageal work, success, from both the diagnostic and the therapeutic standpoints, depends largely on our ability to pass instruments through the esophagus.

Safety should be the keynote in esophageal technic. This is to be obtained by a clear conception of the way in which the force is being expended when introducing an esophageal instrument. The force is dissipated either in overcoming the friction of the staff on the wall of the passage or at the tip of the instrument. Obstruction at the tip is due either to pocketing or actual narrowing of the lumen in the canal. Safety resolves itself into the recognition of pockets and avoidance of undue pressure on an instrument which is pocketed.



Fig. 8.—Diffuse dilatation of the esophagus in case of cardio-spasm.

The tip of an esophageal instrument must be constantly under the guidance of vision or must follow a guide in such a way as to make perforation of the esophageal wall impossible. Let us conceive an instrument having the qualities of the finest silk thread at its tip, gradually merging into a rigid staff (Fig. 22). With patient persistence the thread could be passed through any patent esophagus and, if tension were maintained on the thread, the staff could be introduced into the stomach. This is mentioned to call attention quickly to the principles involved in successfully and safely introducing esophageal instruments. Such departures from this hypothetical instrument are permissible, as the rigidity of the staff, tortuosity of the canal, necessary force, etc., permit, without invalidating the essential

principles. The adaptation of Mixer's method of using a silk thread as a guide has proved of inestimable value. The patient swallows six yards of silk thread. This passes down through a sufficient number of coils of intestine to prevent its withdrawal on being pulled taut.

With the whalebone staff and olive passed on a silk thread (Fig. 23*b*) we may locate pockets, determine their depth, measure the diameter of strictures, dilulse them and estimate the rigidity of the esophageal wall at the seat of narrowing.

Only sufficient force to detect obstruction is permissible in advancing an unguided esophageal sound. With a silk thread that degree of force may be used which is short of carrying the thread out of its course and through the esophageal wall, or of endangering the



Fig. 22.—An ideal esophageal instrument, consisting of fine silk thread gradually merging into a more or less rigid instrument.

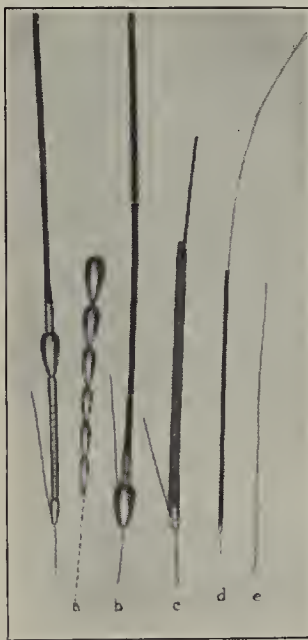


Fig. 23.—Various forms of esophageal sounds.

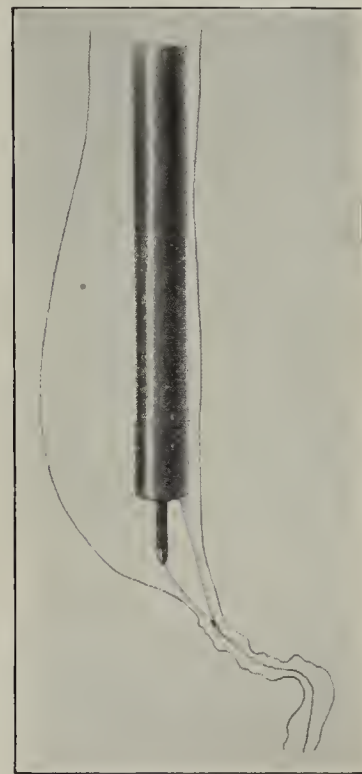


Fig. 24.—Piano-wire guide and carrier.

esophagus by longitudinal traction, or of splitting the esophagus by a dilating wedge. If sufficient obstruction is encountered to make it seem possible that the thread might be carried out of its course, a piano wire (Fig. 23*e*) should first be passed on a thread and the olive passed on the wire. With the wire in place the possibility of introducing a sound is assured. When passing an olive on the wire, tension on the thread should be maintained to avoid any possibility of the tip of the wire penetrating the wall of the stomach or esophagus. Figures 24 and 23*d* show the distal portion of a piano wire guide and carrier for working the wire through a tortuous cicatricial stenosis on a thread. Various sizes of piano wire may be used and its flexibility further varied by the amount of wire exposed.

In the treatment of cicatricial stenosis the wire guide is not often necessary after the first dilatation, and the thread may be dispensed with as soon as the smaller sizes of spindles will pass without encountering obstruction at the site of the stricture. Further dilatation is carried out with the sound shown (Fig. 23*a*); the flexible, spiral metal tip acts as a guide and the stricture is dilated with the olive inserted in the staff. In those dense, extensive strictures in which sufficient dilatation cannot be obtained by dilating with a spindle, I resort to a modification of Dunham's esophagotome, which utilizes Dr. Abbe's principle of cutting partially through the distended stricture by a string pulled back and forth.

Without going into the reasons, it is sufficient to state that an unguided sound will, as a rule, be pocketed if an opportunity is present. When introduced on a taut thread the sound follows the axis of the lumen of the esophagus. By varying the tension on the thread, obstruction from pocketing, and obstruction which is the result of actual narrowing of the canal, may be distin-

stricture with rigid walls. The more accurate determination of the diameter of the lumen of the canal and the rigidity of the esophageal wall at the seat of narrowing, which the elimination of pocketing permits, is well illustrated by lesions at the cardiac orifice.

The thoracic portion of the esophagus is placed nearly in the median line, but deviates to the left as it passes forward to the opening in the diaphragm. In passing an olive through the lower three inches of a normal esophagus the staff impinges on the left anterior wall and the olive is directed to the cardia by the left posterior wall. This portion of the esophageal wall presents an increasing degree of obstruction as it approaches a horizontal plane in cases of diffuse dilatation. The degree of obstruction encountered depends also on the stiffness of the staff, the size of the olive and the tonicity of the esophageal wall. A stiff staff has a tendency to penetrate the esophageal wall (Fig. 29*A*), while a relatively flexible staff conforms to the right posterior wall and the olive approaches the opening in the diaphragm



Figs. 27 and 28.—Metal-tipped stomach-tube guided by a thread.

guished. The elimination of pocketing permits a more accurate determination of the diameter of the lumen and the rigidity of the esophageal wall at the seat of narrowing. Figures 25 and 26 (also 27 and 28) illustrate the use of a sound in demonstrating the existence of a pocket, its point of origin and more dependent portion. The sound is first introduced into the diverticulum until obstruction is encountered; holding the sound in place, the thread is drawn taut. Traction on the thread will now lift the sound out of the esophagus sufficiently far to bring the olive to a level with the opening into the distal portion of the esophagus. Until this point is reached the sound cannot be advanced without relaxing the thread. The same procedure, using a metal-tipped stomach-tube stiffened with a whalebone staff, permits of obtaining the contents of a diverticulum, dilatation or of the stomach, with a definite knowledge of the location of the point of the tube and a certainty that it will enter the stomach (Figs. 27 and 28).

Crowding a sound out of a pocket, or out of a pocket and through a cardia or stricture much larger than the olive, may give the impression of having passed a narrow

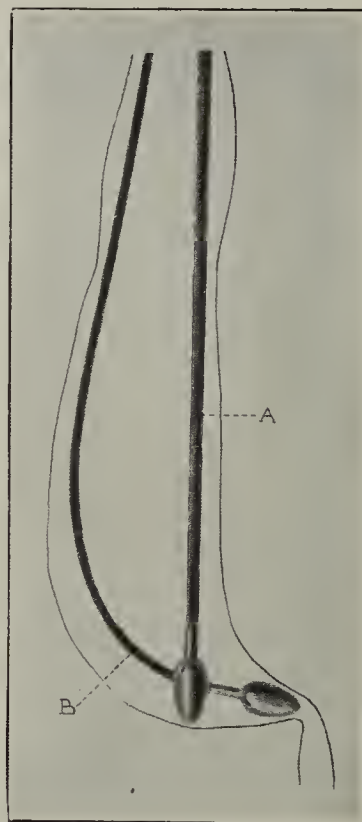


Fig. 29.

Fig. 29.—Diagram of diffuse esophageal dilatation, showing danger from stiff staff (A), together with use of flexible staff (B).

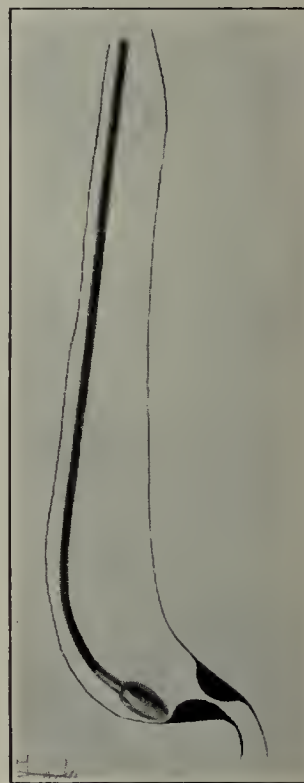


Fig. 30.

Fig. 30.—Passing a sound through a carcinomatous cardia.

at an angle with the axis of this portion of the esophagus (Fig. 29*B*). The rigidity of the esophageal wall and the ledge formed by the upper margin of the growth are also important factors in passing a sound through a carcinomatous cardia (Fig. 30).

In cases of diffuse dilatation following cardiospasm it is frequently impossible to pass an unguided sound through the cardia with a degree of force that is safe (thirty out of sixty-five cases which have come under my observation), while a 15-mm. olive but rarely meets marked obstruction when passed on a thread. Decided obstruction of yielding character, followed by slight hemorrhage, is usually encountered when passing a carcinomatous cardia, while in benign cicatricial stenosis the smallest sizes of olive encounter an unyielding esophageal wall.

Leaving foreign body cases out of consideration, the most essential service of esophagoscopy is that of revealing the character of the esophageal wall. It is a relatively safe procedure in the hands of one who has acquired

good technic. Safety lies in a clear conception of the way in which the force is being expended when introducing the instrument. Friction on the walls of the passage is an important element, as it makes advancement of the instrument jerky and obscures any fine sense of resistance at the tip of the instrument. I wish to call attention to Brunning's modification of Killian's esophagoscope (Fig. 31). It has a convenient and a sufficiently strong

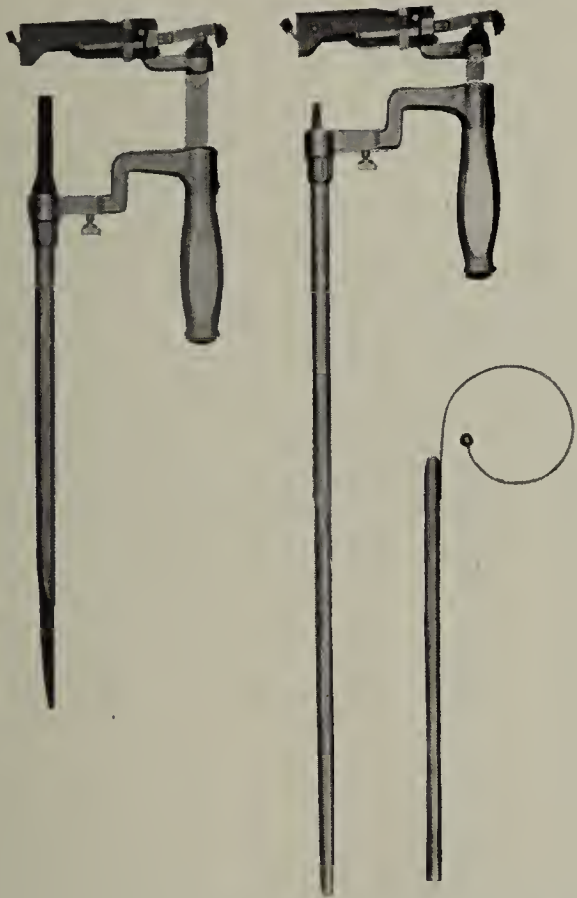


Fig. 31.—Brunning's modification of Killian's esophagoscope.

handle to permit of bringing the cardia into view, a light that rarely fails at the critical moment, a short upper section with a tip well adapted for easily passing the cricoid, and that eliminates friction in introducing a telescoping section through the lower portion of the esophagus. A satisfactory examination can, in the majority of

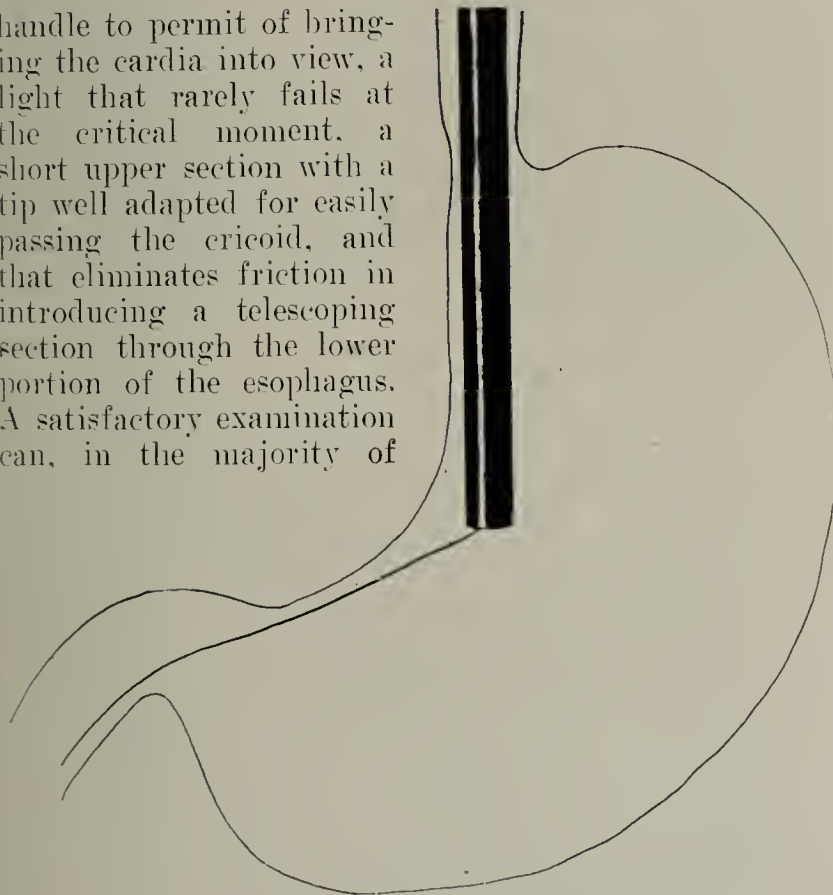


Fig. 37.—Thread used as a guide in gastroscopy.

cases, be made without an anesthetic in less than five minutes. In rare instances a guide becomes necessary to pass the cricoid, a ledge of mucous membrane, or a tortuous esophagus, the lumen of which is large enough to admit an esophagoscope. This guide must follow the

lumen of the esophagus in such a way as to make perforation with its tip impossible. At its tip it should be sufficiently flexible to follow the lumen of the canal or a silk thread, and yet not double on itself. From its tip it should gradually merge into the rigid staff of the esophagoscope so as not to permit of any abrupt curve or ledge which might bruise or gouge the mucous membrane.

In esophagoscopy work one of the chief drawbacks is the constriction of the esophagus above that portion of the esophageal wall essential to our knowledge. In about 35 per cent. of the cases of carcinoma, for instance, the mucous membrane is intact at the lowest point in the esophagus which can be brought under inspection. Figure 32 (also Fig. 30) illustrates an esophagoscope obstructed by a ledge formed by infiltration beneath an intact mucous membrane. A small esophagoscope may be introduced through a preceding one, with a guide, sufficiently far to bring the involved mucous membrane into view (Figs. 33 and 34). The elimination of friction by the first instrument introduced permits of safely carrying out this procedure in a good many instances.

Occasionally the thread is a valuable guide in following the course of the esophagus with the esophagoscope. To the experienced operator this is not of much advantage, except in cases of congenital malformation and in locating the slit-like opening into the distal portion of the esophagus in cases of diverticula (Figs. 35 and 36; also 23 and 24). When drawn taut the thread impinges on that margin of the distal opening of the esophagoscope toward the lumen of the esophagus. In direct gastroscopy, orientation is much facilitated in a similar manner (Fig. 37).

ABSTRACT OF DISCUSSION

DR. WILLY MEYER, New York: The method just advanced by Dr. Plummer is an extremely valuable addition to our resources for the diagnosis and treatment of esophageal troubles, especially of diverticula. It shows how we are able to make our diagnosis even in difficult cases. At the meeting of the American Surgical Association, recently held in Washington, Dr. Charles H. Mayo told us how he, on the basis of such a definite diagnosis, has been able to extirpate two pressure diverticula in the upper portion of the esophagus.

At the German Hospital of New York, Dr. De Witt Stetten, one of the adjunct surgeons, recently operated successfully in a case of this kind and published a very interesting analysis of esophageal diverticula. This class of diverticulum is a surgical disease. What I wish to emphasize is that it is also sometimes impossible in cases of large fusiform diverticula of the esophagus, as we meet them in consequence of cardiospasm of long standing, to get along with non-operative treatment. We know that if cardiospasm has existed for a long time the wall of the esophagus is very much distended, in the shape of a lamp chimney. In such a case I am sure that it is impossible to expect the esophagus, even with the cardia treated persistently by dilatation, to be amenable to reconstruction: the muscular layer of the esophageal pouch will not get back the power of thorough contraction so as to allow fluids and solids to pass easily down into the stomach. Often it is impossible to pass the contracted cardia with any kind of instrument or thread. In such cases operative procedures must be resorted to.

At the German Hospital in New York we recently had a patient, 45 years old, who had been sick for fifteen years with what was evidently a cardiospasm at the beginning. Later, in spite of treatment, the patient was unable to swallow anything. Even fluids were regurgitated after a little while. The patient had to be treated by rectal feeding. Soon gastrostomy had to be done. Careful diagnosis with the x-rays showed a stricture at the cardia, with a large fusiform dilata-

tion above. The sound always was caught in the region of the cardia, and could be introduced with gentle handling for nineteen inches (sixteen inches is the average length down to the cardia). Still, with the cystoscope in the stomach, introduced through the gastric fistula, we could not see the sound. It was caught in the large esophageal pouch above the diaphragm. Therefore, basing our procedure in a patient absolutely averse to further instrumentation on the knowledge that such an esophagus cannot retract to proper size, we proceeded in the following manner: With the help of the lower half of Schede's incision through the skin and serratus muscle the left thoracic cavity was entered in the seventh intercostal space with differential pressure. The lung, which was tightly adherent to the chest wall, had to be loosened, and was then pressed upward and inward. With good illumination we found the large fusiform diverticulum covering three or four inches of the esophagus, as diagnosed, just above the cardia. It represented a large pouch. After division of the posterior continuation of the costal pleura the pneumogastries were pushed aside and the left forefinger gradually worked around the pouch. A sound introduced from above was always caught posteriorly in a pocket near the spine. With the one hand in the thoracic cavity around the esophagus, the lower end of the sound could be guided and lifted upward with the other hand, so that it was made to pass through the cardia. I then made a plication or double fold in the esophagus by means of suture, in this way materially reducing the diameter of the fusiform dilatation in a length of three to four inches. At the end of the operation the esophagus was allowed to go back into its bed. To-day the patient is in good condition.

NOTE (Later).—At the end of June she is able to swallow everything without regurgitation.

DR. H. S. PLUMMER, Rochester, Minn.: Some sixty-five cases of diffuse dilatation of the esophagus have come under my observation, many of the patients being in the last stages of inanition, some of them right at the point of death. Many of them gave a history extending back over twelve or twenty years. I have not seen any case that was not readily, easily and completely cured by dilating the cardia.

TECHNIC FOR REMOVAL OF APPENDIX AND FIXATION OF CECUM

C. A. ROEDER, M.D.
GRAND ISLAND, NEB.

THE APPENDIX

Although removal of the appendix is generally a simple matter and is attempted by the general practitioner as well as by the surgeon, it is too often followed by annoying symptoms which are generally due to adhesions. Therefore any technic that is simpler than the average and does away with the possibility of post-operative adhesions, is the one to be adopted.

Below is a procedure adopted by George Roeder and myself in the last 100 appendectomies, which is a sufficient number, I think, on which to base an opinion. It is simple, rapid and also safe, requiring on the average ten minutes from the time the incision in the skin is made until it is closed.

Its essential features are a single purse-string, fine linen suture which is not cut until the operation is finished (Figs. 1 and 2). The suture, in passing from one side of the mesentery to the other, passes through the external coat of the base of the appendix on its mesenteric border in order to embrace an artery that might run along the surface, which will be inside the purse-string after the crushed stump of the appendix is inverted; no area of cecum is ever uncovered by peri-

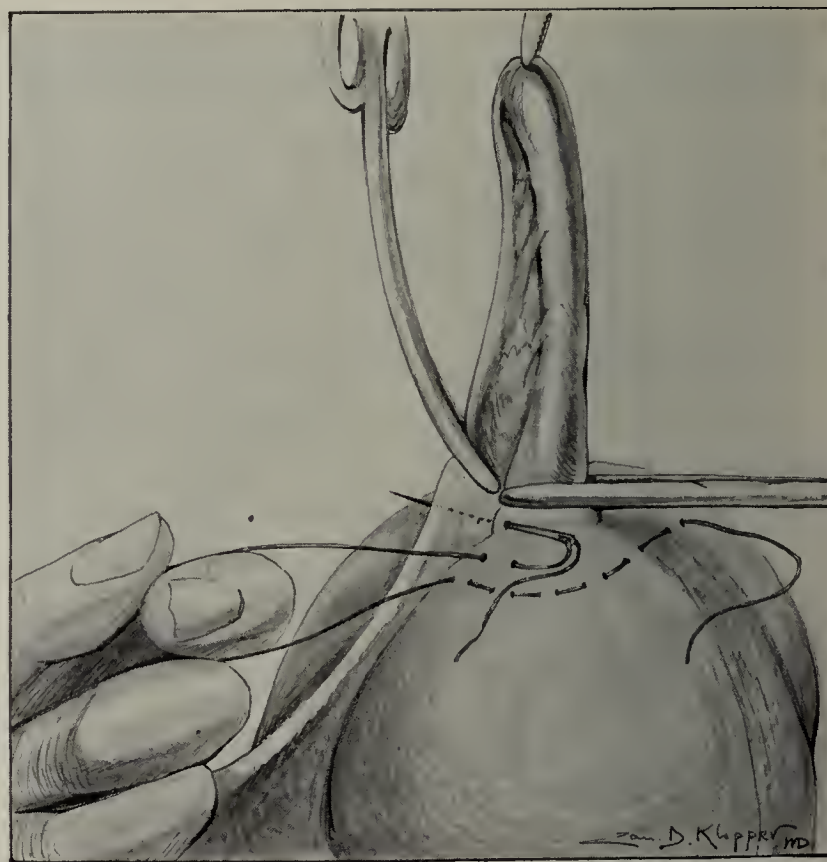


Fig. 1.—Appendix extended; crusher applied so as not to include any portion of the mesentery; artery forceps applied to the meso-appendix; purse-string suture passed through the external coat of the cecum, the needle taking a bite of the appendix through its external coat at its base on the mesenteric edge. The suture is then continued around on the other side, the loop being held by the assistant.

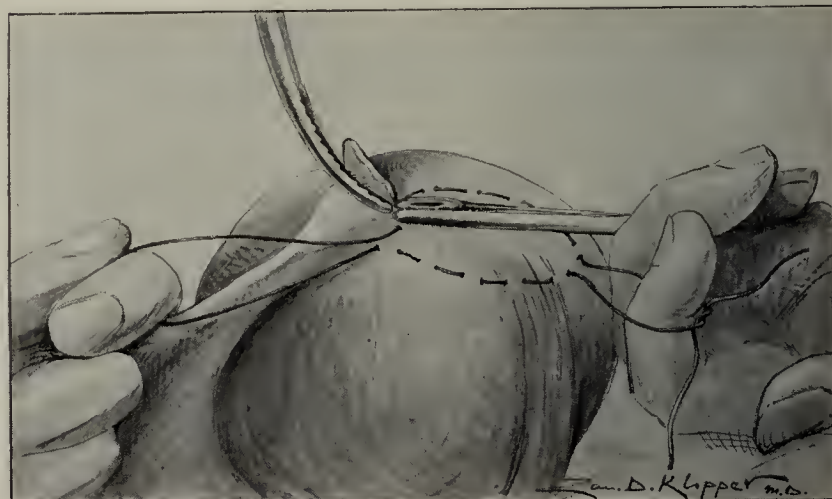


Fig. 2.—The appendix is cut flush with the crusher and the meso-appendix one-fourth inch above the artery clamp; the purse-string suture is shown completely encircling the appendix base. The crusher is now gently released and the stump is inverted.

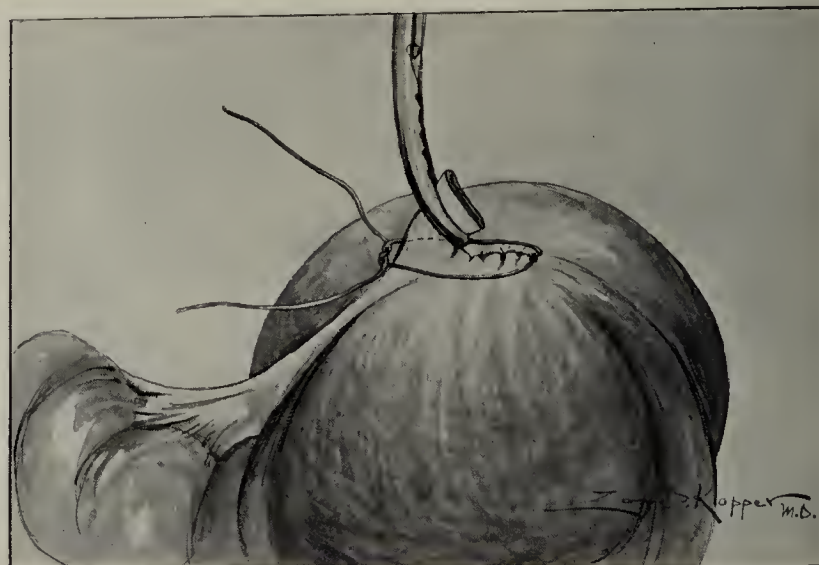


Fig. 3.—The appendix inverted; the clamp still on the mesentery: the purse-string suture is drawn together and its ends are being tied around the stump of the mesentery in the groove made by the clamp, which leaves a knob distal to it, preventing it from slipping off the mesentery and its artery.

tonem; this does away with suturing the peritoneum over the bowel as in other procedures. A second purse-string, continued from the first, inverts the stump of the ligated mesentery with its artery and buries the knot, leaving a perfectly clean peritoneum behind (Fig. 5). This second purse-string relieves tension on the first from post-operative gas, a valuable suggestion from the Mayo clinic.

We do not tie the stump; the procedure is entirely unnecessary with this method, and not without danger,

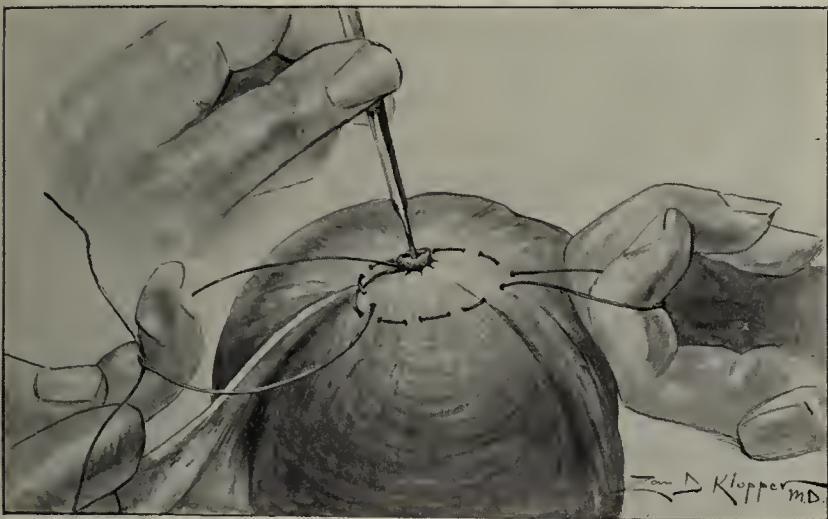


Fig. 4.—Meso-appendix tied over the point where the appendix has been inverted; no area of bowel uncovered by peritoneum. The original suture, uncut, is continued as a second purse-string suture, passing one-fourth inch beyond where it first entered the bowel and one-fourth inch internal. Note carefully the arrangement of the suture. When drawn it can readily be seen how the knot is inverted. The stump shown is the ligated meso-appendix.

as there would be a pocket formed, below by a ligated raw stump, and the purse-string above, inhibiting drainage into the bowel, which might be necessary for infected or necrosed material. Figures 4 and 5 illustrate further steps in the operation.

In some cases a short mesentery is found requiring separate ligation, and here the stump of the mesentery is covered by peritoneum from the two layers of the cut mesentery.

This operation does not interfere with the action of the ileocecal valve, as there should be no tension on the meso-appendix when finished. The second purse-string

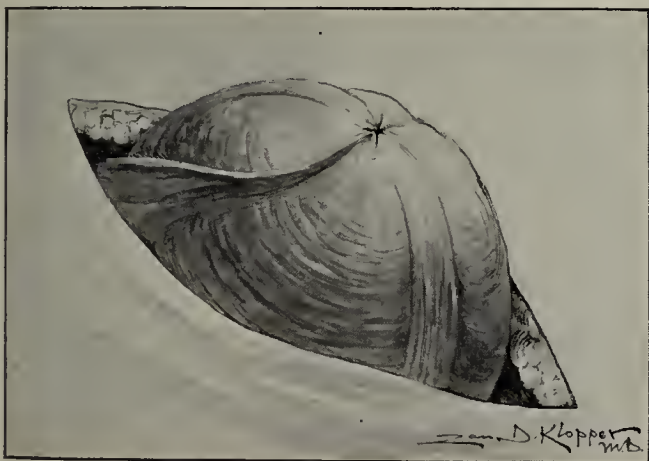


Fig. 5.—Operation completed; knot buried; remains of the meso-appendix are seen running across the cecum, with no area of bowel denuded and no portions of sutures exposed to the peritoneal cavity.

is large enough only to cover the stump of the meso-appendix with the serous coat of the cecum.

THE CECUM

The movable cecum, producing symptoms, we have anchored with excellent results by the following technic. The more dilated the pouch the more bites we take

around its circumference. Without dilatation only one bite is taken.

The sutures (linen) which are inserted on the external wall in order to avoid ligating the vessels (which are in the inner layer of the mesentery), include all the coats but the mucosa, and no harm is done if they should happen to include the mucous membrane.

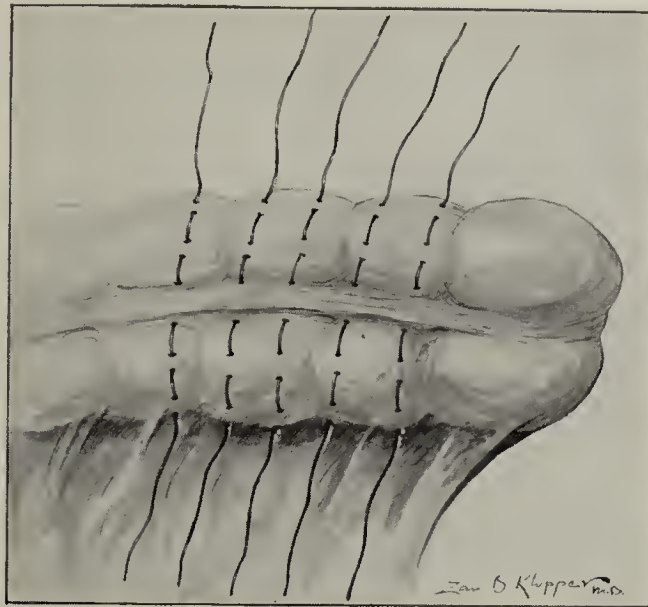


Fig. 6.—The cecum with its elongated mesentery; sutures placed. Note that the sutures have included the external longitudinal band, which gives them a firm hold. See conditions stated in text.

The sutures are then passed through the parietal peritoneum and fascia beneath, taking a bite about one-half an inch wide as close as possible to where the external coat of the mesentery of the cecum is deflected on to the abdominal wall. In this way the cecum swings from practically the same point, but the excursion is lessened. We use from three to eight rows of



Fig. 7.—A transverse section; the suture passed but not tied. Note that the suture leaves the bowel about where the peritoneum goes and takes a bite about where the latter is attached to the abdominal wall. The blood-vessels are on the other side and are never interfered with.

sutures one-half inch apart, depending on the size of the pouch and ascending colon, the degree of mobility, the age of the patient; the younger the patient the more fixation being required. The degree of constipation is another factor, as we have found often a very loose cecum in patients giving a history of constipation. Here we fix

the cecum and half of the ascending colon to give the bowel a fixed point (Figs. 6 and 7).

The appendix is often kinked, requiring removal. The kink described by Lane in the ileum should be relieved by dividing the bands producing it and fixing the cecum high enough so that the ileum approaches it from below, or at least at a right angle.

OBSERVATIONS ON TWENTY-EIGHT PATIENTS TREATED WITH THE EHRlich-HATA REMEDY (SALVARSAN)

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Notwithstanding the fact that Ehrlich says that the preliminary stage has been closed, one receives the impression from the recent literature on 606 that there are many points still to be settled in almost every phase of the work with this new remedy especially in regard to its administration, prognosis, indications and by-effects. We stand at the beginning of our work; many questions need elucidation, and it is of general interest that results should be collected from many different sources.



Fig. 1.

Fig. 1.—Graduated pipette (A) and large 250 c.c. cylinder (B).

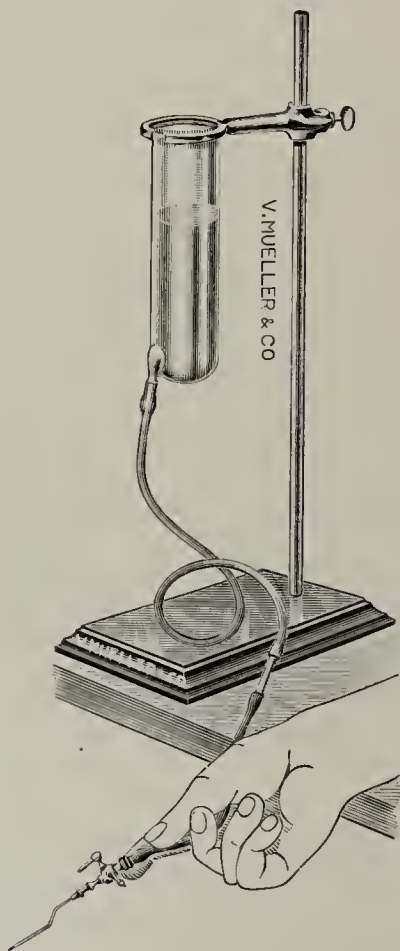


Fig. 2.

Fig. 2.—Intravenous apparatus.

The difficulty of following the technic according to the directions enclosed with salvarsan is apparent, for here one is told vaguely to use an intravenous method, a neutral suspension or an alkaline solution. At the present writing, the intravenous and the alkaline solution methods are the most popular in European clinics, but still each clinician is endeavoring to push his own method regardless of whether or not the other method is the superior.

From my personal experience with salvarsan (606) I believe that, while it is applicable in every case and attended by fewer symptoms afterward, the intravenous method, on account of the rapid elimination of the arsenic is greatly inferior to the intramuscular alkaline solution method of Alt and Lesser, and as a consequence should not be used in preference to all other methods. The same is equally true of the alkaline solution method.



Fig. 3.—Site for injections.

Each case should be treated individually with special reference to the following points:

1. Duration of infection.
2. Severity of infection.
3. Condition and age of the patient.

In all early infections (by this I mean those that come under observation before the Wassermann reaction is positive) the intravenous method is especially indicated. Here subsequent treatments may be given the same way on an average of every ten days for three or four times. This form of treatment applied in such a case is ideal, as the solution in the blood-stream is able to act on the spirochetes with deadly effect. In my opinion, the value of this method decreases in direct proportion to the length of time of the infection, as in the later stages the spirochetes are so securely entrenched by the pathologic-anatomic lesions that the intravenous injection has only a minimum effect on the condition. This is borne out by Mickley¹ in Lesser's clinic. However, in paresis and in malignant lues, where quick action is desired, this is the only method that should be employed.



Fig. 4.—Record syringe.

Fig. 5.—Needle (21 gauge) used in Record syringe.

INTRAVENOUS TECHNIC

The instruments are one large 250 c.c. cylinder (Fig. 1, B), filter-papers, one funnel, one intravenous apparatus, like the accompanying cut (Fig. 2), one graduated pipette, (Fig. 1, A), and one stock bottle of normal

1. Mickley: Deutsch. med. Wehnschr., Oct. 13, 1910, p. 1903.

sodium hydroxid solution (4 per cent.). The instruments and filter-paper having been previously sterilized (which may be accomplished for the latter by moist heat and later drying between sterile towels), also the ampoule of salvarsan and the file by immersion in alcohol; the ampoule is dried, opened with the sterile file and the contents poured into the cylinder. As this salt goes into solution very much more readily than the earlier supplies of the substance, it is not necessary to add any glass pearls to assist in the mixing. Fifteen c.c. of hot water



Fig. 6.—Indurated primary lesion, Nov. 3, 1910 (Case 1).



Fig. 7.—Healed lesion in 12 days, Nov. 15, 1910 (Case 1).

are added; the hotter the water, the more quickly the substance will go into solution. Next normal sodium hydroxid solution is added, about 2 c.c., and shaken thoroughly. A precipitate occurs. Then sodium hydroxid solution is added, drop by drop, the solution being shaken after each additional drop until it is absolutely clear, care being taken not to add any excess of NaOH. Next distilled water is added up to 200 c.c. The whole is then filtered into the receptacle which accompanies the intravenous apparatus. Here the outlet is in the side of the cylinder, slightly above the bot-

tom, forming a little receptacle that holds any foreign material that may get into the cylinder, thus ensuring a more perfect solution injected. It is not necessary to use normal saline solution, as the above solution is very nearly isotonic. Next, the arm is thoroughly scrubbed

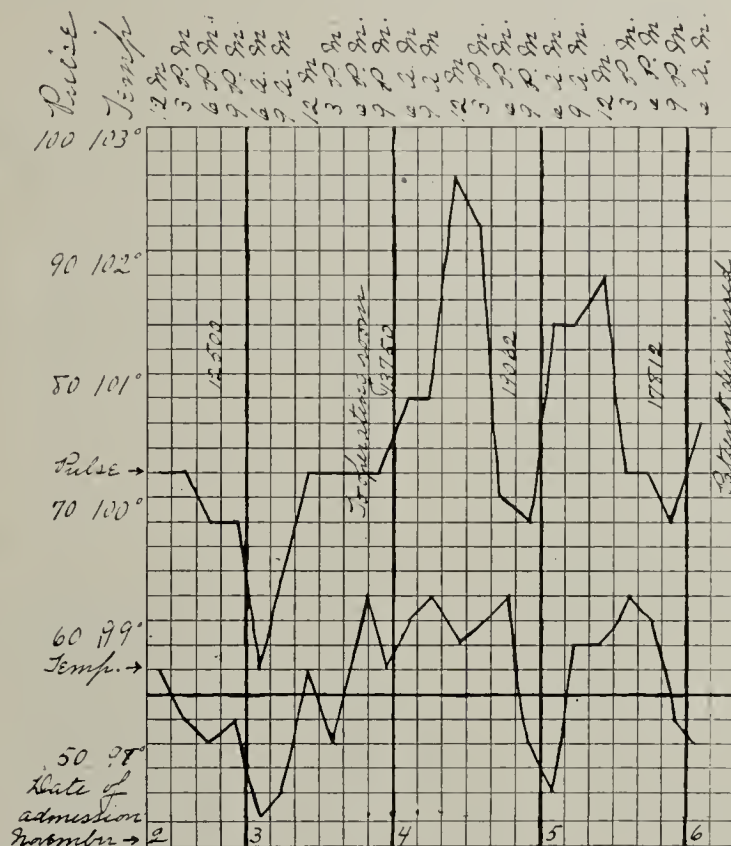


Fig. 8.—Chart showing pulse, temperature and leukocyte count of a case of primary lues (Case 1). This patient came under observation before the secondary eruption but after the Wassermann reaction was positive. The leukocyte count went to 19,062. This is the average in this class of cases. This patient has had two injections, the Wassermann becoming negative and remaining so after the fifth week.

and a constrictor is placed above the elbow. After taking care that the solution runs through the tube and needle easily and that it is not above 98.6 F., and that the air bubbles are all extracted, the needle is thrust into the vein, great care being used not to puncture the vein except in one place, for any of the solution elsewhere than in the vein will produce a marked paraphlebitis. With the two-way cock attachment, it is easy to tell when one is in the lumen of the vessel, as the blood will come pouring out.

Then it is an easy matter to remove the constriction, turn the cock, and send the solution into the vein. With the cylinder raised 28 or 30 inches above the patient's head, and with an 18 or 20 gauge needle the solution will pass in easily in about seven to twelve minutes.

It is true that filtering the solution may seem to be superfluous, but often the salt agglutinates and there are small gelatinous-like particles that do not dissolve;

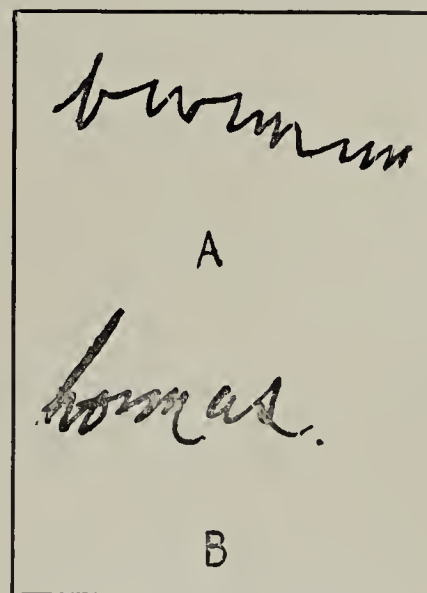


Fig. 9.—Handwriting of a patient with cerebrospinal syphilis occurring during the secondary manifestation (Case 4). A, portion of patient's name written by himself the day before injection, Oct. 17, 1910; B, same portion of patient's name written by himself two days after injection.

and again sometimes there may be some splintering of glass in opening the ampoule. Therefore, in order to carry this technic out in the best possible manner, it is necessary to have a perfect solution. When the solution has passed into the vein the wound is closed with a collodion dressing.

TECHNIC OF ALKALINE SOLUTION

The materials are: 15 c.c. graduated cylinder with glass stopper, tube of salvarsan and file, which have been previously sterilized with alcohol, one graduated pipette, stock bottle of normal sodium hydroxid solution and one 4-ounce beaker. It is best to sterilize the glassware



Fig. 10.—Severe secondary syphilis; papulopustular ulcerative syphilid of the legs (Case 5).

with dry heat. The salvarsan is placed in a graduated cylinder with glass stopper; 15 c.c. of hot water are added immediately; the solution is shaken vigorously until every particle of the salt is dissolved; then 2 c.c. of normal sodium hydroxid solution are added; a precipitate occurs. Then the sodium hydroxid solution is added drop by drop, being shaken vigorously after each addition, until the solution becomes perfectly clear, avoiding any excess of NaOH; then hot water is added enough to make 20 c.c. of the total solution. Then 10 c.c. of this solution are injected deeply into the buttocks on either side (Fig. 3), care being always taken to cleanse the parts with soap, water and iodine, and to cover them after the injection with absorbent cotton and flexible collodion.

The syringe used (Figs. 4 and 5) is a Record with a twenty-one gauge needle as seen in the cut. The best place to give the injection is in the outer quadrant of each buttock, carrying the needle in at a slant of 45° from above downward as is shown in the illustration, to permit the solution to gradually separate the muscles. The patient should always be put on the abdomen or side for half an hour. This is the method employed in Lesser's clinic.

DOSE

According to the printed instructions which accompany the ampoule of salvarsan, the average dose intravenously is 0.3 gm. for women and 0.4 gm. for men. This is entirely too small and will surely be followed by

recurrences, as has been proved by Alt and Schreiber,² Miekley¹ and others. One can safely give the full contents of the ampoule, 0.6 gm., to men, and 0.5 gm. to women unless they are otherwise affected by disease. And it is safe to follow this up after four or five days with an alkaline intramuscular solution of the same strength, or again in ten days with the same strength intravenously. I have repeatedly given the injection intravenously followed by an intramuscular injection in five days, and in numerous occasions I have repeated the intramuscular injection five weeks later, using 0.6 gm.

I have sent all of my patients to the hospital for their first injections, but being encouraged by the absence of symptoms I attempted with some patients to give the second injection in my office. This, however, I find is not at all satisfactory, for in some of these cases the shock which followed the injection was extreme, and the patients were not able to go home for some hours. I have repeatedly given the injections interscapularly into the muscles of the back and at the angle of the scapulae into the latissimus dorsi muscles, but I cannot see the superiority of this location over the injection in the buttocks, except that it permits the patients to get around a little more easily. Some observers have used a local anesthetic following or preceding the injection, but as the pain is only transitory and of much less severity than that which occurs later,



Fig. 11.—Only pigmentation and slight scaling left after thirteen days (Case 5).

I cannot see that it has very much value. Dr. Marks³ recommended 1 c.c. of 2 per cent. phenol, to be mixed and administered with the injection. I have administered a rectal suppository containing 1/4 grain of opium, which seems to act very well.

At the present time it is best to treat all nursing children by a previous full-dose injection into the mother. If this cannot be done, the alkaline solution is injected into the buttocks, and the dose should be from 0.02 to 0.03 gm., depending on the age of the patient.

2. Alt: *Deutsch. med. Wchnschr.*, Oct. 13, 1910, p. 1896.
Schreiber: *Ibid.*, p. 1898.

3. Marks: *Interstate Med. Jour.*, Jan. 1, 1911, p. 32.

MODE OF ACTION: INTRAVENOUS METHOD

If the solution is placed directly in the blood-stream, the specific acts immediately on any spirochetes that happen to be there and it depends on the larger or smaller number of organisms in transit through the lymphatic or blood-stream whether the symptoms which follow are more or less acute.

There is a period of quiescence following the injection for about five or six hours, then there occurs general malaise, followed by a chill, abdominal cramps and vomiting. The cramps and vomiting may be repeated and last several hours, the temperature rising sometimes to 102 or 102.5. As a rule by another six hours it is normal.

This is typical only of those cases in which the spirochetes are easily accessible. In one of my cases with an extensive papular eruption, there were only abdominal cramps and diarrhea. There is no question but that the intravenous method in proper hands is good, as it is followed by practically no unfavorable symptoms, but in order to obtain a maximum amount of effect it must be repeated again and again. The only danger lies in a puncture of the vein, with consequent paraphlebitis taking place.

more remote the infection, the less severe, correspondingly the reaction has been, so that in some of the tabetic patients who were treated, the local reaction was practically nil. Since I have been carrying my injec-

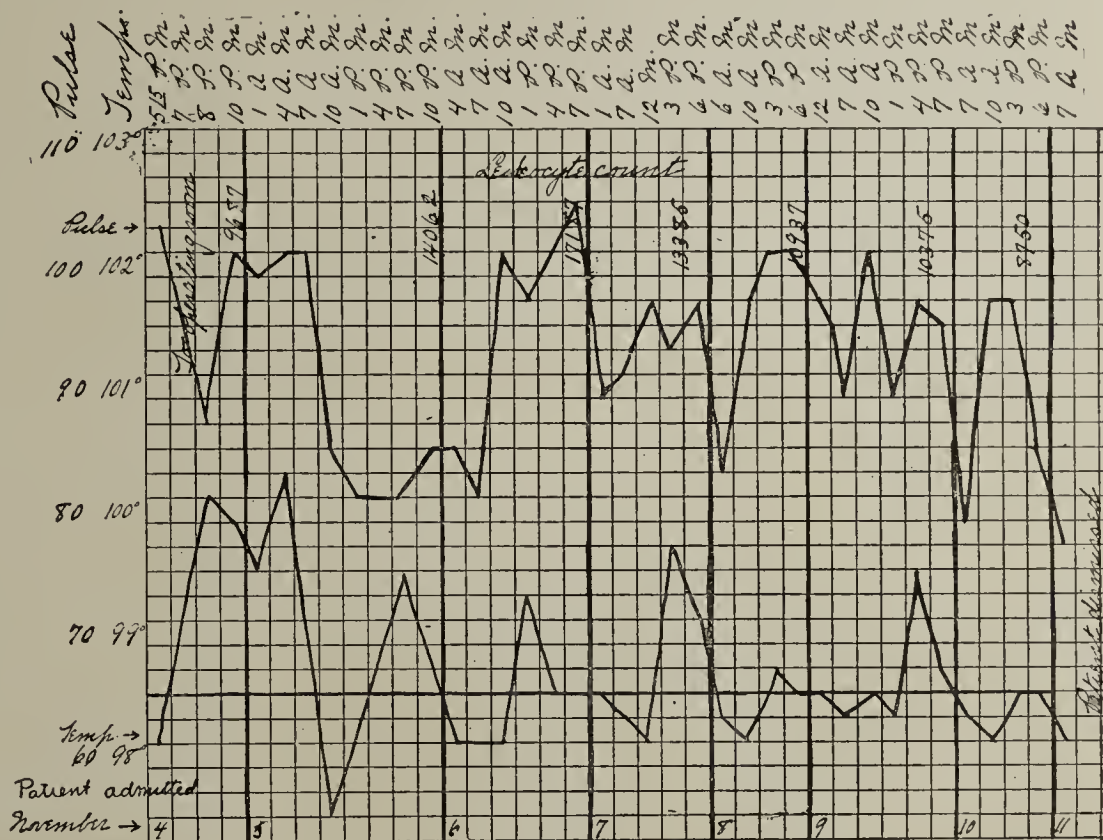


Fig. 12.—Chart showing pulse, temperature and leukocyte count in Case 5 (see Figures 10 and 11). The temperature and pulse ran a little higher here, but the leukocyte count went to 17,187. This patient has since had two injections, but fails to obtain a negative Wassermann reaction. He has since been put on mercury treatment.

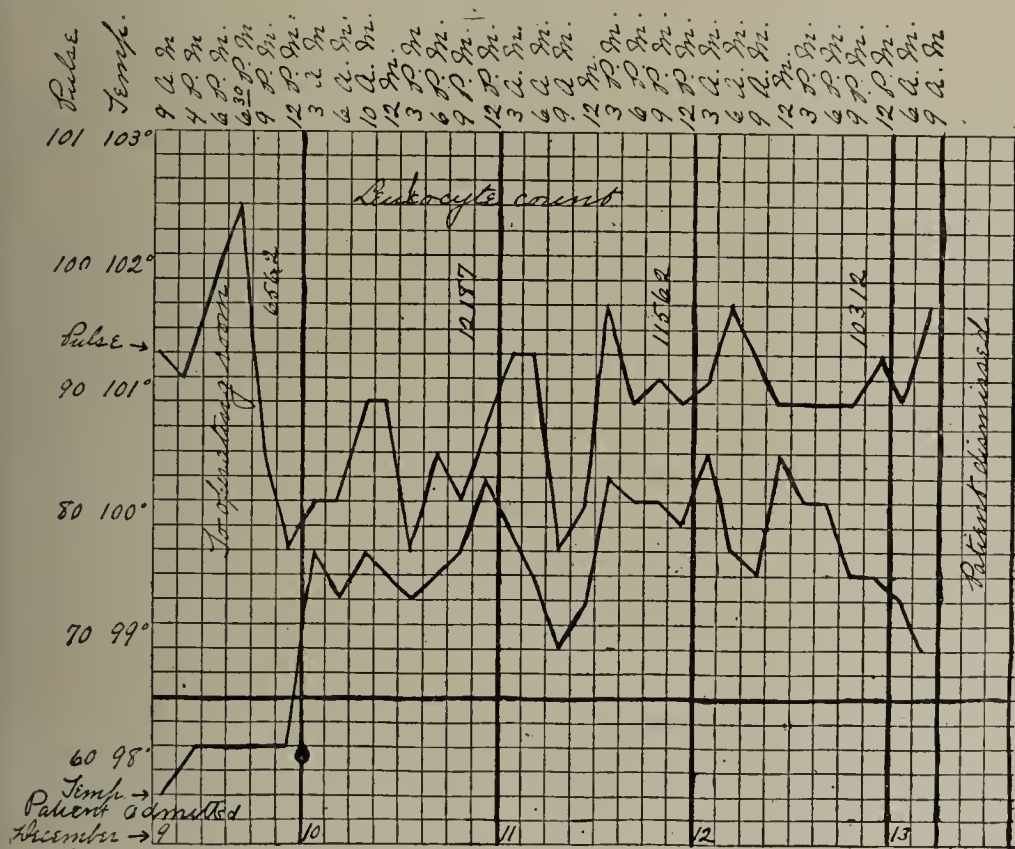


Fig. 13.—Chart showing pulse, temperature and leukocyte count of a case of Erb's spinal spastic paraplegia of syphilitic origin. This count is low, as was the case in all patients treated in whom the infection was of long duration and characterized by minimum destruction of tissue.

MODE OF ACTION: INTRAMUSCULAR METHOD

In order to avoid attacks of fainting and shock, which at times accompany the injection (I must say that this liability is greatly lessened with the newer salt, salvarsan) it is best to place the patient lying on the abdomen and always to disconnect the needle to see if there is any hemorrhage present. It has not been necessary except in a few instances to administer any opiate; and the

tion well to the outer margin of the buttocks, the ensuing neuritis has been practically absent. Frequently the pains are severe, radiating down to the foot, simulating a severe sciatica, but as a rule in several hours they pass off. When these injections were given into the muscles of the back, the referred pains in the abdomen, the arms and the hands were often very severe.

Over the site of the injection there comes an acute sensation of pain, which usually lasts about five to six hours. This is replaced by a dull sensation and a feeling of stiffness that rapidly changes to pain, reaching its maximum on the third to fifth day. Following the injection the area soon becomes boggy and red, resembling erysipelas in the severe infections, so that the patients are not able to sit down. This also does not, as a rule, reach its maximum effect until the third or fifth day.

Sweating.—This occurs in every case in which there is any systemic infection, but in none of my cases was it ever due to any extraneous organisms. It is caused by the endotoxins that are formed from the killed spirochetes. It usually begins the first night following the intramuscular injection and may continue for ten days. It usually reaches its maximum effect the third to fifth day and then gradually subsides. It is not present after the second injection in such a perceptible degree.

Using the neutral suspension, numerous cases of abscess have been reported. This is attributed either to the method of preparation, as in this way it is not easily

kept sterile, or to the fact that the salt injected subcutaneously acts as a foreign body.

In none of my cases has there been the slightest sign of abscess, but unless the strictest asepsis is carried out, this surely will happen as a complication.

As a rule the swelling subsides rapidly and is fairly well absorbed at the end of the second week. Some nodules may remain unabsorbed for many weeks. This is particularly true after the more concentrated solutions. For a time I prepared my solution with a 20 per cent. solution of sodium hydroxid, dissolving the salt in 9 c.c. of water, so that when finished the whole dose was contained in 10 c.c. of solution. This in particular was followed by considerable pain and by nodules.

The personal element, however, plays an important rôle in regard to the effect of the injections. Women as a rule, bear them better than men.

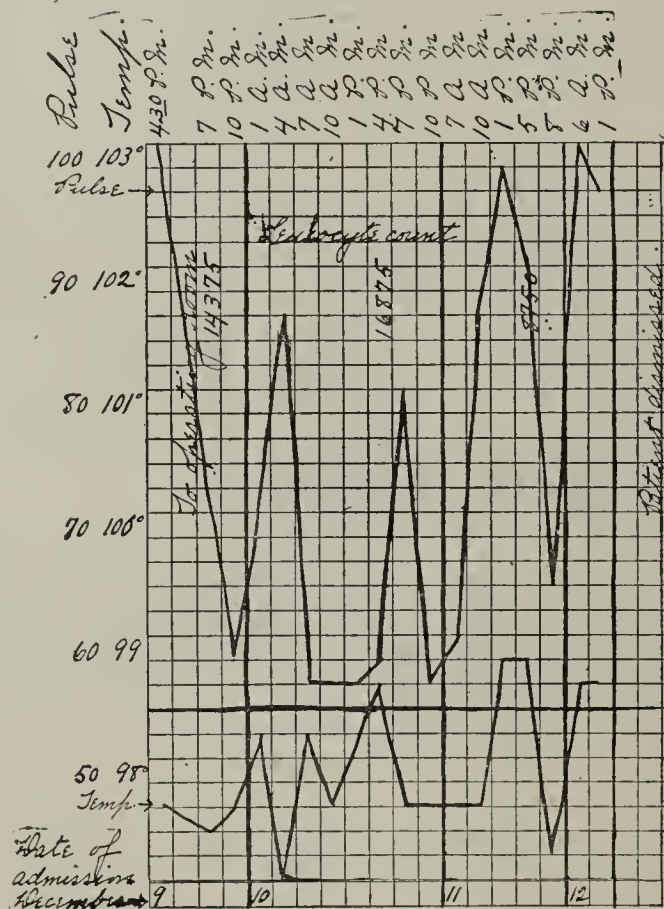


Fig. 14.—Chart showing pulse, temperature and leukocyte count in a case of latent syphilis complicating pulmonary tuberculosis. The count here is a little below average, but the local reaction was most severe. After five weeks his Wassermann reaction remains positive.

If the pain is severe, hot sitz-baths together with hot applications are of most benefit. The insomnia that follows after the injection, while at first due to the pain, is later the result of the stimulating effect of the arsenic. The general condition may remain undisturbed, though there may be loss of appetite, and malaise, but this passes off rapidly and in a week there is a wonderful stimulation (as Fritz Lesser⁴ calls it, "the organotropic effect of the arsenic"). There is an increase in weight and general nutrition, including an improved blood-picture.

In a few cases there were numerous urticarial rashes after the second day. These, however, were transitory and caused practically no inconvenience.

The Herxheimer reaction was present numerous times (local irritation of spirochetal foci); but it was most marked in late secondary manifestations. In one instance, I excised a dactylitis syphilitica, believing that it contained pus, but it was nothing more than a local reaction.

Urine.—There have been no quantitative examinations made for arsenic. Albumin and casts have been found numerous times, but these were always transitory. A most careful examination of the urine was made of the patients who had received the second injection, and only in two instances were there any symptoms of renal irritation.

Temperature.—In the majority of cases the temperature was influenced but slightly, rarely going beyond one hundred degrees, often remaining perfectly normal; but occasionally there was a sharp rise, especially if the combined method had been used and the first injection had happened to kill a large number of spirochetes.

Pulse.—This varies with the degree of pain and the general condition. Of course, being a new form of treatment, the suspense and excitement often cause an unnatural rise.

Leukocyte Count.—In all cases a careful count was made from day to day and it can be safely said that there is a direct relationship between the relative number of killed spirochetes and the leukocyte count. In all cases in which the infection was recent and at all active, the leukocyte count was relatively high. In one case following an intravenous injection it went to twenty-eight thousand. Repeatedly, following the intramuscular injection, the count went from seventeen to nineteen thousand. On the other hand, in all cases in which the infection was at a minimum (this is especially true of tabetics) there was only a slight leukocytosis. As Neisser⁵ has shown, there is no reaction in healthy non-syphilitic patients. We might, then, use this method in a measure to ascertain whether our treatment has been effective.

REPORT OF CASES

At the present writing I have treated sixty-two patients. I wish, however, to report on twenty-eight cases in detail, as the others have not been under observation for a sufficiently long time.

The medical examinations were made by Dr. Milton M. Portis and the ophthalmologic examinations were made by Dr. Cornelius A. Leenheer.

These cases include:

1. Primary syphilitic lesions after the Wassermann reaction was positive, but before there were any secondary skin manifestations.
2. Early secondary syphilitic lesions.
3. Late secondary syphilitic lesions.
4. Tertiary syphilitic lesions.
5. Syphilis of the nervous system.
6. Latent syphilis with only a positive Wassermann reaction.

Unfortunately, I was not able to observe a primary lesion sufficiently early to show only a negative reaction, and as a consequence I was not able to apply Ehrlich's theory of *therapia sterilisans magna* in an ideal case.

1. Primary syphilitic lesions after the Wassermann reaction was positive. In this series there are four cases.

CASE 1.—The patient, J. F., 19, single, came under observation on Oct. 31, 1910. There had been an incubation period of fifteen days. The sore had been present three weeks at the time of examination. A few spirochetes were found. The Wassermann reaction was positive.

On Nov. 3, 1910, an injection of 0.5 gm. (10 c.c. of solution) was made into each buttock. The first picture (Fig. 6) was made Nov. 3, 1910. Complete healing took place in twelve days (Fig. 7). A Wassermann examination Nov. 28, 1910, was negative. On Dec. 12, 1910, a second injection was made, 0.6 gm.

4. Lesser, Fritz: Berl. klin. Wchnschr., Oct. 24, 1910, p. 1975.

5. Neisser: Berl. klin. Wchnschr., Aug. 8, 1910, p. 1485.

in concentrated alkaline solution. On Jan. 8, 1911, Wassermann still negative. On Nov. 28, 1910, I excised the remaining sclerosis at site of the primary lesion and this was examined for spirochetes by Dr. Maximilian Herzog after Levaditi's method. His report is as follows:

"Microscopic examination showed the mass removed to be composed mostly of granulation tissue which exhibits the characteristic endo-, meso- and periphlebitic vascular changes generally so well marked in primary and secondary syphilitic lesions. No spirochetes could be found in the silvered section, however."

It is needless to say that I realize that in due course of time the spirochetes would migrate from the lesion without any treatment whatever, but we had a considerable amount of granulation tissue left at the site of the primary lesion. The Wassermann reaction was negative and it was a question whether or not any organisms remained locked in the tissue, being so insignificant as not to produce a positive Wassermann.

Iversen⁶ has followed out the same idea by examining the inguinal glands for spirochetes. He examined ten patients, three to five days after treatment and although the spirochetes had been present in great numbers before the injection, they were absent afterward.

In the above case there was a more perceptible reaction following the second injection, general malaise, chilly sensations and nausea. This, I felt, was due to an anaphylactic reaction, but in the light of similar conditions in other patients, I attributed it to the action on the spirochetes with resulting endotoxemia, the general condition of the patient being wonderfully good.

CASE 2.—The patient, M. E., was given a combined treatment, intravenous injection followed in five days by an intramuscular injection. After the intravenous injection he suffered a violent attack of chills, vomiting and abdominal pains, with a temperature of 102 F., which promptly receded the following morning. In three weeks he gave a negative Wassermann reaction, which four weeks later, on Jan. 8, 1911, was still negative.

I have used the intravenous method in the other cases of this series, in none of which was the reaction so acute. This I attribute to the solution catching a large number of spirochetes in the blood-stream, as the injection was given at the time that the first eruption should make its appearance. In the other patients so treated, the eruption had been out many days. The organisms were entrenched, so to speak, in the tissues, consequently the general reaction was not so acute and characterized only by cramps and diarrhea.

Two of the patients in this series have maintained a negative Wassermann reaction; the other two still show a positive reaction. All have had two injections, and no return of symptoms.

2. Early secondaries from one to six months' duration, characterized by skin eruptions and mouth lesions. This series comprises ten cases. The oldest case is of four months' duration, the shortest six weeks. All have had a second injection from the fourth to fifth week after the first, except one case, regardless of whether their Wassermann reactions were negative or positive. In none of these cases has there been any return of external signs of lues.

CASE 3.—The patient, B. B., 18, single, was infected April 1910; chancre on left tonsil. Secondaries appeared May 7, 1910. The diagnosis was secondary lues, only manifested by external lesion in throat.

The patient was put on rubbings which were continued until July 10, at which time there were no external signs of lues. He was put on proto-iodid pills, 1/6 gr. three times a day.

In September plaques appeared on both tonsils. On Oct. 17, 1910, the day before treatment, examination for spirochetes showed twenty to thirty in the field. Next morning, October 18, an injection was given, 0.5 gm. of the alkaline solution, 10 c.c. in each buttock. The second day, no spirochetes were to be found; the fourth day, complete healing. Nov. 11, 1910, the Wassermann reaction was negative; likewise on Jan. 8, 1911. Jan. 15, 1911, the injection was repeated, 0.6 gm. The patient's condition was excellent.

CASE 4.—Figure 9 shows the handwriting of a patient with cerebrospinal syphilis that occurred during the secondary manifestations. The patient was infected six months previously and at the time of his cerebrospinal disturbance he had plaques on the tongue, a discrete papular eruption and condylomata. At the time of examination, Oct. 18, 1910, he was suffering from a right hemiplegia, and ptosis of the left eye, the left side of the mouth drooped, there was a slight delirium, incoherent speech, and slight comatose condition. Spirochetes were present in the plaques, and the Wassermann reaction was positive.

The patient was given 0.6 gm. in an alkaline solution into each buttock. The temperature never went higher than 101 1/5 F., the pulse never above 90. Three weeks after injection the man walked into my office in a greatly improved condition. While he could not tell me his home address, he was perfectly able to discuss the topics of the day.

The patient's general improvement has been most striking. He had another injection of 0.6 gm. at the end of the fifth week but the Wassermann reaction still remained positive. He has since gone back to work. Dr. Hugh T. Patrick saw this patient on two different occasions, the first time two days before the first injection and the second time eight weeks later. Dr. Patrick's comment was that the patient was "altogether a different man, but obviously not yet normal."

CASE 5.—J. M., aged 28, married, was infected July 12, 1910. The patient was dissipated and his condition poor. Rubbings with mercury, and potassium iodid internally were employed. This treatment was continued until the time of injection. The Wassermann reaction was positive.

Figures 10 and 11 illustrate an extensive papulopustular ulcerative syphilid that extended over the whole body, but was most marked on the legs. The pictures were taken fourteen days apart, the first on Nov. 13, 1910. The first injection was given Nov. 14, 1910, 0.6 gm. in alkaline solution, 10 c.c. into each buttock. The second picture was taken Nov. 26, 1910. The second injection was given Dec. 11, 1910. The second Wassermann reaction, Dec. 10, 1910, was only slightly positive; the third, Jan. 15, 1911, was again positive.

Five of these patients obtained a negative Wassermann reaction from the third to the fifth week after their first injection. All were injected a second time and have remained negative up to the present writing. The other five have never obtained a negative Wassermann but have been reinjected. There has been no return of symptoms.

3. Late secondaries after the sixth month.

In this series there are eight cases; all the patients have had their infection for six months to two years. All showed either external signs of lues or mouth or throat-lesions.

CASE 6.—The second patient in this series presented plaques on the tongue. These had been present with only slight remissions for one year. The patient was injected in the morning and by afternoon there was sharp bleeding in the lesions and by the second day a thin epithelial covering had begun to form. All healing was completed in one week; at the end of three weeks there was a negative Wassermann reaction; the fifth week a positive reaction. Two days later a second injection was given; this was followed the next day by general malaise, chills, nausea and vomiting; temperature 102° F. The following morning temperature normal.

At first I attributed this also to an anaphylactic reaction, but the incubation period was too short. It was

6. Iversen: Deutsch. med. Wchnschr., Oct. 13, 1910, p. 1899.

further too late for an acute toxemia following the administration of the salvarsan. My deductions here are the following: The pathologic-anatomic lesions so securely held the spirochetes that the first injection only permitted the outer protecting wall to be influenced, while the second injection then was able to attack a large number of organisms, the patient suffering from an acute endotoxemia following the killing of so great a number. It is just this class of cases in which I believe the intravenous method to be of little value, as the remedy is eliminated before it has time to produce a maximum amount of effect.

I have not been able to obtain a negative Wassermann reaction again in this patient, but there has been absolutely no sign of any recurrence. In order that I may not lose the advantage that I have gained over the disease, I have put him on mercury treatment until such a time as I deem it expedient to repeat my salvarsan.

Another patient in this series, in whom I was able one year ago to get a negative Wassermann reaction after rubbing into him 100 grams of mercury, had an ulcerative syphilid in the right nasal opening at the time of treatment and a dactylitis of the middle finger of the left hand.

These lesions showed a beautiful Herxheimer reaction; also the site of the old chancre was affected the same way, showing again that the organisms must be well anchored in the lesion, and emphasizing how little value one can place in a single negative Wassermann.

4. Tertiary syphilis, one case.

This case presented a gumma involving the septum. Healing was prompt, although the Wassermann has still remained positive; but there has been a wonderful nutritional change, the patient gaining twenty pounds.

5. Syphilis of the nervous system.

In this series there are three cases; two cases of tabes and one of Erb's spinal spastic paralysis of syphilitic origin. One of the tabetic patients reports an improvement of pain, but there has been no subsequent Wassermann test. The other tabetic patient after two months shows a negative Wassermann reaction, with a cessation of the pain of tabetic crisis. The patient with Erb's spinal spastic paralysis of syphilitic origin also shows improvement of the vesical and rectal sense and action, lessening of rigidity in the abdominal and leg muscles, disappearance of dragging of toes, increased freedom in movement of right ankle, and improved sensation in right leg, but increased patellar reflexes in both legs and increase of ankle-clonus on right side. The pulse, temperature, and leukocyte count in this case are given in Figure 13.

6. Latent syphilis, manifested only by a positive Wassermann test.

In this series there are two cases.

In the first case there has been no change in the Wassermann reaction after six weeks, but the nutritional change is well marked. The second case was complicated by tuberculosis of the lungs. Here there was also no change in the Wassermann reaction, but nutritional change was marked. The pulse, temperature and leukocyte count are given in Figure 14.

PROGNOSIS

From the many reports that have appeared the prognosis as to the efficiency of salvarsan is good. To believe that we have a twenty-four-hour cure for syphilis is indeed a mistake, but that we have the best means yet discovered to combat syphilis is true.

Unfortunately, salvarsan has a bad heritage and still more unfortunate is the fact that it is somewhat complicated in regard to administration and as a consequence the future will undoubtedly unfold many calamities following its misuse.

That the possibility of a *therapia sterilisans magna* is not a fruitless idea of Ehrlich's is conceded by all rational syphilographers, but for its successful culmination one must see the patient extremely early, make a diagnosis before there is systemic invasion (before the Wassermann is positive), effectually destroy the lesion and give the combined treatment (intravenously and intramuscularly) at the earliest possible moment.

Unfortunately, the syphilographer does not see the larger number of cases early, and for the successful carrying out of the ideal method he will have to depend on the family doctor in order to put these cases under treatment successfully.

The longer a patient has been infected with the *Spirochæta pallida*, the less chance is there for a speedy cure. In my cases, notwithstanding the fact that symptoms disappeared, the Wassermann remained positive in all that were infected longer than six months; and any physician who tells a patient that one injection is going to rid him of his syphilis forever is guilty of gross deception. To give a patient one injection and permit him to wait, is clothing him with a false security, as his symptoms will surely return unless some other form of treatment is added.

At the present writing I am re-treating all my patients in the fifth or sixth week. In those that have gained a negative Wassermann reaction before the second injection, I stop treatment after the second injection. In those that still show a positive Wassermann reaction, I continue the treatment with mercury until such a time as I feel justified in injecting the salvarsan a third time. By so doing, I am not only holding the advantage gained by the action of salvarsan, but am continuing the treatment to the best possible advantage.

Neisser⁷ says that in the present enthusiasm over salvarsan we seem to forget that we were ever able to cure syphilis with mercury, and he suggests that we use mercury as an ally to salvarsan. Even Ehrlich⁸ says that the best way to combat the disease is by different kinds of treatment, the same as a general would attack a hill "from all sides."

The biologic management of the patients after treatment with salvarsan is of the greatest importance if we wish to carry them to a successful termination. In fact, it is the only method available of controlling the disease before external manifestations occur.

A patient in whom the reaction persists after treatment must be considered as not cured. If the reaction disappears we have to differentiate between two possibilities: either we may have a true cure, which is indicated by the lasting disappearance of the reaction, or on the other hand, we may be dealing with a transitory negative phase, due to the fact that the remaining spirochetes are so diminished that those still left are not able to produce a reaction, and when they have again increased in number a positive reaction will again occur. This positive relapse without external manifestations is an indication for further treatment.

CONCLUSIONS

1. We have in Ehrlich's remedy a powerful agent against syphilis.

7. Neisser: Deutsch. med. Wchnschr., Oct. 13, 1910, p. 1889.
8. Ehrlich: Deutsch. med. Wchnschr., Oct. 13, 1910, p. 1893.

2. A single injection has in favorable cases approximately the same result as four to five months' treatment with mercury and iodine.

3. It may show a brilliant effect in cases in which mercury and iodine have failed.

4. Salvarsan has advanced the treatment of syphilis in a decided manner, but on account of its strong arsenic content, repeated doses may have a disastrous effect on the human organism.

5. Every physician should master the technic before attempting to use it. Only in this way will the drug be safely guarded from many pitfalls.

In closing I wish to thank Dr. Joseph L. Boehm, of St. Louis, for his kind suggestions and Dr. D. N. Spaulding, Dr. John H. Fletcher, Dr. R. Dawes, Dr. D. Borges, Dr. H. H. Redfield, Dr. J. H. Nowlin, Dr. J. D. Bartlett, Dr. G. H. Stannard, and Dr. Nelson Percy for their kindness in referring a part of my material to me.

100 State Street.

INTRAPERITONEAL SHORTENING OF THE ROUND LIGAMENTS FOR RETRO- VERSION OF THE UTERUS

THROUGH THE TEMPORARILY DILATED INGUINAL CANALS
AND INTERNAL RINGS, WITH CLOSURE OF THE
WOUNDS BY A CAREFUL HERNIA TECHNIC *

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Eleven years ago, at the Columbus session¹ of this Association, I took the initiative in this country in assailing the various fixation and artificial ligament operations for retroversion and flexion of the uterus in women who retain a capacity to conceive. At that time the results of such wrong and misdirected surgery already began to appear on the continent of Europe, and no great amount of erudition in *a priori* reasoning was required to foretell what the outcome of the same would be with us. A rationale on anatomic and physiologic grounds was then presented, showing a direct antagonism between the interests in the technic of such operations and the interests of the uterus in gestation and parturition; that either only futile or temporary results on the one hand or disasters on the other would result in a large proportion of cases. I was free to do this because it had been my good fortune to supplant the superficial, blind and incomplete simple Alexander operation in my practice, with a thoroughgoing intraperitoneal bi-inguinal procedure, which I had then performed over 100 times and of which I reported the remote results after an average period of two years in forty-seven cases, two months later, August, 1899, at the Amsterdam meeting² of the International Congress of Obstetricians and Gynecologists.

No other operation for retroversion of the uterus has been so carefully studied and so severely tested as to its ulterior results by so large a number of operators as has the Alexander operation. Most operators, especially the

devotees to the fixation and artificial ligament procedures, have reported the status (often the subjective condition only) of their patients only up to the time when they left the hospital, or when they received an oral or written statement from them, or to the time of a childbirth, without regard to the position and condition of their pelvic organs after childbirth, or to the possible existence of some other concurrent affection. This is grossly insufficient and unworthy of notice by a scientific body or by a decent medical journal. Likewise it is not enough to depend on the patients' statements of their subjective conditions, but their objective anatomic status must also be obtained by a careful examination; and both the subjective and objective findings should be taken after an average interval of two years has elapsed.

Since pregnancy and childbirth are the chief functions of these organs and involve the most signal metamorphoses in them, these reproductive physiologic achievements must also be accepted as the normal standard by which to gage the merits and demerits of operations on these organs. My "double test of pregnancy" implies that the given procedure does not hinder pregnancy or induce complications for labor. This simple test of pregnancy will be readily passed by the multitude of procedures on the round ligaments, by the artificial ligament operations in most cases and the serous fixations in many cases, but the severer crucial or double requirement, that displacement of the uterus will not recur after one or more subsequent labors, has been proved to be met successfully only by some of the round-ligament operations, and by none of the artificial ligament or fixation procedures in an acceptable percentage of cases. According to all real evidence or proof, so far as recorded, only round-ligament operations, and of these only those that do not place dependence on the tapering and useless distal ends of these ligaments to do any holding, are able to pass these severe but normal requirements successfully in an acceptable percentage of cases. The plain reason for this is that the round ligaments are a part of the uterus, and as such undergo with it both evolution (not stretching), during gestation and involution after labor, which is not true of any fixation or artificial ligament that human ingenuity or conceit may devise. That fact excludes all such operations aside from (1) bi-inguinal (Alexander) operation, and (2) transplantation of round ligaments into the abdominal wall by some one of the numerous minor variations in technic, all of which are fundamentally correct in principle.

What is the record of the bi-inguinal operation? In my last summary of this subject before this Section, five years ago, I reported twenty-two cases of my own, each of which had passed the double test of pregnancy successfully, after previous intraperitoneal bi-inguinal shortening of round ligaments, with the Bassini hernia technic in closure of the wounds, and with these I reported a collection of 147 similar cases by twenty-five other operators, making in all 169 double test cases. Among these were only three failures, and these were for cause: namely, two cases of prolapse in which the undue elongation of sacrouterine ligaments contraindicated round-ligament shortening alone, and in the third case it was due to violent intrauterine manipulation and infection by a midwife. To this collection of 169 cases there now to be added 115 more such double-test cases by the following operators: 18 by Epstein,³ 7 by Fuchs,⁴

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Goldspohn, A.: The Uterus; Why Vaginofixation, Ventrofixation and Ventrosuspension Thereof Should Be Avoided in Cases That Retain Any Capacity for Conception. *THE JOURNAL*, A. M. A., July 22, 1899, p. 181.

2. Goldspohn, A.: *Am. Jour. Obst.*, 1900, xli, No 5.

3. Epstein: *New York Med. Jour.*, 1905, lxxx1.

4. Fuchs: *Zentralbl. f. Gynäk.*, 1905, pp. 613, 648.

26 by Tillmann,⁵ 14 by J. W. Taylor,⁶ 28 cases by Hannes (Kustner),⁷ and 22 cases by Leese.⁸ Some of these operators mention a recurrence rate of from 3 per cent. to 4.5 per cent., which probably applies also to the patients that bore children. If so, we have 284 cases examined after one or more childbirths, with an average recurrence of displacement of less than 4 per cent. With such a record the results of all other operations for this purpose—aside from the transplantation of round ligaments—are not to be compared.

The recurrences have become much less frequent with those operators who have discarded the old extraperitoneal method and have drawn the ligaments out more thoroughly after dissecting back the peritoneal investment in the properly opened canal and internal ring, and have noted the proper degree of advancement of the fundus through the same. Very many operators have followed my lead to that extent in this matter, but only a small number of them have followed me to the full extent of severing adhesions by introducing a finger or two through the dilated internal ring of each side, drawing the tube and ovary into or out of this opening and resecting or removing them, as may be indicated. The ovary and outer half of the tube are suspended from the broad ligament at a point just back of the internal inguinal ring and are often drawn out of that opening more easily than into a median ventral incision. In breaking up adhesions no decent operator makes anywhere in the abdomen the enormous incision that would be required, together with more or less evisceration, in order to see these adhesions down in the true pelvis. We all sever such adhesions by the sense of touch alone no matter by what route they are reached. This route should not be chosen for patients with immovably fixed uteri and adnexa with indurations, etc., because this would be dangerous and a waste of labor in such cases, for the patients do not become pregnant whatever the procedure used. Their tubes are too badly injured, and therefore they are well enough served by some simple fixation or duplication of round ligaments, by way of a median section.

The reasons commonly advanced against my intrapelvic work in my bi-inguinal celiotomy, via the dilated internal rings, are not at all the reasons why I have practically discarded this operation in recent years. I did it in over 200 cases, together with curettage and operations on the cervix, perineum or rectum in most of them, with a mortality of less than 1 per cent. I had twenty-two cases crucially tested by pregnancy and labor, without abnormality or a sign of a recurrence or of a hernia in any of them. My total recurrences of displacement were less than 1.5 per cent. without ever resorting to a pessary after operation. The reasons why I have practically discarded this operation are as follows: (1) violent appendicitis has occurred within a year or two in a number of cases in which I had the opportunity to remove the appendix, and did not do it because of sentimental reasons and because it seemed to be, and always to have been, normal; (2) according to several writers, and according to sensible *a priori* reasoning, cecostomy is preferable to appendicostomy when indicated for treatment of the colon, and (3) we find this wholly useless vestige, club-shaped or otherwise, disposed to make trouble in so large a proportion of

cases, which in the past have been free of plain attacks of appendicitis. Therefore I am convinced as to my duty to remove this menace nearly always, especially when I open the abdomen for a relatively minor indication such as ordinary uterine displacements are. This cannot be done safely through the inguinal canal as a rule.

Furthermore, it is often desirable to palpate the gall-bladder, the pylorus or a kidney, in conjunction with an operation for pelvic disorders, or to resect a dilated linea alba. All these can be done if a median ventral incision is chosen and enlarged when necessary. By the same incision the uterine displacement can also be cured in a creditable manner by transplantation of round ligaments into the abdominal wall; therefore this only real competitor of the Alexander operation properly becomes its successor. But in recent years a compromising combination has been made between a median laparotomy and shortening of round ligaments in the inguinal canals after Alexander's method. Both of these acts are done by way of a straight or curved transverse suprapubic incision, which need not always be made through the aponeurosis of the recti muscles. This affords sufficient opportunity for the required median section and also access to the inguinal canals for the Alexander operation, under intra-abdominal control of the proper degree of shortening of each ligament. This in substance has been done by Peterson,⁹ Rumpf and Palm,¹⁰ Werth,¹¹ Kustner,¹² Littauer,¹³ and Broese,¹⁴ and promises to become a standard procedure. The Alexander operation, thoroughly performed, however, with its principles and monumental results, before mentioned, has led the way to such still more salient procedures. It can, therefore, well rest on its laurels if it is never performed again.

But to those operators, if any there be, who are still performing the original so-called extraperitoneal (?) Alexander operation, especially if without opening the inguinal canal, I would like to say with something louder than the human voice and words that they are not doing their duty by their patients; that their implied promises of best efforts and normal services held out to these patients are tinctured with fraud. This type of operation should certainly be banished, because, first, as I have repeatedly stated, the adhesions of the ovary and the outer end of the tube are much more frequent than of the uterus itself, because in their vicinity infection by way of the tubes comes first. Adhesions of these small structures are very difficult to discover and are often not suspected when the uterus is movable. They are formed on these adnexa in their descended location, to which they sank with the retroverted body of the uterus. When the latter is brought forward into anteversion the adnexa cannot follow, being fixed at a lower plane. The enforced tension on these structures entails discomfort to the patient, and the direction of this traction, being opposed to that of the extraperitoneally (often imperfectly), shortened round ligaments, endangers their integrity and tends to induce a return of displacement of the uterus. Such adhesions of adnexa, beside a free uterus, are severed with the greatest ease by a finger within the internal ring, which, fortunately, is just in front of the parts.

5. Tillmann: Beitr. z. klin. Chir., 1907, iv, 318.

6. Taylor, J. W.: Jour. Obst. and Gynec. Brit. Emp., 1907, ii, 415.

7. Hannes: Zentralbl. f. Gynäk., 1908, No. 49.

8. Leese: Monatschr. f. Geburtsh. u. Gynäk., 1909, xxix, 448.

9. Peterson, R.: Surg. Gynec. and Obst., 1906, iii, 85.

10. Rumpf and Palm: Ztschr. f. Geburtsh. u. Gynäk., lix, No. 1.

11. Werth: Zentralbl. f. Gynäk., 1909, No. 14.

12. Kuestner: Zentralbl. f. Gynäk., 1909, No. 2.

13. Littauer: Zentralbl. f. Gynäk., 1909, p. 833.

14. Broese: Zentralbl. f. Gynäk., 1909, pp. 668, 1256.

Secondly, the round ligament does not slide or pull out from the broad ligament enough, once in every four or five individual instances (according to careful observation on this point in fully 130 cases), without some scissor-clips on the front blade of the broad ligament, which is always drawn forward into the ring. The shortened ligament then remains, pulling forward from the broad ligament at a point distant from the uterus, and therefore with little or no good effect on the displaced fundus uteri. This condition is very easily discovered by pulling on the broad ligament while the index-finger of the other hand is placed against the uterus through the ring, and it is just as readily relieved.

Thirdly, in the not infrequent cases of retroversion-flexion, with a heavy fundus, the center of gravity of the body of the uterus is often posterior to a line joining the points of origin of the round ligaments, while the posterior cervical supports are elongated. In this condition the round ligaments will have to be dissected out extensively from the broad ligaments, usually along with a generous strip of enveloping peritoneum, and they must be given a new course quite directly forward; otherwise traction on them from the inguinal canals is quite as likely to bring the cervix rather than the fundus forward.

That extraperitoneal (?) shortening of round ligaments is insufficient, is shown by the high percentage of recurrences of displacements, even in cases that have not been tested by pregnancy. Longyear,¹⁵ including two cases in which he could not find both ligaments, had 12.5 per cent. failures. Hannes (Kuestner)¹⁶ had three recurrences of displacement after nine operations performed extraperitoneally, while after sixty-two operations done with opening of the canal and peritoneum and more thorough elaboration of ligaments, the patients were found, two years later, to be without any recurrence of displacement.

CONCLUSIONS

1. The improved Alexander operation thoroughly performed has more good and approximately perfect results recorded to its credit than, so far, are recorded to the credit of all other operations combined that have been performed chiefly for retroversion of the uterus.

2. No Alexander operation should ever be performed without digital exploration within the pelvis through both internal rings, to prove that no adhesions remain, and to prompt and facilitate an adequate dissection of the round ligaments from the broad ligaments to give the former a sufficiently forward course to hold the fundus uteri forward effectively.

3. Prolapse of the uterus, or retroversion due chiefly to elongation of the sacro-uterine ligaments, should be treated by shortening these ligaments, when possible, or by attachment of the psoas parvus tendon or a portion of the psoas magnus muscle to the back of the cervix, in the manner suggested by Harris,¹⁷ and never by shortening of round ligaments as the chief act.

4. Inasmuch as transplantation of round ligaments into the abdominal wall by some one of the numerous minor variations in technic, secures a creditable correction of retroversion in most cases by way of a median incision, which is also available for appendectomy, and various desirable explorations within the abdomen, this manner of operating has largely and properly super-

seded the general type of operating by way of the inguinal canals.

5. A plan of operation that is still more correct anatomically and surgically, has, in recent years, been carried out by at least seven operators with satisfaction. It consists in doing first, a sufficient median laparotomy and the required intraperitoneal work, and secondly, in shortening of round ligaments within the opened inguinal canals themselves, both by way of a transverse suprapubic incision, either straight or curved upward and extending through the aponeurosis of the recti muscles, as may be required.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. COFFEY,* BALDY, GILLIAM, SIMPSON, DUDLEY AND GOLDSPOHN, FORMING A SYMPOSIUM ON OPERATIONS FOR RETROFLEXION OF THE UTERUS

DR. E. E. MONTGOMERY, Philadelphia: It is with considerable hesitation that I speak when the inventors have presented their various operative procedures. I class myself as an adjuster rather than an inventor. The number of operations that have been introduced for correcting and maintaining the uterus in its proper position is evidence that none of these has been exactly what was necessary in all cases, and I would not come to-day to advocate any particular operation as an absolutely sure cure in every case that might present itself. I have lived long enough in the profession to have gone through the various procedures that have been devised from time to time for this purpose. I have, of course, practiced the operation of ventrosuspension and ventrofixation. I had the misfortune in performing this latter operation in one case to have a knuckle of intestine slip around the band of adhesion and the patient die as the result of the constriction of the intestine. This accident led me in doing the Gilliam operation to obliterate the space on either side in which the intestines might slip through. Later I utilized the procedure of Dr. Simpson with that of Dr. Gilliam by making an opening in the anterior leaflet of the broad ligament, threading the ends of the ligature which have been passed around the round ligament into the eye of a Deschamp's needle and have carried this through the broad ligament until it has penetrated the aponeurosis as suggested by Gilliam. I much prefer the Pfannenstiell incision, as it permits of greater exposure of the parts. This procedure also enables us to get directly down on the site of the round ligament. We are directly over it and it is under our control during the whole procedure.

The operation suggested by Dr. Baldy certainly does lift up the uterus and probably sustains it better than any operation done on the round ligaments. The objections are the very extensive traumatism on the posterior surface of the uterus and the fact that it pulls out the ligaments from the peritoneum, leaving an extensive raw surface on the posterior surface of the ligament to which adhesions of the intestine and rectum are likely to occur. I have had the opportunity to operate on one of the patients who had passed through the hands of Dr. Baldy and found that this condition existed, drawing back the uterus after an operation had been done. This modification makes a fibrous band of the musculature which is effectual in maintaining the uterus in a forward position. The uterosacral ligaments are much like the Arctic circle—an imaginary line. They have been completely obliterated by the conditions which have led to the sinking down of the uterus and are consequently of little effect. The procedure suggested by Coffey of utilizing the peritoneum, bringing about extensive adhesions of the peritoneum, serves a most efficient purpose. Here the uterus is held up by adhesions and consequently the cervix drawn backward and upward and in that way the displacement is overcome.

DR. J. B. MURPHY, Chicago: I address you in this discussion as fellow gynecologists, because it is all surgical, and all of the gynecologists are going to become general surgeons. In

15. Longyear: *Am. Jour. Obst.*, November, 1908.

16. Hannes: *Zentralbl. f. Gynäk.*, 1908, No. 49.

17. Harris, M.: A New Operation for Prolapse of the Uterus, *THE JOURNAL A. M. A.*, May 14, 1910, p. 1605

* Some of these articles appeared in *THE JOURNAL* last week.

the question of retrodisplacement we have important problems. The position in which the uterus arrives at the physician's office is in one of the two, three or four degrees of displacement into which we usually subdivide them. Those who have lived through the pessary period and know the great relief that the patient receives when the uterus is held forward with a pessary, put in intelligently, know the relief that can be obtained from replacement, when you do not do additional damage to the patient by its improper insertion. I say that after a considerable clinical experience. In the attempt to relieve the displacement by many of the operations, and in some of the patients by all of the operations, the treatment leaves the patient worse than when it was begun. Just why this is true we do not know, but we know it occurs. Therefore, in deciding on the operation we must individualize as to anatomic conditions present, taking note of the degree of displacement, the construction of the patient's pelvis, and of the supports which we are able to appropriate for the retention of the uterus.

In the relief of displacements by anterior fixation to the abdominal wall, which I was supposed to discuss, I must say this, that I made the ventral fixation for a number of years in the majority of operations. In a considerable percentage of cases the patients had three causes of complaint against me: (1) When the patient sneezed she had to seize her abdomen because of the pain caused by the traction; (2) when she jumped from a street car or carriage there was a sensation of tension or of pain; (3) finally, elongation took place and the uterus returned to the previous position. In the evolution of the displacement, whether it is immediate, following a severe injury or strain, or whether it is gradual, where do you find the uterus in the third degree? Down in Douglas' pouch with the intra-abdominal pressure on the anterior wall. Where are your round ligaments running? If you examine the patients, and particularly the thin ones, you will find in the superlative degree of displacement, if you are going to appropriate the round ligament to the support of the uterus without changing its attachment, that you have another element to contend with—the round ligament, normally situated high up and near the corner of the uterus, has worked down one and one-half inches to the line. So you have lost your leverage support from its position. The round ligament, I consider, is the balancing cord of the uterus. It carries none of its weight, simply balances it, and the weight is carried from below. The most natural thing in its restoration would be to put the weight where it was before; but the weight remains, except that it is resting on the floor of Douglas' pouch.

I use the round ligament for restoration in cases in which there is a comparative degree of displacement. Recurrence is more frequent than agreeable, but I believe there is less discomfort to the patient than with the fixation. In the superlative degree of displacement I have followed another line of treatment. In a case of procidentia if you will make an incision in the Pfannenstiel line down to the rectus muscle, then split the rectus muscle in a line parallel to its long axis; draw out the uterus and cut off the round and broad ligaments down to the cervico-corporeal junction, then split the uterus parallel to the long axis of the body down to the cervix, turn out the lateral flaps, remove the mucosa of the tube and uterus down to the cervix, then sew the uterus to the external surface of the sheath of the recti after uniting the peritoneum and the aponeurosis of the rectus up around the cervico-corporeal margin of the uterus, it will then hold the bladder and the rectum up as long as the patient lives.

DR. H. J. BOLDT, New York: We have traveled through a veritable jungle of surgical interventions for the cure of displacements of the uterus, particularly posterior displacement. We might believe—judging entirely from what has been said by all except the last speaker, Dr. Murphy, who paid attention to other than surgical intervention—that perhaps there is no other method than surgical intervention. Moreover, judging from the number of operations which have been reported, off and on, for displacement of the uterus, it would seem that every woman who has a retrodisplacement of the uterus must have been subjected to a surgical intervention for

the relief of that displacement. We must bear in mind that so far as the symptoms are concerned, caused by a posterior displacement, they very seldom are caused, except from a mechanical interference with the functions of the pelvic organs. Symptoms are usually caused by complications. When symptoms occur from a mechanical cause we need not at once resort to the opening of the abdomen. In that class of cases I believe the great number of patients can be treated effectually by the use of a pessary, applied with common sense. There are a few isolated cases in which a pessary will not relieve such conditions. In cases in which the fundus of the uterus tips over the upper part of the pessary, and in that class of cases alone, we should consider the desirability of surgical intervention. I believe, notwithstanding what has been said, that the ideal operation is the Adams-Alexander operation, through the inguinal canal, provided that there is no downward displacement. The moment we have descended the operation is absolutely worthless. So far as intraperitoneal operations are concerned, they are indicated only in the presence of complications with the adnexa, when we have an adherent retroflexion.

All the argument, all the speaking done here, will have no effect on any of the men who have devised operations. The matter is one of personal equation. I believe there are merits in all. There are so many roads that lead to Rome we may have the benefit of any. My personal experience has led me to believe that the operation devised by Dr. Gilliam is the most satisfactory.

DR. J. H. CARSTENS, Detroit: It seems to me that Dr. Boldt has struck the keynote. When I was a young man I had a patient with retroversion. I had been graduated at a period when there was a great cry against pessaries. So, of course, I did not use a pessary—thought they were injurious—and I treated the woman on general principles. She evidently was a great sufferer. She ceased coming to my office and the next thing I heard was that she had gone to a woman physician who had examined her and said she had a retroflexed uterus. She put in a pessary and cured her. I have found since then, as Dr. Boldt has said, that there are cases in which pessaries are valuable; for instance, in those cases shortly after confinement in which the uterus is large and heavy. Other cases are those of young girls and sometimes of married women. It occurs to me that if there are adhesions and you have to open the cul-de-sac, you might as well open it anteriorly and find out what is necessary to do rather than to perform the Alexander operation. The patients who require only pessary treatment and who have simple retroversions that produce no symptoms I do not see. The kind of cases we see are complicated cases in which we must do exploratory abdominal section. In one case I may take out a tube and ovary. In many of these cases I sew the stump in the lower abdominal incision, and even in patients subsequently pregnant no trouble has been experienced. In some of these cases I do an operation such as Dr. Bandler does. Sometimes one is good; sometimes another.

DR. C. W. BARRETT, Chicago: Fellow surgeons—I say that because a great gynecologist is something of a special surgeon, and not because every surgeon is a great gynecologist—we have had a great feast showing what the round ligaments and the false ligaments can do in the correction of retrodisplacement. If I remember aright there was another great feast at which there appeared certain handwriting on the wall, which translated, I believe, meant, "Weighed in the balance and found wanting." That applies to a number of the operations spoken of here for retrodisplacement. The soundest principles have been laid down by Dr. Goldspohn. His is the operation of safety. Ventrosuspension and ventrofixation were formerly the excuses you could offer the patient for making a vivisection, for studying anatomy and living pathology, and they have had a wonderful place, but they are dead operations. The satisfaction that each person has felt in an operative procedure only shows how easily we are satisfied, and this is the chief thing in the way of progress. We must have the very best thing that can be offered, for the best is none too good. Whatever operation we choose must follow certain definite principles. It must be not complicated. It must be

safe, immediately and remotely safe. It must allow inspection and correction of conditions in the abdomen. Next, it must use normal ligaments instead of false ligaments. Goldspohn has laid this down definitely. It must have the best part of a ligament instead of the poorest part, because there is a better and a poorer part of the round ligament. Next, it must use the natural ligaments and place them normally. It must not sew up the round ligaments and run them anywhere. I do not condemn Dr. Gilliam for proposing that, but it is an evil of ventrosuspension that it runs ligaments from the peritoneal space. An operation to stand the test must meet these requirements. Such an operation will stand the double test of pregnancy. I thought at one time that I had devised such an operation. I had full possession of that thought for two years. Then I had to share the matter with Charles Mayo. In another year I think I shall have no connection with it at all.

DR. H. O. MARCY, Boston: Many years ago I thought I knew something of this operation. I had studied hernia with a great deal of care; therefore I thought I knew all about the Alexander operation. I welcomed it. I did it. I thought I knew my anatomy. I failed. I discredited it. To-day I take the position largely of Dr. Montgomery. We must be guided by the different factors. First of all, if we can restore a patient by a well adjusted pessary, it is *prima facie* evidence that operations from below may cure. When they fail it must be, I think, an operation from above. That operation, several men have said, must be laparotomy, and that gives you the inspection as Dr. Carstens has said and the knowledge of the various factors with which one must deal. Then, after doing all sorts of operations on the ligaments, in a general way, I have operated for quite a number of years—transplanting the round ligaments a little higher, making a new inguinal canal, reproduced to the normal pattern—for it is a congenital defect. The peritoneum must be so infolded that raw surfaces are not left within the abdominal cavity.

DR. W. H. WATHEN, Louisville: If once a surgeon begins to treat these patients all on the same principle he will never be successful. Each patient must be treated as an individual case and the existing pathologic conditions must be met. You hear a great deal said about shortening the round ligaments, the utero-sacral ligaments, and the various structures, to hold the uterus in position. It has never yet been demonstrated what does normally hold the uterus in place. We do know that there are structures above the perineal floor and there are structures below the uterus that participate in this, and whenever you find a defect in the structures you must treat such defect as encountered. I have performed nearly all the operations discussed to-day because in my line of work I have had a relatively large experience, and I have found less trouble and better results by anterior suspension. I have had no trouble following pregnancy. As Dr. Dudley has remarked, if in a case of retrodisplacement you perform any or all of the operations for the cure, yet do not repair the pelvic floor and suspend or elevate the bladder, you will never secure permanent success. If you make an anterior suspension in women not past the childbearing period by one suture only, and then build up the pelvic floor and bladder wall you will have success. If the woman is past the child-bearing period, then make a firm anterior fixation instead of a suspension, and if the uterus is too large amputate a large portion of the cervix, unite the vagina to the stump of the cervix and at the same time repair the pelvic floor, and, if needed, separate the anterior wall of the vagina from the bladder, elevate it by an approved method and then do a uterine suspension or fixation as indicated by the age condition of the patient.

I often perform the Gilliam operation, or some of its modifications, but I have never had any complication following anterior suspension of the uterus and I have performed the operation several hundred times.

DR. G. BETTON MASSEY, Philadelphia: I wish to emphasize the true cause of the displacement, which seems to have been overlooked by those who have spoken. The pathologic condition is not the displacement; it is the morbid condition of the uterus, the chronic inflammation of the uterus. Proof of that

is found in the very large number of retroflexions that present no symptoms. This is shown also by the fact that many such patients in whom the diseased condition of the uterus has been cured, without complete rectification of the flexion, cease to have symptoms. With an experience of twenty odd years in the treatment of these cases of retroflexion I have never yet come across a single patient in whom the normal movable condition of the uterus needed to be destroyed by a fixation. I protest against all the operations described, and consider each and every one based on a misconception of the pathologic condition. It is now universally conceded that inflammation is due to germs and not to mechanical conditions.

DR. GEORGE GELLHORN, St. Louis: The multiplicity of these operations forces me to the conclusion that none of them is ideal and applicable in all cases. But how is the gynecologist who has not had the originality to invent a method of his own, or who has not enough material to test all these methods, to choose the one he shall use in the individual case? Granted that all the claims made for the various methods are justified, namely, that they do not interfere with the functions of the genital organs, and that they are not any more dangerous than the disease itself, I think there are certain principles, the consideration of which will help us to limit the methods from which we may choose. In a case of retroflexion during the reproductive age I would avoid, first, any operation which fixes the uterus in an abnormal position. Examples of such are ventrofixation and ventrosuspension. Second, I would avoid any operation which deprives me of the sense of sight. There is no living man who is able to determine by bimanual examination in every case before the operation the absence of delicate adhesions or of minor pathologic complications about the tubes and ovaries, and if he does an operation of the Alexander or Goldspohn types, he deprives himself of the opportunity of freeing adhesions. Third, in an operation, as Dr. Barrett has pointed out, in which the round ligaments are used, I would try to use the better part of these ligaments. In some of these operations the weak part is still left to do the work of holding up the uterus. Fourth, I would avoid any operation which utilizes ligaments which have a very unimportant part in holding the uterus in place, and which are much too weak to do it. These are the objections to the Bovée type of operation, in which the utero-sacral ligaments are utilized. They are much too small to hold the uterus forward ordinarily, and if we find in a patient thickened and shortened utero-sacral ligaments we have to treat that condition because it produces distressing symptoms. In methods of this kind we produce artificially a condition which we are often called on to treat. The observation of these four principles will help us to limit our choice and I believe that of the numerous methods, only part of which have been mentioned here, there will be hardly more than two or three that will answer.

DR. HENRY T. BYFORD, Chicago: The strong end of the round ligament is in the inguinal canal. Those who have performed the Alexander operation, know that they have to cut some fascial attachments in the inguinal canal which give firmer support than the intraperitoneal muscular part, which is not a direct support; it is a balancer. If we want to suspend the uterus we had better eliminate the intraperitoneal, muscular portion, and depend on the other. This is what is done in the Baldy operation. In the majority of cases we do not want actually to suspend the uterus, we merely want a balancing action. Nature has experimented on woman for many years and knows how to hold up the uterus. Those operations which imitate Nature by making use of a new canal, or the old one, must be right in principle.

DR. J. M. BALDY, Philadelphia: I feel a bit concerned that a general surgeon should speak of including us as surgeons. For a long time the gynecologists have been attempting to educate the general surgeons, but having so ignominiously failed I feel that probably we had better go to them and learn general surgery, as suggested by Dr. Murphy. The pessary was not discussed in my paper because I was not asked to discuss that subject. I see pessaries used in only two kinds of cases, and I can come to but one conclusion—that nobody in the East knows how to use them—for it has been said on the floor that there are good ways of employing them.

The two classes of patients who come to me with pessaries are those with perfectly normal anteriorly displaced uteri which need nothing, the patients having been made sick because some fool doctor has put a pessary in, and secondly, the patients with prolapse in which a pessary is of no use. Consequently I feel that nobody in the East knows how to use them, barring New York, and I intend to make a special trip to New York to see whether they are correctly used there. The ability seems to be confined to the West or to the Middle West, to Chicago principally. I showed by the model this morning how useless is the weak end of the round ligament in this operation. But I shall convince Dr. Gellhorn of his wrong position by showing him by the model that that end of the ligament is not used at all in the operation.

DR. D. TOD GILLIAM, Columbus, O.: The only criticism made of the operation which I have devised is that it leaves bands in the peritoneal cavity which are liable to produce obstruction of the bowels. "The proof of the pudding is the eating thereof." For ten long years or more this operation has been performed thousands of times by hundreds of different operators and there has never been a case of obstruction of the bowels.

DR. F. F. SIMPSON, Pittsburg: I think we all recognize the fact that there are many displacements of the uterus that require no treatment and that many others are corrected by the pessary. There are many others in which some coincident disease, cardiac, renal, pulmonary, thyroid or other disease, contraindicates any type of operation for any purpose. In such cases benefit is obtained from the use of the pessary. The work of Drs. Reynolds, Goldthwaite and others has shown the importance of examination of the sacroiliac joint before the treatment of displacement by any method is to be considered. In reference to the employment of other operations than those devised by the individual operator, I have used and am constantly using parts of operations of different types and expect to continue to do so.

DR. A. GOLDSPOHN, Chicago: Dr. Coffey makes several assumptions that are fundamentally wrong: (1) He assumes that all abdominal as well as pelvic organs are held in their places chiefly by their peritoneal mesenteric supports. The truth is that the abdominal walls hold the abdominal organs chiefly, as we soon find out when these walls are defective. On the other hand, the uterine supports have either connective tissue or muscle in them in addition to the peritoneum. The free expansion of pelvic tumors shows that peritoneum holds not much better than skin. (2) That two layers of stomach or intestinal wall may unite and form one layer permanently, does not prove that the same will be true of the broad and round ligaments about the uterus, which are subject to the phenomenal and entirely peculiar changes incident to gestation and parturition, which does not apply to intestines, etc. In secondary laparotomies I have repeatedly seen all such plications and foldings of broad and round ligaments completely wiped out without leaving a trace of the former work, after an intervening childbirth. In retroversion cases, the displacement had nearly always recurred. That the proposed plications of broad ligaments proposed by Dr. Coffey do give way as above stated, is shown by his declaration that the involved round ligaments disentangle themselves later, and assume their usual course. This they could not do without the giving way of the broad ligament plications. The doctor practically constructs two connected links of a chain, and then claims that they become separated without either one of them being broken. The operations devised by Drs. Webster, Baldy, Ries and a number of others for retroversion, are inferior as to stability, because they depend on the tapering, feeble outer ends of the round ligaments to do holding, which they cannot do because of their feebleness and because of their course in areolar tissue extraperitoneally before entering the inguinal canals. I have practiced, for some years past, median section with removal of the appendix and other explorations, and have corrected retroversions in a small number of cases by shortening the sacro-uterine ligaments; in others by transplantation of the round ligaments into the abdominal walls, by several of the different methods, chiefly by a modified Gilliam operation, in which the uterus is drawn up more, so that it comes in contact

with the abdominal wall, and the utero-vesical space becomes quite effectively shut off from the entrance of the small intestine. The theoretical arguments about intestinal strangulation, etc., do not apply to this form of the operation at least, of which I have over 500 that are fully two years old, and without any such disaster, or any difficulty in childbirth.

IMMUNOLOGY

A MEDICAL SCIENCE DEVELOPED THROUGH ANIMAL EXPERIMENTATION

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Perhaps no other of the medical sciences can be so suitably discussed in relation to animal experimentation as immunology, because no other science has been so dependent on this method of attack for its development.

The science of immunity, or immunology, would explain the mechanism by which the animal body is enabled to resist disease. In addition to its fascination as a biologic science, immunology offers the added interest of the greatest human utility, the prevention and cure of disease; and precisely in this vital significance lies at once the importance of the science and a potential danger to its sound development. This danger arises in an overanxiousness to apply supposedly specific agents before the principles that underlie their apparent effect have been determined. The history of immunology has, indeed, brought into particular relief certain interesting relations of theory to practice, worthy of more philosophical discussion, but we may content ourselves with an attempt to point out the usual sequence of observed facts, logical deduction, inductive experiment, and, in concluded chapters, application of principle in the diagnosis and prevention of disease.

The relatively recent development of any exact knowledge of the mechanism of immunity is at first glance surprising, when we consider that certain examples of natural and of acquired resistance to disease have been recognized since ancient times. Some attempts to turn these recognized examples to practical use were from the beginning successful, but none of them was inaugurated with that understanding of the principle involved which brings the greatest utilitarian reward. It is obviously no lack of human interest in the subject which has delayed the evolution of immunology, but largely the lack of a suitable method of attack on so obscure a subject. The method was eventually furnished by the recrudescence of the experimental idea as applied to medicine and particularly as exemplified in the progress that has been made in determining the causation of disease. Immunology, indeed, parallels bacteriology both in chronology and in method. Before considering the development of the experimental science of immunity we may outline:

I. THE DATA OF IMMUNITY ACQUIRED FROM CASUISTICS

The first and most wide-spread type of resistance to disease is the inborn or natural immunity which is evident on the initial exposure to a given malady. With

* This paper is one of the series prepared for and reprinted by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Seventeen of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, plague, rabies, surgery, internal secretions, circulation of the blood, tropical diseases, etc.

an increasing intensity, as expressed in more and more marked resistance to infection, natural immunity serves to differentiate individuals of a given race, races of a given species, and species of animals from one another.

The individual type of natural immunity may be noted whenever a group is subjected to equal chances of infection or contagion; certain individuals succumb while others resist. A familiar example to illustrate this relative individual resistance is given in any group of pathologists who are performing numerous post-mortem examinations; some members of this group are veritable martyrs to post-mortem infections, whereas others are practically immune. This type of resistance is frequently temporary and in all respects relative; it is dependent on certain subtle differences in general health and nutrition and may be evidenced by certain changes in the bactericidal properties of the blood, to which reference will later be made.

Natural racial immunity, to which attention was called as early as the sixteenth century, is in all probability dependent on differences in food and general hygiene. It is difficult to be certain in many so-called examples of racial immunity that have been given whether the increased resistance is in reality inborn or simply acquired through recovery from disease. The marked resistance of certain races of mice to a transmissible tumor (Haaland),¹ which resistance may actually be lowered by a change in environment, would seem a certain example of a natural racial immunity.

Species immunity is the most evident and distinctive type of natural immunity. The difference in resistance between any two species of animals to a given infection varies in general with the distance apart that these species lie in the animal scale. Although familiar examples of species immunity occur throughout the animal kingdom, those of the greatest interest occur in relation to a whole series of typical human diseases, syphilis, measles, typhoid fever, gonorrhea and the like, which never occur spontaneously in the lower animals, and cannot be transmitted to them or at best in modified form only. Recent studies with the higher anthropoid apes, however, have shown that at least certain of these typically human diseases (*e. g.*, syphilis and typhoid fever) may be produced in these animals because they are most nearly related to the human species. In a general way, species resistance may be attributed to differences in metabolism, body temperature, intestinal enzymes and the like.

Of far greater significance and practical bearing are those instances of immunity acquired through recovery from a given disease. It is a matter of human experience that man has usually but a single attack of many of the diseases to which he is peculiarly susceptible, such as smallpox, typhoid fever, measles and yellow fever. In the face of epidemics where only those that have been previously affected are spared it is evident that such recovered individuals are protected, not as the result of chance, but owing to some induced mechanism of protection against the disease. Similar conditions of acquired immunity have frequently been noted in domestic animals.

Logical deduction from these observed instances of acquired immunity long since led to attempts to reproduce this advantageous condition artificially. Empirical efforts have been made even among primitive peoples to induce in individuals some endurable form of

a fatal disease so that they might subsequently be better protected from chance infection. The African Vatuas² have been reported as practicing an efficient form of self-immunization against snake venom; the Moors early protected their cattle from pleuropneumonia by running under their skin a knife that had been plunged into the lung of an animal that had died of the disease. It is well known that the Chinese and other peoples of the East protected themselves from smallpox by variolization, which was effected by inserting the scabs of human smallpox lesions in the nose of healthy individuals. A similar method was introduced into England by Lady Mary Wortley Montague in 1721 and was employed until the observations of Jenner on the relation of cowpox to smallpox in 1798 led to the present method of prevention of the disease by vaccination. The chance that a disease of cattle (*vaccinia*) is intimately related to a fatal human disease and that an attack of the one in the form of a localized disease would protect against the more generalized malady, alone rendered Jenner's observation fruitful. No generalized conception of the principle of "vaccination with a virus of diminished virulence," as later established by Pasteur, however, existed. This is evidenced by disastrous attempts that were later made to prevent measles, diphtheria and scarlatina by similar methods.

II. THE DEVELOPMENT OF IMMUNOLOGY THROUGH ANIMAL EXPERIMENTATION

Centuries of careful observation of facts obtruded by Nature in the course of devastating epidemics had taught at least two important principles in regard to resistance to disease: an acquired immunity follows recovery from an attack in perhaps the majority of acute diseases; and in at least one instance (smallpox) this acquired immunity may be artificially induced through a mild form of the disease. In the past thirty years the assets of utility from our knowledge of immunity have been multiplied to an extent that it would be difficult to estimate, to say nothing of the additional data of present theoretical interest which may ultimately be available in practice. And this advance has been rendered possible by animal experimentation.

It is the purpose of an experimental science to replace accident by design. A disease produced experimentally in animals offers innumerable advantages to one interested in its natural history; it offers the only method of obtaining the significant stages of the disease in complete series for more minute examination. Only the interruption of an experimentally produced disease at successive periods in its course can afford exact information as to the method by which infection spreads and immunity is produced.

The discovery of the fundamental principles of bacteriology by Pasteur and Koch, the isolation and cultivation of bacteria in pure culture, and the proved etiology relation of a definite micro-organism to a given disease, gave new impetus to the principle of vaccination exploited by Jenner. The work of Pasteur and his pupils with the bacillus of chicken cholera on animals laid the foundation for the discovery of the great principle of vaccination by means of bacterial cultures of diminished virulence. This diminution of virulence was obtained, in the case of chicken cholera, by long growth on artificial culture media, and later, in the case of anthrax by subjecting the cultures to growth at high

1. Haaland: Beobachtungen über natürliche Geschwülstresistenz bei Mäusen, Berl. klin. Wehnschr., 1907, xliv, 713.

2. Metchnikoff: L'Immunité dans les maladies infectieuses, Masson et Cie, Paris.

temperatures. Similar methods of vaccination have been employed in the case of swine erysipelas and blackleg. In all instances the method has been arrived at by careful experimentation on animals and the products now used broadcast in actual prevention are first tested for virulence on laboratory animals. It is not my purpose to enter into a discussion of the practical results of protective inoculation but simply to indicate how the method of animal experimentation in bacteriology enriched the data of immunity.

Immunology may be regarded as having been differentiated into a specialized science from the moment that effective attempts to explain the physiologic mechanism that protects immunized animals were made. Theories of immunity were offered by Pasteur, Koch and others, but they were based largely on speculation drawn from the bare results of infection rather than from experiments designed to expose the process of immunity itself. In 1876 Koch³ attributed conditions of immunity to some change in the condition of the blood. Pasteur's exhaustion theory (1880)⁴ supposed that bacteria fail to grow in immunized animals owing to a lack of proper nutritive substances. A similar condition could be produced in artificial culture media as was shown by the failure of fresh chicken cholera bacilli to grow in filtered media that had already served for the growth of this bacterium; the addition of a little fresh bouillon containing fresh nutritive substances permitted growth to proceed. Chauveau⁵ in the same year would have explained immunity as due to the retention in the body of certain substances which inhibit bacterial growth. It is of interest to note that in none of these theories is any allowance made for active participation on the part of the animal itself in the production of resistance. The theories of Nägeli, of Buchner and of Grawitz do at least emphasize a reaction on the part of the animal itself, although they have proved in other ways inadequate.

It remained for Metchnikoff, a biologist, to give the first experimental evidence explanatory of the process of immunity. In 1882 Metchnikoff began recording his observations on the function of the white blood corpuscles in protecting the body from disease, observations which in his hands and in those of his followers have continued fruitful to the present day. Before Metchnikoff, mention has already been made of the presence and of the disintegration of bacteria within leukocytes and Panum⁶ in 1874 had even suggested that such cells might be serving some protective purpose. The general conception of the accumulation of leukocytes which characterizes inflammation, however, was that it was a means of spreading rather than of checking infection. Metchnikoff had been making studies of the origin of digestive functions in cells of mesodermal origin. He suggested that the inclusion of particles and cells within leukocytes was due to an active digestive function in these mesodermal cells and ventured the assertion that their diapedesis during inflammation was a protective mechanism. In one of the crustaceans, *Daphnia*, which frequently suffers from an infection with a form of blastomyces (*Monosporon bicuspidata*), Metchnikoff was able to show that the outcome of the infection depends entirely on the completeness with which the blastomyces is engulfed by the leukocytes of the host. He was soon after able to demonstrate that

frogs and mammals also combat experimental bacterial infection by a similar process of phagocytosis.⁷

NATURAL IMMUNITY FROM BACTERIA

Although this phagocytic theory of immunity at first encountered extreme opposition, its opponents have gradually yielded more and more toward complete acceptance of the interpretation that Metchnikoff has with persistence yet remarkable fairness of judgment insisted on. It is generally admitted that many forms of natural immunity in particular are best explained on a simple phagocytic basis. The more complicated types of acquired immunity are less directly, though unmistakably, related with activity on the part of the white blood-cells. Leaving until later a discussion of the part played in each form of immunity by the cells, we may briefly outline the mechanism of phagocytosis in those instances in which it has been shown to be distinctive.

In the first place, the phagocytic cells may be divided into two general types as regards function. The small, actively motile polymorphonuclear cells of the circulating blood are practically concerned only in making way with the bacteria which produce acute infections; these cells are called "microphages." Under "macrophages" are grouped the large mononuclear leukocytes and certain endothelial and fixed tissue cells; the function of these cells is to take up other animal cells, such as red blood-corpuscles and protozoa, and also certain bacteria, like the tubercle and leprosy bacillus, which produce chronic infections.

It has been shown by careful studies, both within the animal body and in mixtures made in the test-tube, that the phenomenon of phagocytosis may be divided into three phases. In the first phase the leukocytes approach non-virulent bacteria owing to a positive chemotactic influence which the latter exert. If the bacteria are markedly virulent, on the other hand, they exert a negative chemotactic influence. These important facts of positive and negative chemotaxis were ingeniously demonstrated by Bordet,⁸ who placed small capillary glass tubes filled with the bacteria to be tested in the peritoneal cavity of guinea-pigs and later measured the length of the columns of leukocytes that had penetrated the tubes. After reaching the bacteria the phagocytes engulf them, owing in all probability to an active amoeboid process, although it has been suggested that this apparent activity is due in reality to a simple physical change of surface tension. The bacteria, once within the leukocytes, are broken up by a process of digestion. An extract of leukocytes may be made which contains an enzyme (cytase) capable of producing this digestion at body temperature outside the body and the extract has been shown to vary in accordance with whether it is derived from microphages or macrophages. The extract of microphages (microcytase) is particularly active against bacteria and is effective only in an alkaline medium; it has little effect on animal cells. Macrocytase, on the other hand, derived from the mononuclear cells, works best in an acid medium and destroys animal cells.

The active opposition with which Metchnikoff's cellular theory of immunity was at first met was directly productive of important facts which at first seemed to

3. Koch: Cohn's Beiträge zur Biologie der Pflanzen, 1876, ii, 300.

4. Pasteur: Compt. rend. Acad. d. sc., 1880, xc, 247.

5. Chauveau: Compt. rend. Acad. d. sc., 1880, xci, 536.

6. Panum: Virchow's Arch. f. path.-anat., 1874, lx, 347.

7. For detailed consideration of Metchnikoff's phagocytic theory, see Metchnikoff's *L'Immunité dans les maladies infectieuses*, which is also obtainable in English translation. (F. G. Binnie, Cambridge University Press.)

8. Bordet-Gay: *Studies in Immunity*, pp. 1 and 8, Wiley and Son New York, 1909.

attribute the active protective power of the blood to the fluid portion rather than to the leukocytes. In 1885 Fodor⁹ showed that anthrax bacilli, when mixed with fresh rabbit blood in the process of clotting, were destroyed; and two years later Nuttall¹⁰ showed that fresh defibrinated blood would produce the same effect. In 1891 Buchner¹¹ proved this bactericidal effect of fresh blood to be due to the cell-free blood serum, whether it is obtained by defibrination or by clotting. Buchner further described certain ferment-like substances in the serum to which this destructive power over bacteria is due and to which he gave the name of alexins (from ἀλέξεν to ward off or protect). The alexins resist freezing and thawing, but are destroyed by heating to 55 C. for one-half hour. They are unaffected by dilution in physiologic salt solution and may be precipitated with sodium sulphate. Such physical and chemical characteristics have caused alexins to be classed with the enzymes without any very profound knowledge as to their chemical composition.

Further studies, particularly those dealing with the origin of alexin, seem to have shown that the bactericidal property of cell-free serum is in reality no disproof of the correctness of Metchnikoff's conception of the cellular nature of natural immunity. There is good experimental evidence for the belief that the alexin of Buchner is never present in the blood plasma in the body, but is artificially liberated in blood serum by clotting, owing to a disintegration of the leukocytes which normally contain it. In other words, the "alexin" is synonymous with Metchnikoff's leukocytic ferment, the "cytase," which under usual conditions destroys bacteria within the cell (phagocytosis) and under abnormal conditions in shed blood is liberated in the serum. Many experimental observations have been adduced to prove this point. For instance it may be shown that the alexin varies with the degree of leucocytosis; leukocytic extract is essentially the same in its action as alexin; and alexin increases in the serum under conditions which favor disintegrating of leukocytes.

It would seem, then, that the leukocytes are largely responsible, either directly through phagocytosis or indirectly through liberation of cytase or alexin, for the condition of natural immunity from bacteria and animal cells. As we shall presently see, the study of conditions of acquired immunity, although in a measure complicating this explanation, has led to far greater insight of practical significance in combating disease.

IMMUNITY FROM TOXINS

At this point it is advisable both for reasons of chronology and exposition to interrupt temporarily our consideration of the mechanism of animal defense against bacteria as such. Bacteria that have gained entrance to the body are harmful, not only because they increase rapidly in numbers when unrestricted, but because they eliminate harmful products. These harmful products may be either simple chemical substances like acids and alkalies, bacterial proteins, known as ptomains, or more particularly, in certain instances, true bacterial toxins. Toxins are albuminoid substances, of unknown chemical constitution, which are specific both in their origin and in the effect they produce. They are endowed with certain other recognizable characteristics; they produce their harmful and specific effects only after a period of

incubation; they are readily destroyed by heat; they act in very small doses; and lastly, as we shall presently see, they produce antitoxins. Pasteur, as early as 1880, noted that old bouillon cultures of the *Bacillus avisep-ticus* which had been filtered free from bacteria would, on injection into animals, produce symptoms of narcosis. In 1888 Roux and Yersin¹² described a toxin found in filtered cultures of the diphtheria bacillus which was fatal for guinea-pigs in very small doses. Although the possibility of specific protection from bacterial invasion by means of previous treatment with killed or modified bacterial cultures was then known, attempts at a similar protection against this diphtheria toxin were at first unsuccessful. In the following year Kitasato succeeded in obtaining a pure culture of the tetanus bacillus and in 1890 von Behring and Kitasato¹³ obtained tetanus toxin from such cultures. They found furthermore that by treatment with certain chemical substances the toxins of diphtheria and of tetanus could be weakened so as to be better supported by laboratory animals; animals treated with these weakened toxins became immune from doses of the whole toxin that were fatal to the normal animal. And, more important still, it was shown that the blood of such actively immunized animals would protect normal animals against subsequent injection of fatal doses of toxin, or would even cure, within reasonable time limits, animals that had already received the toxin. These experiments form the rational basis for the present highly effective antitoxin treatment of diphtheria and for the prevention of tetanus.

The interesting studies of Ehrlich¹⁴ as to the mode of interaction of antitoxin with toxin not only gave rise to an enormously ingenious and fruitful theory of immunity but determined the recognized method of estimating and standardizing, by the use of guinea-pigs, the exact curative value of diphtheria antitoxin. We need not concern ourselves with the theories of antitoxin effect, as their interest, although of ultimate utilitarian value, is immediately largely academic. In addition to the better studied toxins of diphtheria and tetanus, true toxins have been described as formed by cholera vibrios, the bacillus of meat poisoning (*B. botulinus*), the dysentery bacillus of Shiga and the *Bacillus typhosus*. The exact relation of each of these latter toxins to pathogenesis of the disease in question is not fully determined nor can any final word be given as to the efficacy of an antitoxin treatment in many of these instances. In the case of the dysentery bacillus, at least, almost certain results may ultimately be expected from specific antitoxin therapy.

ACQUIRED IMMUNITY FROM BACTERIA

Reference has already been made to the important discovery of Pasteur that animals could be immunized by means of cultures of diminished virulence. In 1886 Salmon and Smith¹⁵ showed that pigeons could be immunized against the hog cholera bacillus by means of cultures that had actually been killed by heat. In 1888 Richet and Héricourt¹⁶ proved that this antibacterial type of immunity is transferable from one animal species to another. Von Behring and Nissen¹⁷ demon-

12. Roux and Yersin: *Annales de l'Inst. Pasteur*, 1888, II, 629.

13. v. Behring and Kitasato: *Deutsch. med. Wchnschr.*, 1890, No. 49.

14. Ehrlich-Bolduan: *Collected Studies in Immunity*, ed. 2, p. 481, Wiley and Sons, New York.

15. Salmon and Smith: *Centralbl. f. Bakteriöl.*, 1887, II, 543.

16. Richet and Héricourt: *Compt. rend. Acad. d. se.*, 1888, cxvii, 690.

17. v. Behring and Nissen: *Ztschr. f. Hyg.*, 1890, viii, 412.

9. Fodor: *Deutsch. med. Wchnschr.*, 1885, p. 435.

10. Nuttall: *Ztschr. f. Hyg.*, 1888, IV, 353.

11. Buchner: *Centralblatt f. Bakteriöl.*, V, 817.

strated (1890) that the blood-serum of guinea-pigs that had been immunized against the *Vibrio metchnikovi*, would kill these micro-organisms better *in vitro* than would the serum of normal guinea-pigs.

The extreme interest that greeted the discovery of the antitoxins led at first to a misconception of the mechanism of the protection afforded animals by the inoculation of bacterial cultures. It was at once supposed that in the majority of instances, for example, in the immunity against spirilla, the protection was antitoxic. In 1894, however, Pfeiffer²⁰ began his studies with cholera infection and immunity which led to a revolution in our conception of acquired immunity from bacteria. Pfeiffer injected cholera spirilla into the peritoneal cavity of guinea-pigs that had been immunized by means of subcutaneous inoculations of this micro-organism. Whereas in the normal peritoneum the spirillum increases rapidly in numbers and leads to a fatal infection, in the immunized peritoneum the vibrios are found to undergo rapid lysis; preparations made at intervals from the peritoneal exudate show increasing numbers of deep-staining granules which finally replace the normal vibrios entirely. Coincidentally with this "bacteriolysis" the animal recovers. Pfeiffer further showed that although his serum obtained from immunized guinea-pigs had in itself no destructive power for the vibrios *in vitro*, it would, when mixed with them and injected into the peritoneal cavity of normal guinea-pigs lead to the specific form of lysis.

Bordet²¹ was first to offer the correct explanation of "Pfeiffer's phenomenon," as it is called. He found that if the anticholera serum was employed soon after removal from an immunized guinea-pig it would suffice alone to destroy the vibrios in the test-tube. Heating to 55 C. or conservation for several days destroyed this lytic property, but the property could be restored to the inactive cholera serum by the addition of fresh normal guinea-pig serum which in itself has no lytic property. In other words, the specific lytic effect of anticholera serum is due to the cooperation of two substances, one of which occurs in all fresh normal serums, is destroyed by heat, is non-specific and is identical with Buchner's alexin (Ehrlich's complement). The second substance, the *substance préventive* or *substance sensibilisatrice* (Ehrlich's amboceptor) as Bordet called it, is specific, occurs only as the result of immunization, and resists heating to 55 C.

The further investigation of the finer interaction of these two substances concerned in bacteriolysis was rendered possible by Bordet's discovery of the artificial hemolysins in 1898.²² Bordet found that the blood-serum of guinea-pigs that have received several injections of rabbit blood acquires the property of specific destruction of rabbit red blood-cells. He was further able to show that this corpuscle destruction or hemolysis is also brought about by the combined action of alexin with a specific sensitizer. These fundamental facts have since been amplified to an extraordinary extent by the studies both of Bordet and of Ehrlich and his school.²³ Anti-hemolysins, composed in turn of antialexin and antisensitizer, have been described and their study has given great insight into the action of the antibodies in general. Ehrlich's explanation of the interaction of

antibodies and their antigens has been on the line of organic chemical reactions, whereas Bordet has persistently favored an explanation in harmony with the laws of physical and later of colloidal chemistry. There is now little doubt that the colloidal theory best agrees with the facts.

Many other questions of at first academic and of later practical interest have arisen from the studies on bacteriolysins and hemolysins. Thus the dispute between Bordet and Ehrlich as to the unity or the multiplicity of alexins gave rise to Bordet's "reaction of fixation" which has served as a most valuable diagnostic test of bacterial infections and has been particularly exploited in Wassermann's test for syphilis. A study by Bordet and Gay²⁴ in refutation of Ehrlich's conception of the sensitizer as an amboceptor led to the conglutination reaction which promises much as a method of serum diagnosis.²⁵

As may well be conceived the explanation of acquired anti-infectious immunity on purely humoral lines is certainly suggested by the work of Pfeiffer, Bordet and Ehrlich and such explanation would seem to be in essential disagreement with Metchnikoff's phagocytic theory as applied to this type of immunity. The disagreement is, however, more apparent than real. Metchnikoff soon pointed out that Pfeiffer's phenomenon of extracellular bacteriolysis is exceptional and occurs practically only with such delicate micro-organisms as the vibrios. In even this instance Metchnikoff believes that the lysis is preceded by a destruction of leukocytes, which liberates the cytase or alexin from them into the surrounding fluid.

But even though it becomes generally accepted, as seems likely, that all alexin is derived from leukocytes the relation of Bordet's sensitizer to phagocytosis in acquired immunity remains to be explained. It is admitted that the sensitizer of immune serum is free even in the plasma and in no sense an artificial product, as may be the case with alexin. The work of Denys and his pupils, which began in 1895,²⁶ threw the first light on this important question. Denys studied the protective and curative effect of an antistreptococcus serum on rabbits that had been infected with the streptococcus. He finds that the immunity afforded by this serum is due to its effect on the micro-organisms which renders them more readily taken up by phagocytes; the leukocytes themselves in the immunized animals do not differ from those of the normal animal. In 1902 Savtchenko²⁷ noted that a hemolytic serum likewise increases the susceptibility of the specific red blood-cells to phagocytosis. Neufeld and Rimpau²⁸ have followed the lead suggested by Denys and worked out with great care the effect of their "bacteriotropins," by which name they designate those substances in an immune serum which favor phagocytosis.

In 1903 A. E. Wright²⁹ described under the name of "opsonins" certain substances in the serum of human beings which when estimated quantitatively are supposed to indicate the intensity of the resistance of the individual to a given infection. Wright was able apparently to increase these protective opsonins, in case of lack, by "vaccination" with killed cultures of the micro-

20. Pfeiffer: Ztschr. f. Hyg., 1894, xviii, 1.

21. Bordet-Gay: Studies in Immunity, pp. 8 and 56.

22. Bordet-Gay: Studies in Immunity, p. 134 and subsequent chapters.

23. Ehrlich-Bolduan: See Collected Studies in Immunity, ed. 2.

24. Bordet-Gay: Studies in Immunity, p. 363.

25. Gay and Lucas: Proc. Soc. Exper. Biol. and Med., 1910, vii, 21.

26. Denys and Leclef: La cellule, 1895.

27. Savtchenko: Ann. de l'Inst. Pasteur, 1902.

28. Neufeld and Rimpau: Deutsche med. Wchnsch., 1904, and Ztschr. f. Hyg., 1905.

29. Wright, Sir A. E.: Studies in Immunization, Constable, 1909.

organism in question. Although Wright's work has the merit of attracting attention to the principle of cure by vaccination it is marred from a scientific standpoint by his failures to recognize the relation of his "opsonins" to the substances described by Denys, and particularly by the lack of fundamental experimental work on animals which subsequently in the hands of others has given us a more judicious attitude towards the theoretical and practical interest of his discovery. Animal experimentation has shown that even under the best experimental conditions, little value can be ascribed to Wright's "opsonic index" as an indication for specific treatment, grateful as such a method would be if accurate. Experimental work has further shown that the "immune opsonins" of Wright are probably identical with the "bacteriotropins" of Neufeld and Rimpau and probably differ quantitatively only from Wright's normal opsonins. Although Wright's first observations, which were not made under the best experimental conditions, led him to believe that his opsonins differed from the sensitizers of Bordet (Ehrlich's amboceptors) inasmuch as they are apparently thermolabile (55 C.), there now seems no reason for this artificial separation.

The following summary is, I believe, consistent with the facts at our disposal and is offered as a simple explanation of anti-infectious immunity. Bacteria are destroyed in the body of an immune animal by the action of two substances, the sensitizer which is the specific result of immunization, and which lies free in the plasma, and the alexin which under usual conditions in the body lies within the phagocyte. If phagocytosis has taken place the alexin works *in situ*; if phagolysis occurs the alexin is liberated and acts in the fluid extracellularly. There is, further, reason to believe that the more potent the sensitizer the more likely it is that phagolysis should occur, and in all events the greater the sensitization is the less the alexin required.

In vitro the bacteria are destroyed in a similar manner except that under such conditions when fresh serum is employed free alexin is the rule. When the alexin employed has been retained in the phagocyte as in the case in opsonin experiments, the destruction is intracellular subsequent to phagocytosis. The reason that normal opsonins are apparently thermolabile is because the normal extracellular alexin is destroyed and the normal opsonin (sensitizer) is not sufficiently potent to draw out the intracellular alexin or to cause the opsonized bacterium to be drawn within the cell. The destruction of the extracellular alexin is immaterial, however, in the case of immune opsonins (bacteriotropins) as their strong sensitizing power either makes use of a trace of alexin liberated by the phagocytes or else suffices to draw the treated bacteria within the cell.

The discovery of the artificial hemolysins gave rise to the hope that specific immune serums for other animal cells might be produced. The possibility of a specific epitheliolysin was particularly alluring in view of treatment of malignant tumors. The general conception of the cytolytins now is that they are specific for any cell of the species that has furnished the antigenic tissue rather than for any particular type of cell.

At this point may be mentioned certain other properties of immune serums that were discovered in connection with the studies on bacteriolysis and hemolysis. Charrin and Roger³⁰ noted as early as 1889 that a specific serum which was active against *B. pyocyaneus*

would clump cultures of this bacterium and the specific nature of this phenomenon of agglutination and many of the factors that control it were worked out by Bordet in 1895.³¹ The applicability of the agglutination reaction in the diagnosis of bacterial infections was exploited by Gruber and Durham in 1896.³² The early work of Kraus, 1897,³³ of Tschowitsch³⁴ and of Bordet, 1899³⁵ with bacteriolytic and hemolytic serum disclosed the specific phenomenon of precipitation, which was soon applied in the well-known forensic test for blood by Wassermann and by Uhlenhuth.

In concluding this outline of the development of immunology mention should be made of the interesting phenomenon of anaphylaxis or increased susceptibility, which under certain conditions follows injection of harmful proteins such as bacteria or of non-toxic proteins like horse serum. Rosenau and Anderson³⁶ and Otto³⁷ (1906) were first to draw attention to this condition, although it had been previously described and named by Richet. Rosenau and Anderson described the violent convulsive reaction, frequently followed by death, which follows the injection of horse serum in guinea-pigs that have previously received a minute dose of the same substance. Similar reactions have been studied following injections of bacteria. This extraordinary condition, which is apparently the opposite of the protective reactions of immunity, bears some mysterious but undoubted relation to the latter process. Although the outcome of the numerous studies on the relation of anaphylaxis to immunity now in progress are doubtful, little doubt may be entertained as to their theoretical interest and practical importance.

CONCLUSION

This article has attempted to outline step by step the development of immunology, a science worthy of specialized consideration both on account of its biological interest and its vital applicability. Nothing more than a suggestion of the application of immunology has been given. It has been evident that no true conception of the principles of immunity was possible until the methods of experimentation on living animals were applied. And each successive principle determined has of necessity depended on further animal experimentation. The sacrifice of animal life necessitated in acquiring our present knowledge of the mechanism of animal resistance to disease would seem justified from the standpoint of theory alone. In view of the present and potential value of applied immunology in the diagnosis, the prevention, and the cure of human and animal disease, skilled animal experimentation necessitates the encouragement of every humanitarian.

University of California.

Differential Diagnosis of Traumatic Neurasthenia.—Head injuries and railway accidents causing cerebral commotion, without producing actual brain lesions, may set up a traumatic neurasthenia, but general paralysis of the insane not infrequently follows a head injury in an individual predisposed by his past life to that disease, and it may be difficult to decide whether the patient is suffering from traumatic neurasthenia or the prodromal stage of general paralysis, unless a careful examination and investigation be made.—F. W. Mott, in the *Practitioner*.

31. Bordet-Gay: *Studies in Immunity*, p. 142.

32. Gruber and Durham: *München. med. Wehnschr.*, 1896, p. 285.

33. Kraus: *Wien. klin. Wehnschr.*, 1897, No. 32.

34. Tschowitsch: *Ann. de l'Inst. Pasteur*, 1899.

35. Bordet-Gay: *Studies in Immunity*, p. 148.

36. Rosenau and Anderson: *Jour. Med. Research*, 1906, xv, 179.

37. Otto: *Leuthold Gdnkschr.*, Berlin, 1906.

30. Charrin and Roger: *Compt. rend. Soc. de biol.*, 1889, p. 667.

TRANSFUSION IN PELLAGRA

A REVIEW OF TWENTY CASES *

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MOBILE, ALA.

August 4, 1908, I employed the first transfusion in the terminal stages of pellagra. Encouraged by the immediate improvement and rapid recovery in this patient, in collaboration with Dr. Gilman J. Winthrop, I have since transfused nineteen additional patients in the terminal stages of the disease.

Whereas we are unable to draw positive conclusions from this number of cases, we believe that certain valuable deductions may be derived from the statistics which they present. We have endeavored to preserve a spirit of scepticism and unbiased judgment throughout our investigations, and to draw accurate conclusions from the data presented.

Transfusion has been resorted to only in cases in the last stages of pellagra, or steadily retrograding under prolonged and careful treatment by approved therapeutic measures. To illustrate the type of cases in which transfusion has been employed, it is sufficient to state that two patients were moribund at the time of operation, and one patient died on the railway train twenty minutes before arriving at Mobile for transfusion.

	Cases
Transfused	20
Females, aged 22-53.....	16
Males, aged 3-42.....	4

We note that the females (16, or 80 per cent.) were four times as numerous as the males (4, or 20 per cent.).

	Cases
Recoveries (60 per cent.).....	12
Deaths (40 per cent.).....	8
Relapse (8.3 per cent.).....	1

This relapse occurred two years after recovery in an institutional patient exposed to reinfection.

	Cases
Temporary improvement followed by death.....	2
No improvement following transfusion.....	6
Complications incompatible with recovery.....	2

Patient 1, a male, aged 42, whose case was complicated with tuberculous peritonitis, showed temporary improvement for several days, but died one month after the operation.

Patient 2, a male, aged 3, showed distinct improvement following transfusion, but died eight days later from intestinal perforation.

	Cases
Complications presenting insufficient flow of blood, followed by death.....	2

In Case 1 the only available donor permitted insufficient transfusion through a severe degree of arteriosclerosis. In Case 2 inadequate operative surroundings and a neurotic 14-year-old boy as the only available donor permitted insufficient transfusion.

	Cases
Patients moribund at operation followed by death..	2

It will be noted that four of the eight cases in which death resulted might well be excluded, for the following reasons: Two patients received an inadequate amount of blood at transfusion and two were moribund at the time of operation. Excluding these four cases, the mortality rate would be 25 per cent. as compared with 40 per cent. in the entire series. Considering the grave mortality rate in the type of patients on whom transfusion was performed, we can but feel that our mortality rate of 40 per cent. in the entire twenty cases compares most favorably with the mortality (80 to 90 per cent.) in this type of cases treated by other therapeutic procedures. We have been unable to observe that transfusion was a direct factor of death in any of the cases; the deaths followed in periods of from three hours to one month after operation. One patient mani-

fest symptoms of cocaineism, necessitating a termination of transfusion at the end of fifteen minutes. This patient, however, made an excellent recovery from pellagra. Neither hemolysis nor agglutination, thrombosis nor embolism, have been observed in any of the cases.

Of the recovered patients (seventeen) there were: females, eleven (68.8 per cent), and males, one (25 per cent). We note a far greater percentage of recovery in the females. All the recovered patients presented distinct and severe lesions of pellagra; there were marked emaciation, asthenia, anemia, reflex excitability, and in many cases grave mental changes. Severe pellagra erythema, stomatitis, and diarrhea were present in a majority of the cases. Within a few days after transfusion there was either alleviation or disappearance of all the symptoms of pellagra; there was a rapid disappearance of the pellagra erythema, stomatitis and diarrhea, and also a gradual alleviation of the mental and nervous symptoms. In several cases there was an astonishing improvement in the patient's mental condition, shortly following operation. In all cases there was rapid increase in the patient's hemoglobin index, a rapid return of body strength, a return of digestive faculties, and an increase of body weight. All the recovered patients gained from three to eight and one-half pounds in the first week following transfusion; one patient gaining thirty-four pounds within eleven weeks. All the recovered patients have returned to a normal condition within from one to four months after operation; several are in better physical condition than they have presented for years. The patient relapsing two years after transfusion was living in an institution and was constantly exposed to pellagra, and it is fair to assume that this case may be considered a re-infection, rather than a relapse.

It is but just to state that all approved therapeutic procedures were employed in the recovered cases, both previous to and following the operation. As these procedures were employed without beneficial effect previous to the operation, it is fair to assume that they were unimportant factors in the recoveries after transfusion.

We have been unable to ascertain a constant clinical sign that would indicate a certainty of recovery following transfusion. A moribund state of the patient and complication of pellagra with pathologic conditions contra-indicate the employment of transfusion. The necessity of resorting to transfusion can be ascertained only on the appearance of positive signs of retrogression under approved institutional and constitutional therapeutic agents.

A majority of the patients referred for transfusion have recovered through hygienic, supportive treatment, not necessitating the employment of transfusion.

Transfusion, itself a delicate procedure, should be attempted only by those experienced in the technic, with a full knowledge of the dangers of the operation, and in adequate surroundings for its performance, and with the proper post operation treatment.

In these transfusions we have endeavored to employ donors who have lived in the same environment as the recipients, assuming that such donors who have not contracted pellagra possess a certain degree of immunity.

Transfusion was resorted to from donors who had recovered from pellagra in three cases; recovery occurred in one case (33⅓ per cent.). This case relapsed two years following transfusion.

Transfusion was made from donors who had never had pellagra in seventeen cases; recovery ensued in eleven cases (64.7 per cent.).

* Read before the Southern Surgical and Gynecological Association, Nashville, Tenn., Dec. 15, 1910.

We may assume that there is, at least, no preference of a donor who has had pellagra over a donor who has never had pellagra.

Transfusion was resorted to from donors who were relatives of the patient, but who had never had pellagra, in seven cases. Recovery occurred in three cases (42.8 per cent.).

Transfusion was made from donors who were not relatives and who had never had pellagra in ten cases; recovery in eight cases (80 per cent.).

Here we may assume, at least, that there is no ground for preference of the use of a relative over the use of a non-relative.

We are unable to state from the statistics available that there is any immune principle transferred by transfusion. It is probable that any beneficial results obtained may be attributed to the relief of the existing anemia, permitting the patient's organism to approach its normal functional activities and thus to combat the progress of the disease.

CONCLUSIONS

In transfusion in twenty cases of pellagra, we have found no ill effect resulting to the patients directly from the operation. We may safely resort to transfusion in the severe type of case, steadily retrogressing under approved therapeutic procedures.

We have noted no advantage in the employment of a donor who has recovered from pellagra as compared with the donor who has never had pellagra.

There is apparently no advantage in the use of a relative for a donor as compared to the use of a non-relative.

The recoveries (60 per cent.) following transfusion in the grave type of cases, compares most favorably with the recoveries (10 to 20 per cent.) in the same type of cases in which other therapeutic measures are employed.

The employment of transfusion in the terminal stages of pellagra must be undertaken with a full knowledge of the difficulties and dangers of the operation. Without careful selection of the cases and unprejudiced conclusions, this procedure will fall into an undeserved ill repute.

202 Conti Street.

EXPERIMENTAL POLIOMYELITIS IN MONKEYS

NINTH NOTE: IMMUNITY PRINCIPLES; EFFECTS OF HEXAMETHYLENAMIN (UROTROPIN); EARLY DIAGNOSIS; VIRUS-CARRIERS*

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AND

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NEW YORK

In previous publications,¹ we have shown that an attack of experimental poliomyelitis protects against reinfection with the virus of the disease, and that the blood of monkeys and of persons who have recovered from the acute effects of epidemic poliomyelitis contains neutralizing principles for the virus on which their immunity must be considered to depend. The immunity principles have been shown to reside in the blood-serum and are, therefore, probably of the nature of antibodies. The course of epidemic poliomyelitis in its acute stage

is not known to be influenced by any form of medication, whence it follows that it is a self-limiting process, as are so many of the infections; and at present we must view this condition of self-limitation as being determined by the elaboration within the body, under the influence of the virus of the disease, of substances of the nature of antibodies, the so-called immunity principles.

IMMUNITY PRINCIPLES IN ABORTIVE CASES

What have come to be designated abortive cases of epidemic poliomyelitis are now playing an important part in the discussion of the mode of transmission of the disease. Our knowledge of this class of cases is still very imperfect, and doubt even exists of their occurrence at all. Until greater refinement and accuracy are introduced into diagnosis, this doubt must continue to arise. It is desirable, therefore, to present evidence that bears on the occurrence of this type of the disease.

It is possible by means of neutralization tests to determine in a given instance whether an attack of poliomyelitis was or was not suffered, and this independently of the circumstance whether or not paralysis was present. The test is made by mixing the blood-serum with the filtered virus, incubating the mixture at 37 C. for a few hours, and injecting it into a monkey. Normal human serum has no power to neutralize the virus, while the serum from recovered cases of poliomyelitis possesses this power. Dr. Richard Stein, of New York, kindly supplied us with the blood taken from a patient suspected of having passed through such an abortive attack, in which the neutralizing immunity principles were demonstrated. This method does not provide a means of diagnosis, but it is of value in establishing the occurrence of abortive cases of epidemic poliomyelitis.

DISTRIBUTION OF IMMUNITY PRINCIPLES

Up to the present, the immunity principles have been established to exist in the blood of men and monkeys who have passed through the acute stage of the disease. We have already emphasized the lesions of the leptomeninges that result from infection with the virus of poliomyelitis and the changes, corresponding to them, that take place in the cerebrospinal fluid. It is of interest to ascertain whether or not the immunity principles exist in the cerebrospinal fluid, whether or not they may originate there, and, hence, whether or not the control of the lesions of the meninges and the nervous tissues is in any degree dependent on such a local production. We are enabled to determine these points by reason of the circumstance that the secretion of antibodies from the blood into the subdural space and the cerebrospinal fluid takes place, under normal conditions, practically not at all. Should they be found there, they must either have arisen locally, or have been secreted there from the blood because of abnormalities that increase the permeability of the blood-vessels.

We have examined a number of specimens of the cerebrospinal fluid obtained from patients at various periods after the disappearance of the acute stages of poliomyelitis, but at times when paralysis of one or more extremities still persisted. In some instances, the blood and cerebrospinal fluid were taken simultaneously and both tested for neutralizing power. The results are instructive. During the first one or two months, the immunity principles may exist both in the blood and in the cerebrospinal fluid, but, even at this early period, the principles demonstrated to be present in the blood have not always been detected in the fluid. At later

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. The previous work is summarized and discussed by one of us (Flexner) in THE JOURNAL A. M. A., Sept. 24, 1910, p. 1105.

periods and after one or more years, it is highly exceptional to secure neutralization of the virus by means of the fluid. The conclusion, therefore, is that during the earlier stages of epidemic poliomyelitis, when the blood-vessels of the leptomeninges and the central nervous system are abnormally pervious, the immunity antibodies escape into the membranes and nervous tissue; but as the vessels return to normal, the antibodies are no longer secreted and thus tend to disappear. It is probably in exceptional instances only, in which the vascular repair is delayed, that the secretion continues over a long period of time.

The immunity principles persist in the blood for several years, and it is probable, therefore, that they are elaborated in the situations, namely, in the lymphatic and blood-forming organs, in which antibodies in general are prepared. This point is of interest in view of our meager knowledge of the occurrence of the virus of poliomyelitis in organs at a distance from the central nervous system. In view of the facts stated, it may be deduced that to the circulating antibodies, rather than to those locally present in the cerebrospinal fluid, are due the limitation and repair of the damage inflicted on the nervous system by the infection, and the enduring protection of the body from reinfection.

EFFECTS OF HEXAMETHYLENAMIN

Since Cushing and Crowe showed that hexamethylenamin (urotropin) is in part eliminated into the subdural space, the drug has been employed to produce disinfection of the cerebrospinal fluid. It has been applied to the treatment of epidemic poliomyelitis by Dr. Roger S. Morris, of Baltimore, who first drew our attention to the matter, and by others. It is highly difficult, if not impossible, to determine clinically in human beings whether its administration is of any value, since its use has been empiric and it is clearly not a specific. However, it may still not be without a degree of beneficial action.

The drug is well borne by the monkey and we have tested its action under a variety of conditions on this animal. When a large dose of the drug is administered by mouth, its presence can be demonstrated by chemical tests in the cerebrospinal fluid soon afterwards. We have ascertained that when the virus of poliomyelitis is injected intracerebrally in monkeys in which the hexamethylenamin is already present in the fluid, and the drug is then administered by mouth daily thereafter, that in a proportion of animals so treated, but not in all, first, the incubation period of the disease is prolonged (from six to eight days to twenty-four days), and, next, the onset of paralysis is entirely prevented. When the drug is administered by mouth and the immune monkey-serum by injection into the subdural space, the paralysis can also be prevented and possibly with greater certainty.

We have not yet determined whether the animals surviving infection with the virus as a result of the administration of hexamethylenamin exhibit any greater resistance to reinoculation than untreated animals do to a primary inoculation. Should the multiplication of the virus have been entirely suppressed, we should not expect to find an increased degree of resistance. In immune serum protection, the susceptibility to reinfection is about equal to that shown by untreated animals.

In considering the significance of these observations, two points are of importance: first, it has now been shown that drug control of the virus of poliomyelitis within the body is a possibility; but, second, that the

successful results have been secured in inhibiting infection and not in restraining an already established infection with the virus.

EARLY DIAGNOSIS

The importance of securing methods of early and certain diagnosis of epidemic poliomyelitis is self-evident. With the growing significance of the abortive and mild cases in disseminating the infection, and with the increasing promise of a better therapeutic control of the disease, early diagnosis becomes a necessity. We have already pointed out that by taking advantage of the changes which regularly take place in the cerebrospinal fluid, it is possible, early in the course of the infection, to arrive at a certain diagnosis. We based this view and recommendation on the condition of the cerebrospinal fluid occurring in monkeys successfully inoculated with the virus of poliomyelitis. In these animals the increase in cells and protein takes place and reaches its height prior to the onset of the paralysis, after which there tends to be a rapid diminution in the protein content of and a slower reduction in the number of cells within the fluid. The cerebrospinal fluid is incorrectly described as "clear" in the beginning stages of the lesions of the meninges; and this error has arisen because practically all the examinations have been made after the appearance of the paralysis or other severe symptoms, and usually many days after their appearance.

The cerebrospinal fluid at the height of the lesions in the meninges exhibits a very slight turbidity or opalescence, best seen on gently agitating the fluid and due to a large increase in white corpuscles. It contains an excess of protein matter. The white corpuscles consist partly of polymorphonuclear and partly of mononuclear (lymphatic) cells. The excess of protein is readily detected by applying Noguchi's butyric acid test. Very rarely, the fluid is distinctly turbid and the polymorphonuclear cells predominate. Bacteria are absent. In rare instances, it becomes necessary to exclude tuberculous meningitis, which can be done by an examination for tubercle bacilli.

We have been able in a case of Dr. L. F. Frissell's² to determine that the facts just stated hold good also for human beings, the victims of epidemic poliomyelitis. An early and certain diagnosis of the disease in a suspicious instance has been made by examining the cerebrospinal fluid in the manner indicated. The paralysis was observed to follow the height of the cellular and protein changes in the fluid, and the cessation of the extension of the paralysis to coincide with a beginning reduction in these changes, as is the case in the monkey.

VIRUS-CARRIERS

In monkeys the virus of epidemic poliomyelitis passes from the meninges into the nasal mucosa, and infection can be readily achieved by bringing the virus into contact with the scarified mucous membrane. We have, therefore, suggested that the nasopharynx acts in human beings as the portal of entry of the virus into the central nervous system, as well as the source of its dissemination to other human beings. Concerning the habitat of the virus in nature, outside of infected persons, we have had no definite knowledge. The determination by Osgood and Lucas³ that the virus can survive in the nasopharynx of the monkey for nearly six months and long after the acute stage of the disease has passed has, therefore, high

2. Report to be published soon.

3. THE JOURNAL A. M. A., Feb. 18, 1911, p. 495.

significance with reference to the epidemiology of the disease. At this late period, the virus no longer survives in the nervous system. Indeed, the virus has not been detected in the nervous system after the lapse of three or four weeks, and often not after the first few days following the appearance of the paralysis. We have just demonstrated the virus in the nasal and pharyngeal mucosa of a monkey which survived the paralysis more than four weeks, and failed, in the same animal, to detect it in the spinal cord.

These observations indicate that monkeys successfully inoculated become, in some instances after recovery from the effects, passive carriers of the virus. Whether the same fact will prove to be true of human beings remains to be determined. In no instance has the nasal and pharyngeal mucosa of a person who has succumbed to epidemic poliomyelitis been examined for the virus. It has now become imperative to make such examinations; for on the results will depend in considerable degree the measures which will come to be adopted to control the spread of the infection.

Sixty-Sixth Street and Avenue A.

CULTIVATION IN VITRO OF RAT SARCOMA

A STUDY IN IMMUNITY*

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In a recent note¹ we showed that the method of cultivating tissues *in vitro*, devised by Harrison for the study of the developing nerve-fiber in frog embryos, and applied with modifications to the tissues of higher animals by Carrell and Burrows, could be adapted easily to the transplantable sarcomata of rats and mice. The present paper is concerned with the application of this method to the investigation of the nature of tumor immunity.

The phenomena of resistance and susceptibility to the inoculable tumors of these animals have been exhaustively studied. It may be stated summarily that immunity to tumor growth does not correspond to any of the types of immunity produced by the reaction of the body to infective organisms and their products. Specific antibodies have never been demonstrated in the blood-serum of animals immune to cancer. Moreover, Russell² has shown that, in immune mice, inoculated cancer tissue fails to grow because of the absence of a specific stroma reaction on the part of the host, and not because of the presence of cytotoxic or cytolytic substances acting on the implanted grafts. Or, stated differently, in immune animals, the implanted cancer cells lose their power of calling forth a stroma reaction. Notwithstanding the absence of a stroma, the tumor cells remain alive and proliferate for eight to ten days.

Sarcoma cells growing in blood-plasma find in the fibrin network an artificial stroma, so that the influence of the plasma alone may be held accountable if sarcomatous tissue, which grows very readily in normal plasma, fails to grow in the plasma of immune animals.

Two kinds of immunity to cancer are recognizable, natural and artificial. The percentage of naturally

immune animals (nullers) varies with age and with different varieties and strains. Old animals are, as a rule, less susceptible than young. Artificial immunity may be induced by the injection of suitable quantities of certain tissues, as, blood, spleen, embryonic tissues, etc.

In the present experiments we have used five types of immune animals: (1) nullers from a strain of rats in which sarcoma inoculations yield 80 to 90 per cent. of "takes"; (2) nullers from a hooded variety of rats in which the percentage of "takes" is only twenty to thirty (racial immunity); (3) immune old animals whose immunity was most probably attributable to their age; (4) animals immune to both rat sarcoma and carcinoma, and which had received immunizing doses of mouse sarcoma (pan-immunity); and (5) artificially immunized rats. We have used the plasma from animals of each of these five types of immunity, and have found that rat sarcoma grows in all without exception. The character of growth differed in no essential way from that observed in control specimens in which normal rat plasma was used. These results are in harmony with the observations of Russell which we have mentioned already.

THE INOCULATION OF RATS WITH SARCOMA GROWING IN VITRO

To test the viability of sarcomatous tissue growing *in vitro*, we have inoculated rats with pieces of sarcoma which had grown for three days at 37 C. in normal rat plasma and have obtained tumor growths. In the same way sarcoma growing in the plasma of immune rats has been transmitted to normal animals. The plasma from immune animals does not seem, then, in this short time, to influence deleteriously the subsequent growth of sarcoma tissue when this is inoculated into animals.

SUBCULTURES

Sarcoma growing *in vitro* may be readily grown in subcultures by transferring the original piece or a portion of the outgrowth to new plasma. Prolongation of life seems dependent only on the renewal of the medium. We have specimens growing at present which have been subcultured in this manner five times at intervals of two to four days. The plasma used was obtained from normal and immune animals, and the growth was as vigorous in the one as in the other.

437 West Fifty-Ninth Street.

Local Cutaneous Reaction to Sodium Glycocholate in Syphilis.—Loeper and Desbouis state that intradermal injection of a drop or two of a 0.5 or 0.2 per cent. solution of sodium glycocholate failed to cause any reaction in sixty-three healthy persons or those with non-venereal affections, while a pronounced local reaction followed invariably in eighty-one persons in the first, second or third stage of syphilis, with only a single exception in the latter class. A positive reaction was also obtained in one of nine patients with tabes dorsalis or paresis. The local erythema or ulceration developed from the eighteenth to the thirty-sixth hour and persisted for from two to five days. The findings with this "dermo-reaction," as they call it, paralleled with precision the Wassermann reaction and the Porges precipito-reaction. As there is nothing specific about the sodium glycocholate, the reaction, they state, merely indicates some profound biologic modification of the organism by the parasite and, like all biologic reactions, is not of invariable occurrence. It gave useful information in their experience in several dubious cases, differentiating the syphilitic from tuberculous and other ulcerations, etc. Their communication is published in the *Progrès Médical*, Jan. 21, page 231.

* This research was conducted under the George Crocker Special Research Fund.

* From the Department of Pathology, College of Physicians and Surgeons, Columbia University.

1. Lambert and Hanes: Growth in Vitro of the Transplantable Sarcomas of Rats and Mice, *THE JOURNAL A. M. A.*, Jan. 7, 1911, p. 53.

2. Russell, B. R. G.: Nature of Resistance to the Inoculation of Cancer, Third Scientific Report of the Imperial Cancer Research Fund, 1908.

ARSENIC IN SYPHILIS

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That mercury does not cure syphilis in all cases has been observed for many centuries. Christian Friedrich Harles¹ mentions the fact that Fallopius and Libavius used arsenic in the treatment of syphilis. F. Hoffmann² in the middle of the eighteenth century used the flores auri pigmenti diaphoretici, a sulphid of arsenic, satisfactorily in the treatment of "lues venerea inveterata," in cases in which mercury proved of no avail, and in cases in which ptyalism and mercurial poisoning were produced. Hoffmann asserts that he obtained excellent results by the internal administration of arsenic in the treatment of indolent syphilitic lymph-nodes, cachexia syphilitica, and in syphilitic periostitis. C. Ziegenbuehler³ used arsenic internally in the treatment of syphilitic arthritis with success. Horn⁴ and Renner⁵ treated old inveterate syphilitic lesions successfully with white arsenic. The use of arsenic in the treatment of syphilis is, therefore, by no means a modern invention.

Let us now see how salvarsan has fulfilled Ehrlich's ideas in the treatment of syphilis. Was the early enthusiasm which followed the use of this preparation an enthusiasm largely due to the fact that a new remedy was announced by one of the greater leaders in medicine, justified? Are the results following the use of salvarsan comparable to those which we expect from the administration of quinin in malaria? The answer to the question has been furnished by Neisser at the medical congress at Koenigsberg, Sept. 20, 1910. Neisser, a most profound observer, whose use of salvarsan has been very extensive, recommends a primary injection of salvarsan and repeats this injection after from three to six weeks; in nearly all cases he subjects the patient during this three or six weeks' intermission to a regular treatment with mercury in the form of injections with gray oil. This procedure is to be repeated until a permanent negative Wassermann reaction is obtained.

Despite the reported apparently brilliant results that have been obtained with the injection of salvarsan recurrences are being reported with greater and greater frequency, forcing us to the conclusion that a *sterilisatio magna* in Ehrlich's sense is in many cases not possible. The use of mercury and potassium iodid and in some cases quinin, in the treatment of syphilis cannot in my opinion be eliminated at the present time, even though I believe that potassium iodid will not cure syphilis, but mercury has cured in many cases, which some of the salvarsan enthusiasts seem to have forgotten entirely. The enthusiasm reached such a point that it was predicted that such metasyphilitic diseases as tabes and general paresis were a thing of the past.

In the treatment of syphilis, there are undoubtedly many factors which Ehrlich's inspiring researches do not fully explain. Why, for instance, do cases occur in which mercury brings about a rapid disappearance of all syphilitic manifestations, although the Wassermann reaction remains positive? Why does an early tabes and progressive paralysis sometimes occur in certain patients who have been subjected to a thorough course of treatment? Why does a positive Wassermann reac-

tion persist years after the primary infection in some patients who have not been treated with mercury, and who nevertheless do not acquire tabes or paresis? On the other hand, it is well known that there are cases, an appreciable number of them, which do badly under any form of chemotherapy.

The most important field for the use of the Ehrlich-Hata preparation is in the acute stages of syphilis, in which forms this remedy has proved of paramount value. Even if it does nothing more than to heal the primary lesion as rapidly as it does, and thereby prevent a further invasion of the system, and close an avenue of infection to others, it has accomplished a great deal. In the treatment of the chronic inveterate forms of syphilis its use has, as yet, not been sufficiently extensive to enable us to judge of its powers.

In the treatment of some of the diseases of the blood-forming organs, severe anemia, pernicious anemia, pseudoleukemia and lymphatic swellings of various origin, including glandular tuberculosis, its use has not been attended with success. In these maladies the inorganic preparations of arsenic act more rapidly and are more lastingly efficient than the organic preparations, a response similar to those noted after the administration of the organic and inorganic iron preparations in the treatment of the anemias and of chlorosis.

In these maladies and in cases of inveterate syphilis, which responded no longer to mercury, I have used successfully a solution of arsenic, which I described⁶ in 1909. The solution consists of 1 gm. arsenic trioxid and 2.25 c.c. normal soda solution in 100 c.c. of distilled water, representing a 1 per cent. solution of sodium arsenite, a solution which is very slightly alkaline. Its subcutaneous injection does not cause more inconvenience than an injection of morphin; its intramuscular injection is painless. Lately I have used the intramuscular method (glutei) exclusively. I have given these injections hundreds of times and I have never seen even the slightest tendency to suppuration. The skin before injection is disinfected with an alcoholic solution of iodine and potassium iodid, and the site of injection is sealed with a mixture of this iodine solution with tincture of benzoin in the proportion of 1 to 4, a procedure which I have also reported elsewhere.⁷

I shall briefly report two cases of syphilis in which the results of treatment with my arsenic solution were exceedingly satisfactory.

In a woman, aged 32, in whom the secondary lesions were not affected in the least by injection of mercury for a period of six months, injections of my solution of arsenic brought about a rapid disappearance of all syphilitic lesions after fourteen injections.⁸

A young woman, aged 24, in whom syphilitic manifestations kept appearing for a period of five years after the initial lesion, despite active mercurial treatment, was completely cured after twenty-four injections of my arsenic solution. Repeated Wassermann reactions in this case were entirely negative.

I wish to say a few words regarding the use of certain preparations of arsenic in the treatment of syphilis, which, because of convenience in administration, are extensively used in this country. The sodium salt of cacodylic acid, the sodium dimethylarsenate, for instance, is supposed to possess the advantage of being less poisonous than the other arsenic compounds, and has therefore been recommended especially by the French authors. Fraser of Glasgow has shown, however,

1. Harles, Christian Friedrich: De arsenici usu in medicina, Norimbergae apud Ioan Leonhard Schrag, 1811.

2. Hoffmann, F.: Observat. phys. med. sci. lii, obs. xli.

3. Ziegenbuehler, C.: Jour. d. prakt. Arznk. u. Wundarznk., 1809, v.

4. Horn, H.: Neues Arch. f. med. Erfahr., Berlin, 1807, iv, 257.

5. Renner: Arch. f. med. Erfahr., Berlin, 1812, i, 189.

6. Herzfeld; THE JOURNAL A. M. A., Feb. 13, 1909, p. 557.

7. Centralbl. d. Chir., 1909, No. 24.

8. New York Med. Monatschr., March, 1909, p. 371.

that the non-toxicity of the cacodylates is due to the fact that they are not split up within the body, and pass out in the urine unchanged. Schmiedeberg asserts that only a very minute quantity of the cacodylic acid is set free in the body and that this is excreted by the lungs and causes a disgusting garlic odor to the breath. I mention these facts merely because these preparations have been recommended lately in *THE JOURNAL* by Murphy and Caffrey.⁹ As regards enesol, a French preparation of arsenic that has been recently much in vogue, mainly because of the simplicity of its administration, Bachem¹⁰ asserts that this patented arsenic and mercury mixture is unreliable. The tablets of sodium arsenate on the market for hypodermic use vary in their chemical reaction. Some I found alkaline, some acid; their age is unknown, and their dosage not reliable.

224 West Twenty-Fourth Street.

WEAK MEDICAL SCHOOLS AS NURSERIES OF MEDICAL GENIUS

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The "Report on Medical Education in the United States and Canada," prepared under the direction of the Carnegie Foundation by Mr. Abraham Flexner, was issued in June and has received in one way or another the criticism of nearly all medical journals and medical associations. Those who have represented the Carnegie Foundation in this matter have sought to examine such criticisms and comments in a fair and reasonable spirit. They have felt pleased that the essential facts stated in the report have received no serious contradiction. They have endeavored, on the other hand, to profit in the further study of medical education by the comments made and the criticisms offered.

It is to be remembered that this report was not a mere criticism of existing conditions. It aimed to point out accurately and frankly the present status of medical education; but it did much more than this. It attempted a thorough-going study of the medical curriculum and it suggested certain broad lines on which the medical curriculum might fairly be expected to develop in the immediate future.

In seeking to serve both of these ends the report inevitably bore with some sharpness on a large proportion of existing medical schools and particularly on those schools which are commercial in their organization; and by "commercial" it was not meant that those who carry on such schools always derive from them much remuneration in the way of money. A commercial school, in the sense in which the term was used in this report, is a school conducted and managed in the interest of the men who control it; these men expect to receive from it some form of reward, either direct or indirect. The report made clear the fact that all such schools are to-day offering a form of preparation for medicine which falls far below the grade of efficiency which the people of every state in the Union have a right to demand. It was to be expected that the sharpest replies to the report should come from those institutions whose organization and plan of control run squarely against the principles it advocates. In particular, the commercial medical

establishments have in one form or another replied to the facts laid bare in the report, and the deductions made from these facts, with arguments of varying sincerity and relevancy.

The argument which was most commonly put forth at first was the time-worn plea for the poor boy. The poor school, it was argued, existed for the poor boy. This argument, however, had been so thoroughly anticipated in the report itself and was so clearly not in favor of the poor boy, but in favor of the poor medical school, that it has been practically given up by those who first resorted to its use. In its stead there has been presented in one quarter or another an interesting and singular plea. It is true, say those who put forward this second argument, that a large proportion of the men admitted into the weak medical schools are utterly unprepared; it is true that many of those graduated from such schools ought never to be admitted to practice. Nevertheless, they assert, every now and again in this army of the unfit and the unprepared the school finds some one whom it develops into a great physician or a great investigator—a genius in medical science—and it is worth while, say the advocates of such schools, to keep alive even the weakest medical schools for the sake of the occasional great men whom they may breed.

The most interesting effort to maintain this position which has come under my eye, and one which has been reprinted in many quarters, appeared in an editorial article in *American Medicine* in October. The attention which has been given to it arises largely out of the fact that the author undertakes to rebuke Mr. Abraham Flexner in his criticism of the University of Louisville Medical School on the ground that his distinguished brother, Dr. Simon Flexner, is a graduate of that institution. The article carries with it something of the force of an *argumentum ad hominem*.

The tenor of the article may be judged from the following extract:

What we have stated about Dr. Simon Flexner—facts that no one will gainsay—show conclusively, though perhaps inefficiently, his great usefulness both to his confrères in medicine and to humanity in general. Measured by his scientific stature, his contributions to medicine and his achievements, Dr. Simon Flexner in the light of his brother's dicta concerning medical colleges and their capacities for developing useful physicians, should be a graduate of some one of the large and best-equipped universities. But alas, fate ordained differently, and, according to the last edition of the *American Medical Directory*, Dr. Simon Flexner, the savior of babies' lives, director of one of the world's most famous and most important scientific institutions, a splendid scholar, one of the world's greatest scientists, a man who already has achieved wonders in his chosen field, and one who, if his life is spared, will probably be responsible for the conquest of several of humanity's most fatal maladies, suffered the frightful handicap of equipping himself for his life's work at the University of Louisville Medical Department. . . .

We realize that there are other phases of the question and a single case like this offers no real opportunities for comparisons or conclusions. But we still think it carries a valuable lesson and proves our contention that after all the personal equation is the important factor. We need all the Simon Flexners we can get, and a school that can help one such man in each decade to embark on a career so useful to his fellows and all mankind, has justified its existence, Brother Abraham notwithstanding.

It would be difficult to misrepresent the facts in the case more completely than they have been misrepresented here. The scientific work which Dr. Simon Flexner has done has all been in relation to the subjects of pathology and bacteriology. In the year 1889, when the University

9. Murphy, John B.: The Arsenical Treatment of Syphilis, *THE JOURNAL A. M. A.*, Sept. 24, 1910, p. 1113. Caffrey, A. J.: Sodium Cacodylate in Syphilis, *ibid.*, Dec. 24, 1910, p. 2211.

10. Bachem: *Berliner Klin.*, October, 1910.

of Louisville conferred on him the M.D. degree, the medical school of the University of Louisville had no laboratory for either pathology or bacteriology. Bacteriology was not even taught, and pathology, if taught at all, was taught only in a few lectures given by a practicing physician. The fact is that Dr. Simon Flexner got his real training by ten years of work at the Johns Hopkins University, and these the years which were the most fruitful in its history—the years when Professor Welch, starting with a few chosen pupils, brought up that group of men whose labors have gone so far to revolutionize American medical education in the brief period of two decades. It is difficult to believe that the writer of the paragraphs quoted did not know that Simon Flexner obtained his scientific training, not at the Louisville medical school, but at the Johns Hopkins University.

While this disposes of the *argumentum ad hominem*, it does not affect the underlying question. The assertion that weak institutions deserve to exist on the ground of the few great men who have come up through them is one constantly made. The argument is, however, fallacious. It is not true that a vast horde of unprepared and ill-trained physicians must be turned out on a helpless public in order to obtain an occasional medical genius. The medical genius, when he comes, will in no way be shut out by the fact that the medical school is on decent standards. On the contrary, the very presence of a group of able, distinguished professors will stimulate such men to emulate their example and to live up to their ideals. It will always happen that a few of the best men will come up from the weaker schools; but the fact that strong men can survive a handicap is a strange reason for maintaining handicaps which injure even the strong man and wreck very many others. The medical genius of thirty years ago had no choice; he had to go to a poor school, for no other kind existed. To-day he has a good many alternatives. It is to his interest, genius though he be, that he be compelled to prepare adequately for his medical career and to get a good medical training on this sound basis. Such a policy, of priceless importance to the supposed medical genius, is absolutely indispensable to the man of mediocre ability, and to the public which is at his mercy. The exceptions are apparent rather than real. How much more effective would even the genius have been, if he had not been handicapped by defects of training! Facts showing that a man of high purpose and extraordinary ability may find his way, even under adverse and unfavorable conditions, in no wise furnish an argument, or even an excuse, for making the conditions of education weak and ineffective and for imposing on the public a body of ill-prepared practitioners.

In all the discussion concerning the poor boy and the medical genius it is well that the public and the medical profession should not be drawn away from the fundamental reasons advanced in this report to show that commercial schools are to-day hindering, not helping, the cause of medicine. These reasons, briefly restated, are the following:

1. Such schools are essentially proprietary institutions. They are schools managed by physicians who are to profit both directly and indirectly by the enterprise itself. It is true that some of these are nominally branches of universities, but this arrangement is fictitious. This situation has been proved by long experience to be one under which right educational conditions are impossible. A college or an engineering school run under similar conditions would also become frankly commercial.

2. Schools so run must depend on fees. This means inevitably the recruiting of a large student body from the unprepared and the unfit. In most schools of this character advertising is freely resorted to. To secure the requisite number of men, standards, both of preliminary education and of technical training, must necessarily be kept so low that the large body can be admitted. This results in putting the instruction itself on a low plane.

3. Adequate endowment for medical education can never be obtained so long as the exploitation of medical education for commercial purposes is wide-spread. It is a striking fact in educational conditions in America to-day that medical education has received very meager support. Particularly is this true when it is remembered that the service which the physician renders to the average man of means is the most direct and personal service which any member of society can offer. No other man has so good an opportunity to present the cause in which he is interested as the family physician. Under such conditions the poverty of endowment of American medical education is a standing reproach to American men of medicine. It is due, as everyone knows, to the fact that the average business man understands that medical education has been hitherto a perquisite of the medical practitioner, and so long as that relation remains no large endowment of medicine can be had. Only when the medical school is managed by a board of men not directly concerned in its profits, whether they be in the form of fees or of increased practice, will it stand in the eyes of givers in the same light as other schools.

4. Finally, the continuance of such schools under their present conditions is a direct neglect of the rights of the students themselves and of the public, and this for the reason that so long as the conditions which have been described hold, these schools furnish a sort of education far inferior to that which they ought to give and far inferior as well to that which the public has a right to expect of those who are to practice on it. Such schools are practically in the situation which a commercial house would occupy if it sold its patrons old and antiquated machinery, presuming on their ignorance.

It is interesting to see with what success some medical sects, for example, the osteopaths, have learned from the history of medical education to ignore the claims of the public in their own interest. A brief and meager education is justified on the ground that the "science" is not as yet so comprehensive as "regular medicine" in its scope; but the osteopath, once graduated, is very vague as to just what he should or should not attempt to relieve by osteopathic methods; in consequence, he will at least try to cure everything! The dean of an osteopathic school in California admitted that his students are taught to treat even such affections as gonorrhea and syphilis by "osteopathic" methods. In a number of states the osteopaths are thus conducting schools which, while nominally osteopathic establishments, are really, by the aid of feeble departments of anatomy, pathology, and physiology, turned into the weakest of ordinary medical schools. On the plea that they are training a physician of limited range, they get from the state a concession enabling them to give the degree of D.O. in three years, instead of four; the graduates, though so poorly trained that under any other name they would not be admitted to practice at all, at once spread themselves over the entire field of illness, disease, and accident. But in carrying out this program, the osteopaths have done nothing other than to imitate the example of the weak medical school which goes on furnishing

to those who attend it a form of education enormously behind the requirements of our day and our time, while giving to the public the impression that it is offering facilities of an adequate and satisfactory sort.

One cannot study even the weakest and most unnecessary of these schools without realizing that not infrequently an admirable quality of devotion is to be found in them. The difficulty is that such devotion is mingled with a very large leaven of commercial interest; and in many cases the devotion is offered in a cause which cannot be approved. The betterment of medical education to a stage commensurate with the present status of medical knowledge is a task which will require the unselfish service, first of all, of the members of the medical profession. It is difficult to see how that service can be rendered until the members of this profession themselves are willing to acknowledge that, whatever may have been true of the past, the time has now come when the commercial medical school should disappear and in its place there should stand a school which, however simple and humble it may be, shall be conducted in accordance with an ideal which divorces the teaching of the doctor or surgeon from the question of securing practice and which unites both science and practice for the benefit of those students who are competent to receive the instruction.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

ANTIDYSENTERIC SERUM.—Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

Antidysenteric Serum.—The blood serum of horses immunized against the Shiga bacillus. Recommended in dysentery and summer diarrhea where the bacillus of Shiga is an etiologic factor. Marketed in bottles containing respectively 10 and 20 Cc.

ANTIPNEUMOCOCCUS SERUM.—Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

Antipneumococcus Serum, stated to be prepared from highly virulent original cultures derived from human pneumococcus affections. Marketed in bottles containing 10 and 20 Cc., and also in powder form in vials containing 1 Gm. each. The dry serum is intended principally for the local treatment of ulcus serpens.

ARHOVIN.—Arhovin is stated to be a solution of diphenylamine and thymolbenzoate in ethyl benzoate, the three constituents being in molecular proportions.

Arhovin is a yellowish liquid of aromatic odor and feebly cooling taste, on account of which it is supplied, for oral administration, in capsule form. It is almost insoluble in water, but readily soluble in alcohol, ether, chloroform and fatty oils.

Actions and Uses.—Arhovin is rapidly absorbed and excreted, being present in the urine fifteen minutes after ingestion. It has an antiseptic action on the urine and, it is claimed, it renders the mucosa of the genito-urinary tract unfavorable for germ growth. It is said to clear up cloudy urine and make it normally acid.

Arhovin is said to be useful in the treatment of urethritis, prostatitis, cystitis, and pyelitis, as an adjunct to local treatment. It is said to be useful for external application in place of silver salts.

Dosage.—By mouth, 0.25 (4 minims), in capsule, 1 or 2 capsules three to six times daily. For urethral injections: 3 to 5 per cent. solutions in olive oil or liquid petrolatum; 15 c.c. two to four times daily.

Manufactured by Dr. Arthur Horowitz, Berlin, Germany (Schering & Glatz, New York). U. S. trademark No. 58,756. Not patented.

Arhovin Capsules.—Each capsule is said to contain 0.25 Gm. (4 minims) of arhovin.

MAGNESIUM PEROXIDE.—*Magnesium Peroxidatum.*—Magnesium superoxide. Magnesium dioxide.—Magnesium peroxide is a mixture consisting essentially of magnesium peroxide and magnesium oxide with water of hydration, containing not less than 15 per cent. of magnesium peroxide (MgO_2).

Magnesium peroxide is a white powder. It is practically insoluble in water, but by such contact is gradually decomposed into hydrogen peroxide and magnesium hydroxide, the hydrogen peroxide being further decomposed by the alkaline magnesium hydroxide, with liberation of oxygen. It is decomposed by dilute acids with formation of a solution containing hydrogen peroxide.

If about 1 Gm. of magnesium peroxide be dissolved in a mixture of 10 Cc. dilute sulphuric acid and 90 Cc. water a solution results, 1 Cc. of which shaken with 5 Cc. ether and 1 drop of a 1/100 chromic acid solution should produce a blue color in the ether.

If about 0.2 Gm. magnesium peroxide be boiled with 10 Cc. water, then cooled and filtered, the filtrate should be but faintly alkaline; and 5 Cc. of this filtrate on evaporation should leave only a trace of residue.

If about 1 Gm. magnesium peroxide be dissolved in 25 Cc. dilute nitric acid and 2 Cc. tenth-normal silver nitrate added to the solution and the resulting precipitate filtered off, the further addition of a few drops of silver nitrate solution to the filtrate should not produce a turbidity.

If about 1 Gm. magnesium peroxide be exposed to the full heat of a Bunsen flame for five minutes, then dissolved in 25 Cc. dilute hydrochloric acid and the solution made up to 100 Cc., a solution will result which will conform to the following tests:

10 Cc. of the solution saturated with hydrogen sulphid should yield no precipitate, nor become colored.

10 Cc. of the solution, to which 10 Cc. ammonium chlorid solution and ammonium hydroxid in excess have been added, should yield not more than a turbidity on the addition of ammonium carbonate.

10 Cc. of the solution should not immediately give a blue color on the addition of a drop of potassium ferrocyanid solution.

If 0.2 to 0.3 Gm. magnesium peroxide, weighed into a flask, be dissolved with 20 Cc. dilute sulphuric acid, the solution diluted with 50 Cc. water, the titration of this solution with tenth-normal potassium permanganate should indicate the presence of not less than 15 per cent. magnesium peroxide, MgO_2 .

Actions and Uses.—Magnesium peroxide, due to its property of yielding oxygen is said to be of value as a gastric and intestinal antiseptic. It has been recommended in chlorosis, anemia, gout and rheumatism. It is also used as a constituent of dentifrices.

Dosage.—0.25 to 0.50 gm. (4 to 7 grains) two or three times daily.

Therapeutics.

DRUGS ACTING ON THE CIRCULATION

STROPHANTHUS

Description.—*Strophanthus hispidus* (genitive strophanthi, Latin masculine noun, second declension) derives its name from the Greek *στροφή* a turn or a twist, and *ἄνθος* a flower, from the twisted, thread-like segments of the corolla, and *hispidus*, Latin meaning hairy, the seeds being covered with hairs. *Strophanthus* is a woody climber in the forests of tropical Asia and Africa. The United States Pharmacopeia recognizes as official the seeds of *Strophanthus hispidus* De Candolle.

The natives of Africa, especially along the Zanzibar coast, express from the seeds of this plant an oily juice which they smear on their arrow-heads. This poison is variously known as the Kombé poison, or the Inée or Onaye poison, or the Wanika poison, or the Pahouins poison, depending on the region of Africa in which this poison is used.

The seeds of *strophanthus* contain from 1 to 4 per cent. of a glucosid extracted with alcohol and hydrochloric acid, and an acid called by Culbreth kombic acid. This glucosid is probably similar in action to the ouabain, the active principle obtained from the seeds of *Strophanthus glaber*.

The Kombé arrow-poison, named *strophanthus* by Sir John Kirk, was first examined in 1862 by Professor Sharpey, but the action of *strophanthus* was first presented to the profession by Professor T. R. Fraser, of Edinburgh, in 1870. Professor Fraser obtained from the seeds a bitter, white, imperfectly crystallin principle, *strophanthin*, which is a glucosid changed by sulphuric acid into glucose and crystallin *strophanthidin*. *Strophanthin* is more poisonous than strychnin, atropin and even hydrocyanic acid.

Strophanthus has not been used so much as its physiologic action authorizes because the best liquid preparation of it, the tincture, was supposed to vary so greatly in strength and efficiency as to render the use of the drug in this form uncertain. The U. S. P. tincture, if made by a reliable firm, has been shown by repeated examinations to be of good and efficient strength, although like all tinctures of crude drugs, the strength varies, though not so widely as does the tincture of digitalis. The mistake is often made of adding tincture of *strophanthus* to some watery solution. Watery menstrua have been shown to diminish the efficiency and to injure the activity of tincture of *strophanthus*. Therefore, the tincture of *strophanthus* should be ordered alone or, if deemed advisable, in combination with some other tincture.

Local Action.—*Strophanthus* has no action on the unbroken skin. If the volatile oil contained in the seeds is entirely removed before the preparations are made, *strophanthus* has but slight irritant action on the mucous membranes, but large doses of most preparations may cause nausea and vomiting and perhaps diarrhea. In small doses the slight irritation which is caused will act as a stomachic or bitter tonic.

Systemic Action.—Although *strophanthus* has been estimated as sixty times as toxic as digitalis, leaving out for a moment this toxic power, it may be epigrammatically described from the therapeutic standpoint as acting "just like digitalis, only less so." In other words, it is less slow of absorption and therefore more rapid to act; it is less likely to cause vomiting; it slows the heart less, increases its contractions less, and causes less contraction of the blood-vessels, especially those of the splanchnic area and the coronaries; and it is less likely to cause cumulative action. The active constituents of this drug are rapidly absorbed, and also rapidly excreted, hence if the doses are not too frequently repeated, as just stated, there is no danger of cumulative effect. Its action may be noticed in half an hour after it is administered and the effect will last for several hours.

The primary action of this drug, like digitalis, is on the *circulatory system*. The heart muscle is as strongly stimulated as by digitalis. The heart is slowed and the diastole prolonged probably by the action on the peripheral endings of the pneumogastric nerves in the heart.

It has been generally believed that *strophanthus* does not cause much arterial contraction and therefore does not much raise the systemic blood-pressure. Pharmacologic experiments, however, seem to show that it does raise the blood-pressure by causing arterial contraction. Clinically, however, in a dose sufficient to act on the

heart it does not raise the blood-pressure as does the same efficient doses of digitalis. Even when the blood-pressure is raised by it, it has seemed not to raise the pulmonary pressure. Hence *strophanthus* can be used in arteriosclerosis when digitalis is contra-indicated.

In ordinary dosage, *strophanthus* has but slight, if any, effect on the *nervous system*, but if any effect is produced on the brain and medulla it seems to be that of a slight sedative. Whether such quieting effect is due to an improved circulation or to a possible sedative effect on the thyroid gland, which if excited is the cause of cerebral excitation and nervousness, cannot be decided. From this sedative effect on the higher nerve centers, which under certain excited conditions is marked, nervous muscular irritability is diminished and *strophanthus* thus becomes a mild antipyretic.

Locally on the eye *strophanthus* in doses of 1/1000 grain will produce anesthesia of the conjunctiva, contraction of the pupil, and increased intra-ocular tension, but it later causes severe irritation.

In therapeutic doses, *strophanthus* has no action on the *muscular system*, but in toxic doses is a direct paralyzant of the voluntary muscles acting either on the endings of the motor nerves, or on the muscle itself.

The *glands* of the body are not affected except as by the general improved circulation, except that profuse perspiration may be diminished, and there is strong clinical proof that in hypersecretion of the thyroid as occurs in Graves' disease the secretion of this gland is diminished.

It is a moot question as to whether this drug has *diuretic* properties other than that caused by the improved circulation, but it does cause diuresis in some cases in which digitalis has seemed to fail. It does not cause contraction of the renal blood-vessels, but very probably is slightly stimulant to the kidney secreting cells. This drug is rapidly eliminated and there is no danger of cumulative action if the dose is not too rapidly repeated.

Action of a Therapeutic Dose, or the Primary Physiologic Action.—Good therapeutic action of *strophanthus* is shown by a slowed pulse with slightly increased arterial tension, stronger and regular action of the heart, diminished nervous irritability, and an increased amount of urine. The *toxic action* of *strophanthus* is shown by disturbed circulation, as occurs with a toxic dose of digitalis, and great muscular weakness.

The treatment of *strophanthus* poisoning is similar to that of digitalis poisoning.

Therapy.—The indications for preferring and using *strophanthus* instead of digitalis are:

First, when there is an indication for a cardiac tonic and digitalis produces nausea, vomiting, and too great increase of blood-pressure.

Second, when a cardiac tonic is indicated and the blood-pressure is already high.

Third, when a rapidly acting cardiac tonic is indicated.

Fourth, when there is more nervous irritability and weakening of the heart than actual muscular debility or incompetency.

Fifth, children are very susceptible to the action of digitalis, and hence *strophanthus* is often a better drug to use when a cardiac tonic is indicated.

Strophanthus can be used for any condition in which digitalis is indicated. It often acts well as a diuretic and in dropsical conditions not due entirely to cardiac incompetency *strophanthus* acts better than digitalis.

It is of special advantage in chronic nephritis when digitalis is contra-indicated. In the rapid heart and cerebral excitation of Graves' thyroid disease strophanthus is often of marked benefit.

Contra-Indications.—In the conditions in which digitalis is contra-indicated strophanthus should be used with care, but not being a vasoconstrictor in ordinary doses, and not contracting the blood-vessels of the kidneys, and not having cumulative action gives this drug a wider range of use within the realms of conservative therapy, than has the more strongly acting drug, digitalis.

Official Preparations.—Strophanthus is not used as such. *Tinctura Strophanthi*: This is a 10 per cent. tincture; dose 10 drops.

STROPHANTHIN

So much has recently been written of the therapeutic value of strophanthin when injected hypodermatically or intravenously, and, *per contra*, the use of tincture of strophanthus by the mouth has been reported so many times as unsatisfactory, that this active principle is worthy of a brief separate discussion.

The *Strophanthinum* of the Pharmacopeia is a glucosid or mixture of glucosids. It is a white or faintly yellowish crystallin powder, very bitter, and very soluble in water and dilute alcohol. A purer strophanthin may be obtained, but perhaps its activity may not be greater than the mixture of glucosids termed strophanthin of the Pharmacopeia. Ouabain and crystallized strophanthin are identical products and have the same toxic effect, and this substance is perhaps twice as active as is the common strophanthin of the Pharmacopeia. Crystallized strophanthin is a very active poison, claimed to be sixty times as toxic as digitoxin.

By the mouth strophanthin may produce serious poisoning. Tincture of strophanthus probably so soon causes nausea and vomiting that it would be difficult to produce serious poisoning with it; this is, perhaps, not true of strophanthin. On the other hand, its therapeutic effect has been found to be much less when given by the stomach than when given hypodermatically.

The best strophanthin on the market is obtained by a process of extraction, devised by Thoms, from strophanthus gratus, and has a definite melting point and solubility, as determined by Hatcher and Bailey.

Harold C. Bailey (*Journal of Pharmacology and Experimental Therapeutics*, October, 1909) advises that the daily dose of the crystalline strophanthin should not exceed 0.0005 gram, (1/120 of a grain) and that this dose should not be repeated in 24 hours. If crystalline strophanthin is given intramuscularly, it should be dissolved in a 1 to 4,000 saline solution, or for intravenous use in a 1 to 6,000 or 8,000.

The hypodermatic dose is very much less than that by the mouth, and in fact tablets for hypodermic administration are offered, each containing 1/500 of a grain, the dose ranging from 1/500 to 1/100 of a grain. Hatcher (*THE JOURNAL*, March 26, 1910) has several times declared that crystalline strophanthin is twice as toxic as the amorphous strophanthin of the Pharmacopeia.

Strophanthin seems to be especially valuable as a cardiac stimulant when there is weakened heart muscle in chronic myocarditis or in chronic valvular disease, especially if there is coincident nephritis. Hypodermatically, however, strophanthin should probably be reserved for emergencies, although a number of French clinicians

give 0.001 gram (1/60 of a grain) of strophanthin intramuscularly or even intravenously, once in 24 hours, for several days, if necessary. On the other hand, once or twice, at 24-hour intervals, is generally sufficient. Administered in this manner, this drug seems quickly to increase the strength of the cardiac contractions, to slow the pulse, and often in cardiac disturbances causes diuresis. However, if the kidneys are damaged, strophanthin may not act as a diuretic unless some other drug is added to the treatment, such as caffeine. Although strophanthin is recommended to be used intravenously, it would seem hardly justifiable, except in emergencies. On the other hand, when the heart is failing from cardiac disease or dilatation, and digitalis is contra-indicated or useless, the patient should not be allowed to die without a trial of strophanthin.

Strophanthin has proved successful in relieving almost hopeless pulmonary edema from failure of the right side of the heart.

Symptomatology of Anterior Poliomyelitis

The Board of Health of New York City, in line with many other health boards, has made infantile paralysis a reportable disease. A special form of card has been prepared for recording the cases, and the inspectors have been instructed to pay special attention to securing exact information as to periods of incubation and infectivity. Negative findings may be as important as positive ones. A bulletin has been issued concerning the disease, which gives a clear statement of the symptoms and signs in the light of the late investigations, and also emphasizes the value of the findings in the cerebrospinal fluid. In view of the probability that in the coming warm season many cases of infantile paralysis will occur, this portion of the bulletin may be worth republishing. It says:

"Epidemics of acute poliomyelitis have been noted with increasing frequency in this and other countries. Its infectious nature has long been suspected, and in 1909 was rendered almost certain by the production of the disease in monkeys by inoculation of the emulsified spinal cord of a child that had died of the disease. Studies made at the Rockefeller Institute have made this proof still more conclusive. The virus is contained not only in the spinal cord, but also in other parts of the body, most particularly the nasopharyngeal mucous membrane. This is significant in its relation to isolation and prophylaxis, and suggests a likely source of dissemination.

"Abortive forms without paralysis have been noted and are recognized with difficulty, except during an epidemic. Examination of the cerebrospinal fluid obtained by lumbar puncture is of great assistance in confirming the diagnosis. The distinctive features of the fluid are: clear fluid, absence of bacteria, increased cellular elements (chiefly lymphocytes), moderately increased tension, and definite increase of protein content as shown by Noguchi's test. In a recent case a positive diagnosis was made by lumbar puncture, twenty-four hours before any sign of paralysis appeared. The meningeal and cerebral types of the disease may thus be differentiated from epidemic cerebrospinal meningitis.

"The disease is characterized by a sudden onset with fever, followed, generally, within from twelve hours to three or four days, by general or localized paralysis, almost always of a flaccid type, with reaction of degeneration and early atrophy in the muscles permanently affected. Paralysis is most common in one or both legs, but may occur in any part of the body. Vomiting and convulsions occur frequently at the onset but are not constant symptoms. More significant are restlessness and insomnia which occur early in most cases. Pain and tenderness, usually referred to the joints and muscles, were common in the 1907 epidemic in New York City.

"The period of incubation varies widely; between two and thirty days. The average appears to be from seven to ten days. The so-called abortive cases may act as carriers, and there are also many authentic cases in which the disease was in all probability carried by a third person.

"The duration of the period of infectivity is unknown, which leaves the question of isolation and quarantine unsettled."

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, FEBRUARY 25, 1911

THE EFFECT OF ROENTGEN RAYS ON THE THYMUS

That Roentgen rays produce distinct changes in various tissues of the animal body is well known, but concerning the exact mechanism by which these changes are caused we know practically nothing. Marked changes may be produced in the blood and blood-forming organs by these rays under proper conditions and, as first shown by Heineke, the lymphocytes are especially sensitive to their action, disintegration taking place very rapidly. It is on this account that the rays are used in the treatment of leukemia. In animals it has been found that the lymphoid tissues themselves are markedly affected. Recently the effect of roentgenization on the thymus has been studied experimentally by Rudberg,¹ and as the resulting cellular changes have been followed closely (in rabbits) a brief account of them is given.

Under the influence of the rays, the lymphocytes as well as the cells of the reticulum of the thymus rapidly undergo a characteristic destructive process which sets in with disintegration of the lymphocytes within three and one-half hours after beginning the exposure. The products of disintegration, as a rule, do not leave the thymus, but are taken up by the cells of the reticulum and subjected to intracellular digestion, and in from twelve to forty-eight hours all lymphocytes and lymphocytic remnants may have disappeared. The reticulum cells now become closely approximated and the tissues assume an epithelial aspect. Degeneration of the reticulum cells takes place somewhat later, often after all lymphocytes have been destroyed, and continues after the regeneration of lymphocytes has begun. The reticulum cells are changed into large transparent forms with pronounced foamy structure. Large parts of the thymus may become sequestered and, through softening of the dead tissue, cystic cavities may arise. If the destruction has been moderate only, the regeneration which follows is accomplished by the reticulum cells as well as the lymphocytes still present. But if prolonged exposures are made, then all the lymphocytes may be destroyed and now the new lymphocytes appear

to come by importation through the lymph-vessels, passing into the perivascular connective tissue to the center of the lobules and spreading themselves out towards the periphery. Later, these cells multiply and after a time the division of the parenchyma into cortex and medulla becomes apparent again.

Marked changes in the thymus occur also when it is protected against direct action of the rays by means of lead plates. In this case there is not only some disintegration of lymphocytes, but also an emigration. The latter takes place in the usual method characteristic of accidental thymic involution and inanition, the lymphocytes wandering into the medulla and entering the lymph-vessels there. The emigration begins early and is most marked from the second to the fifth day; it may be most marked before the animal begins to show signs of diminished vitality and loss of body weight and, consequently, has no connection with the thymic involution which may result from disturbance of the general condition by roentgenization. It seems that the cells emigrate in order to replace cells that have been destroyed elsewhere in the body and in the blood, and in consequence the number of lymphocytes in the blood increases. The disintegration of the thymic lymphocytes in animals whose thymus is protected takes place during the first day after irradiation and is similar to that which follows direct irradiation but is less extensive. The cause is ascribed in part to a secondary irradiation from the neighboring parts of the body, which have been exposed to the rays, and no doubt in some part to the action of lymphocytolytic substances which appear in the blood and tissue fluids. This secondary irradiation is easily shown by placing a photographic film under the lead plate. That lymphocytolytic substances are produced was shown by Rudberg by injection of the blood and serum of irradiated animals into the peritoneal cavity of healthy animals, in which there resulted a distinct disintegration of lymphocytes in the follicles of the appendix and mesenteric lymph-nodes.

At present we must be satisfied with knowing that Roentgen rays cause the remarkable changes that have been described; how they cause them is a mystery.

THE CARD SYSTEM OF RATING DAIRIES

In a previous issue,¹ the question of dairy inspection was discussed in a general way. It is evident that in order to obtain from dairy inspection results of value in the way of improvement of the milk-supply, a uniform system of inspection must be practiced and careful records kept. This would permit a comparison of the results accomplished and would encourage the improvement of dairies by the dairymen. The most reliable index of the quality of the milk-supply is the bacterial content. Improvement in dairy equipment and methods should be reflected in the bacterial findings.

1. Om Thymusinvolutionen Efter Röntgenbestrålning Jämte Några Iakttagelser Öfver Leukolysen I Öfrigt Hos Röntgenbestrålade Djur. Af Hans Rudberg. Upsala, 1909.

In order to secure an efficient system of records and to facilitate the comparison of results a number of score-cards have been devised. The one most commonly used has been worked out by the Department of Agriculture and covers two features—equipment and methods. Under equipment are considered the health of cows, provisions for their comfort, food and its quality, the construction of stables, bottling rooms, sterilizers and other utensils. Forty points are allowed in the rating for perfect equipment. Under methods are comprised cleanliness of the cows, of the stables, ventilation of the buildings, condition of the utensils, of the milkers, of the milk room, and the methods of handling the milk and its prompt and efficient cooling. For perfect methods, 60 points are allowed.

This card has also on its reverse side a place for recording the number of cows, the number of gallons of milk produced daily and the market to which the milk is sent, and a place for recording the quantity of milk procured from other dairies.

Another system of inspection, used in Michigan, comprises five features, allowing 100 points for each. They cover the health of the herd and its protection, cleanliness, construction and care of utensils, health of employees and manner of milking, and the subsequent handling of the milk. A perfect score would be 500 points. In addition, the general sanitary conditions are noted as good, medium, poor, etc. There is also a provision for recording the quality of milk under the heads of percentage of butter fat, lactometer tests, total solids, and solids not fats.

The card devised by the government has aided much in forming an idea as to correct dairy conditions, but it is far from perfect. The chief criticism is that the details under each of the heads mentioned above are not sufficiently worked out. For instance, the matter of tuberculin tests of the cows, the manner of bedding, the construction of the stable with reference to light, cubic air space per cow, screens in windows, etc., might be given in greater detail, together with more minute details with reference to the condition and manner of using, cleansing and keeping the various utensils. Similarly the cleanliness of the cows, the methods of handling the manure and food and the condition of the milkers are not sufficiently particularized.

It will be seen that much of the value of such records will depend on the knowledge and judgment of the inspector and the thoroughness with which he does his work. For this reason it is highly important that men thoroughly trained should be employed for this purpose. An excellent plan would be to demand from the applicants for such positions that they have certificates from a dairy school in good standing, so that they may have a proper appreciation of the points of clean milk production that would tend most to a low bacterial count. For there must be a definite relation between the score of the dairy and the number of bacteria present in the

milk. The higher the score the smaller the number of bacteria, and *vice versa*.

The foregoing has reference, of course, only to the production of milk in the dairies. The control of conditions in milk depots and stores and throughout the distributing system must be carried on in a similar manner.

The advantages to be obtained by a thorough system of inspection and record-keeping would be, first, the accumulation of reliable data concerning the essentials of clean milk production and handling; second, the imparting of instruction to all those engaged in milk production and the milk traffic; third, the establishment of a statistical basis for appropriate legislation. The card-rating system, if developed in sufficient detail, and accompanied by efficient inspection, would be an effective method of securing these results.

THE FUNCTION OF THE CORPUS LUTEUM

Whenever a pathologist presents a summary of the present status of the problem of cancer etiology, he is more than likely to conclude with a statement to the effect that the solution is up to the biologist. This conclusion rests on the conviction that the growth of cancer cells depends on the same fundamental factors as the growth of normal cells, which have in some way become perverted. The pathologist reasons that when the biologist has shown why normal cells proliferate, and especially why they stop proliferating when certain well-defined limits of growth have been reached, it will be a simple matter to find why sometimes the growth processes are of excessive energy or why they fail to stop at the proper time, and by their lawlessness constitute malignant growths. Cellular biology, therefore, seems to hold the key to the genesis of tumors, and cooperation between its disciples and the pathologists seems to offer the best hope of success. As an illustration of this principle we may call attention to the important studies on the growth of tumor cells under the microscope which have been reported in recent numbers¹ of *THE JOURNAL*, and which are the outcome of the observations on cell growth made by a pure biologist, Professor Harrison of Yale.

Equally interesting advances along the line of cell growth, which have a presumptive bearing on tumor genesis, have been recently made by a reverse process, the incursion of a pathologist into the fields of biology. Leo Loeb, through whose studies America has the credit of the first extended series of successful tumor transplan-

1. Among these may be mentioned: Carrel, A., and Burrows, M. T.: Cultivation of Adult Tissues and Organs Outside of the Body, *THE JOURNAL A. M. A.*, Oct. 15, 1910, p. 1378; Cultivation of Sarcoma Outside of the Body, *ibid.*, Oct. 29, 1910, p. 1554; Nov. 12, 1910, p. 1732. Weil, R.: Biochemical Investigation of Malignant Tumors and Its Diagnostic Applications, *ibid.*, Oct. 29, 1910, p. 1532. See also report of meeting of American Association for Cancer Research, *THE JOURNAL A. M. A.*, July 23, 1910, pp. 340-1; Culture of Cancer Cells *in Vitro*, a letter from G. Volpino, *ibid.*, Jan. 14, 1911, p. 139. Lambert, R. A., and Hanes, F. M.: Growth *in Vitro* of Transplantable Sarcomas of Rats and Mice, *ibid.*, Jan. 7, 1911, and Feb. 25, 1911, p. 587.

tations, has during the past few years published a number of observations on the function of the corpus luteum which have much significance for both biology and pathology. It may be recalled that the corpus luteum has a histologic structure strikingly similar to that of the adrenal cortex, a fact which makes it probable, if not certain, that this transitory cell mass must possess some function in the way of internal secretion. In consequence of this fact and of sundry experiments, various hypotheses have been evolved, but without the final establishment of the function of the corpus luteum. Through an extensive series of experiments Loeb² has now positively determined that this organ, for such it may properly be called, does produce an internal secretion or secretions which exercise an important influence on the sexual cycle. One function of this secretion seems to be that of prolonging the length of time between two successive ovulations, so that during pregnancy the useless discharge of mature ova from the ovary is prevented, whereas if impregnation does not occur the early atrophy of the corpus luteum of menstruation or ovulation permits of more rapid maturation of ova, thus hastening the time of the next possible impregnation.

Another function, and one that seems especially related to cell growth and tumor formation, is that of sensitizing the uterine mucosa so that it reacts to any sort of mechanical stimulus by forming a maternal placenta. A few days after ovulation the uterine mucosa of the guinea-pig can be made to take on a most exuberant growth, leading to the formation of much placental tissue, by merely introducing into the uterine cavity an inert foreign body, such as paraffin or a bit of glass rod, or by injuring the mucous membrane by incising it. Nervous influences having been excluded, and the essential importance of the corpus luteum in producing this condition having been established, the conclusion is reached that the corpus luteum secretes a hormone with the function of sensitizing the cells of the uterine mucosa so that they react to indifferent mechanical stimuli by rapid proliferation. Normally, this stimulus is furnished by the impregnated ovum, but as any foreign body will have the same effect as the ovum in this respect, the purely mechanical nature of the stimulus is evident.

The close relation of these observations to tumor pathology is at once apparent when we recall the numerous instances in which some mechanical stimulus, whether a blow or chronic irritation, has led to the production of a malignant tumor. Furthermore, experimental studies on tumors in animals have indicated that the power of the malignant tissues to proliferate is influenced by chemical substances of unknown nature, which in some cases seem to stimulate and in

others appear to retard cancer growth. The strange behavior of those remarkable placental tumors, the deciduomata, also recurs to one in contemplating the great growths of placental tissue which Loeb has caused to develop in the uterine mucosa as a reaction to mechanical stimuli. To attempt any speculation as to the exact meaning of these experiments for human pathology at this time would, however, be premature.

It may be of interest to the clinician to learn that it is not possible to produce the effects characteristic of the corpus luteum secretion by injecting extracts of the fresh corpora lutea of guinea-pigs or of swine into castrated guinea-pigs.³ This fact is of importance in view of the proposed and attempted therapeutic use of the same material in practice, although it must be granted that negative experimental results do not absolutely exclude positive clinical results, however improbable the latter may thus be rendered. There seem to be few internal secretions whose normal delivery to the tissues in minute quantities as needed can be successfully replaced by the therapeutic introduction of larger quantities at longer intervals.

Current Comment

EFFORT FOR HIGHER PRELIMINARY STANDARDS

An energetic effort is being made in at least two states to secure legislation providing for a higher standard of education preliminary to the study of medicine. At a meeting of the Ohio State Medical Teachers' Association held in December, a resolution was adopted requesting the Ohio State Medical Board to join the association in petitioning the legislature to enact a law fixing the minimum educational requirement preliminary to the study of medicine at two years of collegiate work, including chemistry, physics, biology and a modern language. Legislation providing for a similar standard is also being asked for in Utah. That standard has been adopted in Minnesota, North Dakota, Colorado, Iowa and Indiana, and a requirement of one year's work in physics, chemistry and biology in addition to a standard four-year high-school education has been adopted in South Dakota, Kansas and Connecticut. It is clear that such requirements on the part of state boards are not unreasonable; twenty-eight colleges are now enforcing the two-year requirement and thirteen others are requiring one year of collegiate work or its equivalent for admission. Of the latter group several have expressed their intention eventually of requiring two years of collegiate work. Should the state boards more generally adopt the increased requirement, it might cause a further reduction in the number of medical colleges, but with our present oversupply that reduction would not be serious. Of much more importance, however, are the

2. Loeb, L.: Experimental Production of the Maternal Placenta and Function of the Corpus Luteum, *THE JOURNAL A. M. A.*, Oct. 30, 1909, p. 1471; *Med. Rec.*, June 25, 1910; abstr. in *THE JOURNAL*, July 9, 1910, p. 166. See also Fraenkel, L.: *Arch. f. Gynäk.*, 1910, xci, No. 3; abstr. in *THE JOURNAL A. M. A.*, Jan. 7, 1911, p. 79.

3. Morley, W. H.: Cases in Which the Extract of Corpus Luteum Has Been Used, *Jour. Mich. State Med. Soc.*, November, 1909; abstr. in *THE JOURNAL A. M. A.*, Dec. 11, 1909, p. 2035. Malis, C. B.: Therapeutic Value of Extract of Human Corpus Luteum, *Univ. Penn. Med. Bull.*, July-August, 1910; abstr. in *THE JOURNAL*, Sept. 10, 1910, p. 966.

facts that this country would have a larger number of medical colleges adhering to reasonably high standards for admission; that a larger percentage of medical students, because of the higher entrance requirements, would be enabled better to grasp the fundamentals of a modern medical training, and that the public would be benefited by having a larger number of educated and well-trained physicians.

A JUDICIAL VIEW OF DRUG ADULTERATION

A New York firm that shipped adulterated drugs into another state was prosecuted under the federal Food and Drugs Act. As the government's case against the firm was clear and unmistakable, a plea of guilty was entered. Judge Holt, of the U. S. Circuit Court for the Southern District of New York, before whom the case was tried, suspended sentence over a term of two years. In so doing Judge Holt criticized the methods employed by the government officials in securing the evidence in the case. It appears that the Department of Agriculture had a San Francisco house order from the New York firm a number of different drugs. They were analyzed and the prosecution was based on the chemists' findings. Judge Holt in his criticism said:

"I do not propose to aid in this sort of perversion of the law and abuse of its processes. This method of getting evidence in cases of this kind is resorted to by inspectors to show their efficiency through the medium of sham orders under cover of interstate commerce. These things were bought for the purpose of getting up a criminal prosecution instead of legitimate business purposes. This is following out the idea of modern federal legislation and taking the proper relief power from the states."

To the man in the street the action of the government employees in securing evidence against the shippers of adulterated drugs seems entirely praiseworthy. From the standpoint of public health there is no doubt that the adulteration of drugs and foods should be stopped, and at present the federal authorities seem to be about the only ones—with a few notable exceptions—that are competent to check it. Judge Holt apparently thinks that, because the adulterated drugs were not bought for "business purposes" the government authorities were overzealous in proving such adulteration. Evidently, the judge would not approve of the various city weight and measure inspectors because, in pursuit of their duties, they purchase food and other products not for "business purposes," but to determine whether the public is being "short-weighted." Anyone conversant with human nature knows that the strongest incentive to commercial honesty is a well-founded belief that dishonesty is constantly being exposed by the officials whose duty it is to safeguard the public's health and purse. Judge Holt also echoes that oft-heard plaint that, in prosecuting "patent-medicine" fakers, drug adulterators and food sophisticators, the federal government is encroaching on the powers of the state! For years before the Food and Drugs Act went into effect the various states had laws which were supposed to protect the public against adulteration in drugs and foods, but the enforcement of these state laws was—and in many cases still is—the veriest of farces. Zealousness on the part of officials who were supposed to enforce

the state pure food and drugs laws usually resulted disastrously to such officers, with the result that many state food and drug inspectors were satisfied to become mere salaried figure-heads. If the same opposition is going to be brought against federal officers who have the public health, rather than the "business interests" at heart, we may look for the government officials to develop the same apathy that has paralyzed many of the state food and drugs acts and made state enforcements of law a byword and a reproach. If there is anything the "business interests" like better than a considerate congressman, it is a solicitous judge.

ATHLETICS IN THE NAVAL ACADEMY

In his recent report, the Surgeon-General of the Navy calls attention to a point which may be of some importance: that is, the danger of too strenuous athletic training for naval officers. It has long been observed that highly developed muscles do not always accompany a high resistance to infection, but often weaken resistance by producing an imbalance between the different organic functions. It has frequently been noticed, for example, that many athletes die of tuberculosis. The frequency, perhaps, is apparent rather than real, since an athlete's death from tuberculosis is sure to be remarked because it seems unexpected. It is almost certain, nevertheless, that athletes do not possess any exemption from that disease because of their splendid physical development, and it is even probable that this very fact may increase their liability. Naval officers in active service are confined within rather narrow quarters and have little opportunity to keep up the physical activities that an overtrained and overdeveloped physical organization may need. An excessive muscular development that is not demanded by the occupational activities of the individual becomes a parasitic element in the organism; that is to say, instead of contributing to the individual's total efficiency, the activities required by such a muscular development make drafts on the individual's time and energies and actually decrease his efficiency. Under such circumstances it becomes a positive detriment instead of a benefit.

A CORPORATION WITH A CONSCIENCE

In his last annual message President Taft recommended legislation against the use of white phosphorus in the manufacture of friction matches as causing one of the most serious of occupational diseases. A bill was introduced into Congress acting on this recommendation, but it appears that the use of any substitute had been covered by a patent held by the Diamond Match Company. This fact imperiled the passage of the bill, even if the enforcement of the patent right was not absolutely insisted on by the holder, as Congress thought it could not legislate away a right legally bestowed, even if it was only nominally held. To meet this objection the company has voluntarily surrendered its rights and dedicated the patent to the use of the people of the United States. As the *Outlook* says, this action, while it may be in some measure dictated by enlightened self-interest, deserves cordial commendation.

Medical News

ALABAMA

New Sanatorium.—Dr. Francis G. Dubose will remodel the old parsonage of the First Baptist Church, Selma, as a sanatorium to replace the Vaughan Memorial Hospital which was destroyed by fire, January 5. The reconstruction of the building is estimated to cost \$12,000.

Personal.—Drs. R. F. Lovelady and William W. Long, Birmingham, have been elected directors of the American Health and Accident Insurance Company.—Dr. William M. Jordan, Birmingham, who has been under treatment in Johns Hopkins Hospital, Baltimore, has returned home.—Dr. Carney G. Laslie has been elected health officer of Montgomery, vice Dr. Rufus L. Milligan, resigned.—Dr. William Y. White has been appointed health officer of Anniston, vice Dr. Thomas J. Brothers.—Dr. Thomas G. Howard, Selma, has been elected health officer of Dallas County.

ARKANSAS

Personal.—Drs. Early E. Scott, Magazine; James J. Smith, Paris, and William F. Paskerville, Booneville, have been appointed members of the board of health of Logan County.

State Society Meeting.—The thirty-fifth annual session of the Arkansas Medical Society will be held at Fort Smith, May 2-5. The society will be guests of the Sebastian County Medical Society.

Advises Removal of State Hospital.—The committee appointed some time ago by the Board of Trustees of the State Charitable Institutions to investigate the feasibility of the removal of the State Hospital for Nervous Diseases, reported favorably on the proposition, and the report has been approved by the board. It was the unanimous sentiment of the board that the hospital should not be removed from Little Rock, and a committee was appointed to seek an available site for the institution.

CALIFORNIA

Tuberculosis Society to Incorporate.—At the annual meeting of the San Francisco Association for the Study and Prevention of Tuberculosis, held January 31, the election of officers and directors was deferred until February 23, when it was voted to hold an adjourned meeting, that time might be given to discussion of articles of incorporation, etc.

Personal.—Dr. Thomas A. Stoddard, health officer, and Drs. Samuel B. P. Knox and David A. Conrad, members of the board of health of Santa Barbara, have resigned.—Dr. Emma K. Willits, San Francisco, was seriously injured, February 3, by a collision between her automobile and another machine.—Dr. William H. Stokes has been appointed a member of the board of health of Whittier.—Dr. Charles L. King, Pasadena, who was injured in an automobile accident recently, is reported to be convalescent.—Rea N. Smith, Los Angeles, who was sued for malpractice, won the verdict, February 7.

GEORGIA

New City Hospital Started.—At a mass meeting, held in Augusta in the interest of the medical college and a greater city hospital, more than \$14,500 was subscribed, making the total amount pledged now \$25,200.

Physician Seeks Runaway Son.—Dr. Andrew J. Mann, Alva, fearing that his son, William Worcester Mann, has run away, will greatly appreciate any information that may lead to his return. Dr. Mann may be reached at Alva by Bell telephone, collect, and at Haralson by telegraph, collect. The description is as follows: age, 16½ years; height, 5½ feet; weight, 150 pounds; broad shoulders and hips; brunette complexion; dark-brown, sharp eyes; dark-brown, curly hair; low bass voice; fine set of even teeth; hat, No. 7; shoes, No. 8; French twilled worsted, dark-blue suit; patent leather slippers; scar across toes of right foot.

Hookworm Conference.—The Rockefeller Commission held a conference in Atlanta, February 14-16, at which the field agents of the commission organized for the destruction of the hookworm, and planned a campaign to be waged against the pest. Investigations in Georgia disclose the fact that in 138 out of 145 counties in the state, hookworm has been found, while in the remaining 7 counties, investigation has not been carried far enough to make a full report. Reports were made to the conference on the prevalence of hookworm in the northern states as well as in the south. A uniform system of making reports and records was adopted.

ILLINOIS

Small-Pox in State Hospital.—Three patients of the Elgin State Hospital are confined in the hospital infirmary suffering from what is said to be a mild form of small-pox.

Local Medical Society Elects.—The Alton Medical Society has elected Dr. J. A. Cook, president; Dr. J. Bernard Hastings, secretary, and Dr. Waldo Fisher, treasurer.

Fined for Distributing Nostrum.—B. J. Crowe is said to have been fined \$5 and costs, amounting in all to \$9.25, in Freeport, February 14, for violating the section of the city ordinance which prohibits the promiscuous distributing of "patent medicines."

The Fight Against Tuberculosis.—Nearly \$13,000 will be available for the antituberculosis work in Illinois during the present year as the result of the Red Cross Christmas Seal campaign. The total number of seals sold in Illinois was 1,652,869.

Popular Medical Lectures.—The physicians of Alton, with the indorsement of the Alton and Madison County Medical societies, have undertaken a series of lectures on medical subjects to be given every two weeks for school children and their parents. The following will be the program of the lectures:

February 19.—"Infectious Diseases: Invasion, Attack, How Controlled." Dr. James M. Pfeifferberger.

March 3.—"Tuberculosis; Prevention and Care of Disease." Dr. J. Bernard Hastings.

March 17.—"Diseases of Eye." Dr. Fred W. Jones.

March 31.—"Diseases of Nose and Throat." Dr. George E. Wilkinson.

April 7.—"Fresh Air and Exercise." Dr. N. Garland Taphorn.

April 21.—"Sick Room Management." Dr. Homer W. Davis.

May 5.—"Mental Defects." Dr. William H. C. Smith, Godfrey.

May 19.—"Care and Feeding of Babies." Dr. Frederick C. Joesting.

May 29.—"Care of Teeth." R. E. Cockerell, D.D.S.

Chicago

Dispensary Opened.—The Iroquois Memorial Dispensary opened for its first clinic for tuberculosis patients, February 21. The clinic was in charge of Dr. Clarence L. Wheaton.

Take Interest in Mayoralty Campaign.—More than 200 physicians have formed a Charles E. Merriam Club and elected the following officers: president, Dr. John M. Dodson; vice-presidents, Drs. Homer V. Halbert, Isaac N. Dausforth, Albert J. Ochsner and James E. Stubbs; secretary, Dr. Ludvig Hektoen, and treasurer, Dr. Winfield S. Harpole.

Tuberculosis Hospital Staff Named.—The president of the county board announced, February 14, the following attending staff for the Tuberculosis Hospital located on the county hospital grounds: chief of staff, Dr. Clarence W. Leigh, and members, Drs. Thomas A. Hogau, Clyde D. Pense, Frederick Tice, Arthur M. Corwin, Milton Mandel and George B. Dyche.

Benefited by Charity Ball.—The final report of the chairman of the committee which had in charge the Charity Ball, shows that \$26,599.08 is the net sum to be distributed. Of this the Children's Memorial and Presbyterian hospitals each receive \$5,500, the Alexian Brothers', Chicago Lying-In, The Passavant Memorial, and Provident hospitals, and the visiting Nurses' Association, each \$2,250, and the German Hospital, \$1,000.

INDIANA

Pettigrew Discharged.—Charles G. Pettigrew, Logansport, whose license was revoked by the State Board of Medical Examiners, and who was arrested on the charge of practicing medicine without a license, was discharged as he proved that he had turned over all his business to licensed practitioners.

New Cottage for Camp Colony.—As the result of the efforts of the South Bend Antituberculosis League, the local colony is to be benefited by at least two new cottages, funds for which have been appropriated by the state committee of the American National Red Cross. The following is the newly elected medical staff of the league: chairman, Dr. Edwin J. Lent; superintendent, Dr. W. H. Hillmann, and Drs. Charles E. Hansel, Roscoe L. Sensenich, Hugh M. Miller, Walter H. Baker, and Charles S. Bosenbury.

Personal.—Dr. William G. Ralston, Evansville, celebrated his ninety-second birthday anniversary, February 13.—Dr. Homer H. Elmore, Brown Valley, was ordained as a clergyman of the Baptist Church, February 2.—Dr. Alfred Henry has been appointed chief of the Indianapolis Free Tuberculosis Clinic, vice Dr. Jewett V. Reed, resigned.—Dr. Charles L. Dreese, Goshen, is reported to be seriously ill.—Dr. Samuel E. Smith, medical superintendent of the Eastern Indiana Hospital for the Insane, East Haven, Richmond, has

been appointed chairman of the executive committee of the Twentieth Indiana State Conference of Charities and Corrections.

IOWA

Personal.—Dr. Frederick G. Ellis, of the staff of Mount Pleasant Hospital, has resigned.—Dr. and Mrs. J. W. Griffin, Manson, have returned from Germany.

Appropriation Asked for Epileptic Hospital.—The bill of the State Board of Control, asking for an appropriation of \$200,000 for a state epileptic hospital has been presented in the senate by Senator Jewell.

Society Meetings.—The physicians of the southern part of Page County, met at Coin, completed the organization of the Page County Medical Protective Association, and elected Dr. Allen H. King, Coin, president; Dr. Robert W. Blanchard, vice-president; Dr. William G. Johnson, Coin, secretary, and Dr. John R. Thompson, Northboro, treasurer.—At the annual meeting of the Waterloo Medical Society, Dr. J. Q. A. Scroggy was elected president; Dr. W. M. Sterling, vice-president; Dr. Joseph R. Allen, secretary, and Dr. DeWitt C. Hunton, censor.

KANSAS

Personal.—Dr. Owen G. Hutchinson has been appointed physician of Wichita and of Sedgwick County.—Dr. Charles W. Ewing, Wellsville, announces that he is about to cease practice.

Sanatorium Recommended.—The senate in committee of the whole, February 3, recommended for passage the bill of Senator Milligan, providing for the establishment of a sanatorium for tuberculosis patients at some point in western Kansas to be selected by the State Board of Control. The bill carries an appropriation of \$25,000 for the establishment of the sanatorium, and is approved by the State Board of Health.

LOUISIANA

Society Moves to Its New Home.—The Orleans Parish Medical Society has occupied the new building recently erected for it on the corner of Elk Place and Gasquet Street, at a cost of \$15,000. The lower floor contains the office of the secretary, the library and reading room, and on the floor above is the assembly room with a seating capacity of 200.

Sanitation of Barber Shops.—At a meeting of the state Board of Health, January 20, an ordinance was adopted providing that owners of barber shops shall register their names and place of business not later than July 1, that they must keep hot and cold water, must sterilize their instruments after shaving each person, and prohibiting barbers from treating any person for skin disease, or from shaving any person with skin disease unless the individual furnish his own razor, brush and mug.

MARYLAND

Personal.—Dr. Harry M. Bowen, Aquasco, has been appointed a member of the Board of Commissioners of Prince George County.—Dr. Arthur L. Wright, pathologist to the Maryland Hospital for Insane, near Catonsville, has resigned to accept a position on the medical staff of the Baltimore and Ohio railroad.

Baltimore

Leprosy in Baltimore.—The diagnosis of leprosy is said to have been made in the case of a Chinaman held for observation at the Baltimore Quarantine. The patient is a carpenter on the British Steamer *Eskdale*, which arrived at Baltimore from Liverpool, via Huelva, February 2.

Interest in Health Conference.—Great interest was displayed in the public health conference last week under the auspices of the Medical and Chirurgical Faculty of Maryland. Sessions were well attended and many were crowded, the exhibits also attracting large numbers of people. Among the chief subjects discussed were dress, house, milk, training of children, care of the feeble-minded, etc. As the meetings were so successful, and the public so eager for information, it is proposed to repeat the meetings annually.

Personal.—Dr. Samuel C. Chew was reelected president, and Dr. Henry Barton Jacobs, member of the board of trustees of the Peabody Institute, at a meeting February 13.—Dr. Duncan McCalman was thrown from his automobile in a collision, February 16, sustaining injuries to the back and eye.—Dr. George W. Mahle has been compelled to abandon the practice of medicine on account of ill health.—Dr. Howard J. Mardies has been made lecturer on pathology and bacteriology in the Department of Dentistry of the University of Maryland.—Dr. John C. Hemmeyer made an address at the annual meeting

of the Pennsylvania Branch of the University of Maryland Alumni at their meeting in Harrisburg, February 23.—In a recent suit, Dr. George W. Dobbin has been awarded \$3,800 for damages received in a collision of automobiles.

MICHIGAN

Dinner to Dr. Connor.—A dinner was given by the medical friends of Dr. Leartus Connor at the Detroit Club, February 23, in commemoration of the fortieth year of his entrance into practice. The committee in charge consisted of Drs. Justin E. Emerson, Andrew P. Biddle, Arthur D. Holmes, George E. Frothingham, and Benjamin R. Schenck.

MINNESOTA

Society Organized.—The Minnesota Academy of Ophthalmology and Oto-Laryngology was organized in Minneapolis, February 8. The following officers were elected: president, Dr. Howard McI. Morton, Minneapolis; vice-presidents, Drs. Jehiel W. Chamberlin and John F. Fulton, St. Paul, and secretary-treasurer, Dr. Elmer H. Parker, Minneapolis.

Reorganization of State Board of Examiners.—A partial reorganization of the State Board of Medical Examiners was announced by the governor February 16. The new members are as follows: Dr. Frank R. Weiser, Windom, Cottonwood County, to succeed Dr. Thomas Lowe, Pipestone; Dr. Hannah Hurd, Minneapolis, to succeed Dr. Margaret Koch; and Dr. Robert D. Matchan, Hennepin County, to succeed Dr. Frederick A. Knights, Minneapolis, the terms of all to expire January, 1914.—Anton Taylor has been appointed a member of the State Board of Osteopathic Examiners, vice G. L. Huntington.

Personal.—At the annual meeting of the Minnesota Association for the Prevention and Relief of Tuberculosis, Dr. Harry A. Tomlinson, St. Peter, was elected president; Dr. Warren L. Beebe, St. Cloud, as vice-president; and Dr. Henry L. Taylor, St. Paul, secretary.—The offices of Dr. Frank R. Weiser and Dr. Abanson, Windom, were totally destroyed by fire, February 2.—Dr. Edward M. Gans, formerly surgeon in-charge of More Hospital, Eveleth, has resigned and expects to remove to Dickinson, N. D.—Dr. Pane B. Cook has been appointed assistant health commissioner of St. Paul.—Dr. Francis R. Woodard, Minneapolis, has been elected chief, and Dr. Willard B. Pineo, secretary of the staff of Asbury Hospital, Minneapolis.—Dr. Walter J. Mareley, superintendent of the State Tuberculosis Sanatorium, Walker, has been appointed secretary and executive agent of the State Tuberculosis Commission.

MISSOURI

St. Louis

Transfer of Insane Patients.—Arrangements have been made for a special train to bring to St. Louis insane patients who are charges of St. Louis, and who have been temporarily housed at the state hospitals at Fulton and Farmington.

Hospital to be Renamed.—A bill formally to change the name of Quarantine Hospital to Robert Koch Hospital was introduced before the municipal assembly, February 10, at the instance of the hospital board. The institution is now being used for the care of cases of tuberculosis.

NEW YORK

Antivaccination Bill.—Among the bills recently introduced into the legislature is one by Assemblyman Boylan providing that unvaccinated children may be admitted to the public schools on certificates of a physician that their physical condition is such that vaccination would jeopardize their health, or on written declaration from their parent or guardians stating that they are conscientiously opposed to vaccination.

Opens Crusade Against Insanity.—The State Charities Aid Association has issued its first pamphlet on insanity, in which it is stated that one-sixth of the total expenditures of the state is for the insane. The amount spent is equal to an annual tax of 70 cents on every man, woman and child in the state. The preventable causes of insanity—immoral living, alcohol and other poisons, physical diseases and mental habits—are enumerated and the belief is stated that insanity cannot be inherited and that only a tendency may be transmitted. A wider knowledge of the causes of insanity is recommended as one of the most effective means of combating it.

Wiley and Cabot in Buffalo.—Dr. Harvey W. Wiley, chief of the Bureau of Chemistry of the Department of Agriculture, Washington, D. C., delivered a lecture recently before the Buffalo Academy of Medicine, Medical Society of the County

of Erie, Western New York Section of the American Chemical Society, and the Erie County Pharmaceutical Association on "Public Health Our Greatest Asset." A visit was paid to Niagara Falls and the various chemical industries there, and a dinner was given in honor of Dr. Wiley.—Dr. Richard C. Cabot, Boston, recently delivered a lecture before the Buffalo Branch of the American Prophylaxis Society on "Training of the Affections."

New York City

Receipts from Charity Ball.—The financial results of the German Charity Ball were \$11,000, which has been distributed as follows: German Hospital and Dispensary, \$2,000; St. Mark's Hospital, \$1,300; St. Francis' Hospital, \$1,300; German Polyclinic, \$1,300; Isabella Home, \$1,000; German Dispensary of the West Side, \$900; German Ladies' Aid Society, \$900 and Wartburg Orphan Asylum, \$1,000.

New Building at Sloane Hospital.—To provide for the enlarged scope of the work at the Sloane Hospital for Women a new building for gynecologic cases has been erected. This will be open for inspection Wednesday, March 1, from 2 until 6 o'clock. The original name of the hospital, the Sloane Maternity Hospital, was changed in December, 1910, to the Sloane Hospital for Women, in order to correspond with the extended character of the work. The hospital is located at the corner of Fifty-Ninth Street and Tenth Avenue, the entrance being on Tenth Avenue.

Psychoanalytic Society Organized.—The New York Psychoanalytic Society was organized at a meeting, held February 12. The object of the society is the study of abnormal psychology, advancement of psychoanalysis, and to promote fellowship among psychopathologists. Meetings are to be held on the fourth Tuesday of each month. The society will be incorporated and become affiliated with the parent organization in Zurich, Switzerland. The following officers have been elected: president, Dr. Abraham A. Brill, New York City; vice-president, Dr. Bromislaw Onuf, Amityville, L. I.; and secretary-treasurer, Dr. Horace W. Frink, New York City.

OHIO

Diphtheria Carriers.—"Diphtheria Ernest," a boy of 7, has been found in a Cleveland school, after having infected nineteen other children in the course of several months. The boy is said to be perfectly well, and never to have contracted diphtheria. Throat cultures of 75 other children of the school showed two other diphtheria carriers.

Personal.—Dr. Frank Pennoek, Marlboro, whose right arm was amputated at the shoulder at Ingleside Hospital, Canton, February 14, on account of septicemia due to an operation wound, is reported to be improving.—Dr. George W. Crile has been appointed chief of the visiting surgical staff of Lakeside Hospital, Cleveland.—Dr. Ross V. Diekey, Lima, is reported to be critically ill at his home as the result of cerebral hemorrhage.—Drs. William T. Howard and William T. Corlett, Cleveland, have started for Europe.—Dr. Samuel W. Kelley, Cleveland, is taking a trip to the Bermudas.—Dr. Charles E. Briggs has been appointed visiting surgeon and head of the surgical dispensary, and Dr. Harvey A. Becker, visiting surgeon to Lakeside Hospital, Cleveland.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Aloysius J. Kelly, who has been quite ill for some time, is improving.—Dr. Charles Lincoln Furbush sailed for Europe, February 18.—Dr. S. Weir Mitchell celebrated the 51st anniversary of his birth on February 15.—Dr. Brooke M. Anspach has been made visiting surgeon to the Gynceean Hospital.

Gifts to the College of Physicians.—After the scientific program, at the session of the College of Physicians, February 1, Dr. Robert Abbe, New York City, presented to the college the gold watch of Benjamin Rush, and Dr. William W. Keen, on behalf of the donors, presented to the college a portrait of Dr. William Goodell, the noted gynecologist.

Millions Needed to Relieve Blockley.—Mayor Reyburn hopes to secure from the present legislature nearly \$1,000,000 for the beginning of several charitable projects: \$350,000 for a general clinical building at the Philadelphia Hospital, and \$250,000 for half the cost of a building for feeble-minded women and children. These bills were introduced simultaneously in the house and senate February 15.

University Students to Aid Grenfell.—Students of the University of Pennsylvania are making plans to send a delegation to help Sir Wilfred T. Grenfell in his medical mis-

sionary work among the deep sea fishermen of Labrador. Louis F. Fallon, a sophomore, is in charge of the movement and he is collecting money for the building of a \$1,000 launch to be called the *Pennsylvania* and to be used in cruising along the Labrador coast in the service of Dr. Grenfell.

Report of the Milk Commission.—The report of the commission appointed by Mayor Reyburn to investigate the city's milk supply and recommend measures to place it on a sanitary basis profitable to the producer and acceptable to the consumer, was presented to the mayor by Dr. Charles Furbush, chairman of the commission, on February 16. The commission recommended a state-wide inspection of the milk supply by the city authorities in connection with the State Live Stock Sanitary Board; the establishment of a department of milk supervision with a chief supervisor and thirty-five inspectors in the country and thirty-two in the city; an increase in the price of milk of 1 cent a quart to the consumer; a minimum all-year-round price of 5 cents a quart to be paid to the producer; inspection of restaurants, ice cream manufactories, drug stores and all places where milk is sold; establishment by the city of pasteurizing plants.

SOUTH DAKOTA

Auxiliary to State Association Organized.—The wives of members of the South Dakota State Medical Association met at Hot Springs last fall, and formed a woman's auxiliary to the South Dakota State Medical Association; the object being purely social and for the exchange of ideas. The next meeting of the auxiliary will be held in Pierre in June. Mrs. Rudolph D. Jennings, Hot Springs, is president; Mrs. Silas M. Hohf, Yankton, vice-president; Mrs. Harry T. Kenney, Pierre, secretary; and Mrs. Charles S. O'Toole, Vienna, treasurer.

Sanatorium Completed.—The State Tuberculosis Sanatorium, Custer, has been completed by the contractor and is ready to be turned over to the state. Three buildings have been erected, one for the superintendent's residence, the second, a cottage to be used as a dining room and kitchen, with a laundry in the basement, and offices for medical staff, and the third containing sleeping rooms, parlor and library. The board of control will, it is reported, ask for a further appropriation by the state of \$54,000 for another building, and \$50,000 for maintenance of the institution.

WISCONSIN

Personal.—Dr. Frank R. Weston, LaCrosse, has been appointed medical examiner of the local pension board.—Dr. Arthur W. Rogers has been elected president of the Oconomowoc Health Resort.

State Board Election.—At the annual meeting of the State Board of Health in Madison, January 27, Dr. William F. Whyte, Watertown, was reelected president, and Dr. Cornelius A. Harper, Madison, secretary. The board extended the order against common drinking-cups to all public buildings.

GENERAL NEWS

Research Fellowship.—The accumulated income of the Corinna Borden Keen Research Fellowship of the Jefferson Medical College, Philadelphia, now amounts to \$1,000. The fellowship will be awarded by the trustees on recommendation of the faculty to a graduate of Jefferson of not less than one nor more than ten years' standing, on the condition that he spend at least one year in Europe, America, or elsewhere, wherever he can obtain the best facilities for research in the line of work which he shall select after consultation with the faculty, and that he shall publish at least one paper, embodying the results of the work as the "Corinna Borden Keen Research Fellow of the Jefferson Medical College." Applications should be made to Dr. James W. Holland, dean of the college.

The German Hospital of New York.—On the occasion of its fortieth anniversary the governing board of the German Hospital of New York has published a very complete history of the hospital. Those connected with this institution may well be proud of its growth and activities. Accompanying this pamphlet is a *Festschrift* of 593 pages containing contributions by the medical staff of the hospital and its dispensary. These papers are credited to the various services, fourteen to the medical, thirteen to the surgical, five to the gynecologic, four to the ophthalmologic, five to the dermatologic and venereal, and the remainder to the neurologic, ear, nose and throat, dental and laboratory departments, fifty in all. The material comprises the results of observations made on patients and experimental studies in the laboratory and is a valuable addition to medical literature.

FOREIGN NEWS

Bequest by Physician to Found Asylum.—A Spanish physician, Señor Don J. Garcia, who recently died at Valencia, left part of his fortune to found an asylum there for deaf-mutes and the blind.

Statue to Albarran.—The town of Sagua la Grande in Cuba has recently erected a marble statue of "its most illustrious son," Professor Joaquin Albarran, chief of the clinic at Paris for disease of the urinary apparatus. He succeeded Guyon in this much-coveted post in 1906. The statue was erected by popular, nation-wide subscription; a memorial tablet was also placed on the house where he was born.

Fine for Methyl Alcohol Adulteration of Brandy.—Last year a number of serious cases of poisoning at Budapest were traced to the use of a special make of brandy. Investigation revealed that methyl alcohol had been used in its production and was evidently responsible for the poisoning. The distiller was recently sentenced to pay a fine of \$2,800 for involuntary homicide resulting from neglect of due caution.

Honor for Professor Schwalbe.—The honorary title of Geheimer Sanitätsrat has been conferred on Professor J. Schwalbe of Berlin, editor of the *Deutsche medizinische Wochenschrift*, of the medical directory for Germany, of a year-book and of several manuals and treatises. Professor Schwalbe, although only 49 years old at present, has long taken a leading part in all matters affecting the welfare of the profession and especially in the propaganda for reform of nostrum abuses.

Deaths in the Profession Abroad.—In addition to the deaths reported by our correspondents, the profession has lost recently Professor G. Profeta of Florence, one of the leading dermatologists of Italy until his retirement a few years ago, author of several manuals on dermatology and syphilis but best known by his assertion that a non-syphilitic child born of syphilitic parents is immune—the so-called Profeta's law.—T. Noriega, professor of pathology and history of medicine at Mexico.—Prof. J. M. Bandera, a prominent ophthalmologist and leader in medical affairs in Mexico, and member of various ophthalmologic and medicolegal societies at home and abroad, aged 73.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 11, 1911.

A Revolution in Bread

A remarkable agitation in favor of more nutritious bread than the ordinary white bread which is almost exclusively eaten by all classes has produced an immense change in the bread supplied by bakers. White bread, introduced as a luxury for the rich, has been adopted by all classes. In order to obtain the more attractive white appearance valuable ingredients contained in the germ and inner husk of the wheat and consisting of protein and salts are removed. Prominent among the evils attributed to the consumption of white bread is dental caries, which is so prevalent and severe that it may be described as a national disaster. In the presence of this great evil of removing from the most important food some of its most valuable ingredients, the medical profession has been very supine. From time to time an occasional article has appeared in medical journals pointing out the defects of white bread, but it has had no more effect than the periodical wail on the abandonment of blood-letting. The only persons who have shown themselves alive to the situation are the vegetarians, who in renouncing most animal foods have shown a keen desire to get as much as possible out of their vegetable food; they have always consumed whole-meal bread. But outside their own sect they have no influence. One association, the "Bread and Food Reform League," somewhat allied to the vegetarians, has for years made praiseworthy attempts to advocate the use of whole-meal bread and has pointed out that much of the underfeeding of the poor is due to ignorance of the value of this bread rather than to want of means. But their words have fallen on deaf ears and it is very difficult to obtain a good whole-meal bread. The bakers sell an inferior article, a brown loaf which is made from a mixture of ordinary white flour with a little bran. In the lay press an agitation in favor of the old cream-colored loaf which is termed "standard bread," and defined as "bread made from unadulterated wheat and containing at least 80 per cent of the whole wheat, including the germ and semolina," has produced such an effect in a few days that the result must be described not as a reform in but as a revolution in bread. Prominent physicians and health officers are supporting the movement. It is pro-

posed to introduce a bill into parliament for the standardization of bread and the proposal has received the support of members of all parties.

Great Increase of Street Accidents Due to Motor Traffic

An alarming increase in the number of street accidents from the recent development of motor traffic is shown by the report issued by the Highways Protection League. In 1905, thirty-five persons were killed and 1,557 injured by accidents due to motor traffic, while 118 were killed and 6,323 injured by horse traffic. In 1909, 163 persons were killed and 6,579 were injured by motor traffic, while 123 were killed and 5,589 were injured by horse traffic.

Daring Experiment of a Physician on Himself with Typhoid Bacilli

Dr. Houston, director of water examination to the Metropolitan Water Board, has made a daring experiment on himself with typhoid bacilli. He was testing the effect of river water on the vitality of typhoid bacilli which had never been sub-cultured. He found that the bacilli rapidly perished in Thames water. Although well satisfied with the negative results, he put the matter to the crucial test of drinking half a pint of the infected water (which contained initially 218 million typhoid bacilli) on the twenty-fourth day from the start of the experiment without any ill result. In the discussion which followed the reading of this report, Dr. R. M. Beaton, chairman of the water examination committee, suggested that as the punishment of hanging was a rude practice experiments of this kind should be made with condemned criminals.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 3, 1911.

Antityphoid Vaccination

During the discussion on the etiology and prophylaxis of typhoid fever last year at the Académie de médecine, on motion of Professor Chantemesse, a commission was appointed to study antityphoid vaccination (THE JOURNAL, March 5, 1910, p. 804). Dr. H. Vincent, for the commission, has just laid before the academy a report to the following effect: The facultative use of antityphoid vaccination should be recommended as a practical and rational means of diminishing the frequency and gravity of typhoid fever in France and in the colonies. This recommendation is addressed to all whose profession, usual or accidental conditions of food or habitat, daily or frequent relation with persons or bacillus carriers, expose them to direct or indirect contagion. This proposition brought forth vigorous protests from Dr. Delorme, *médecin inspecteur général* of the army, who considers the conclusion of the commission as premature and overdrawn. While recognizing that antityphoid vaccination is, at present, of interest to scientific and administrative circles, Dr. Delorme believes that in view of the well-known imperfections of the method (incomplete immunization, negative phase, local and general complications, numerous contra-indications) the Académie de médecine, the counselor of the public authorities, is scarcely authorized to recommend the employment, even facultative, of methods which are still so uncertain, imperfect and cumbered with so many disadvantages and even dangers.

The Health Resorts and Spas of France

A parliamentary group has recently been formed to promote the interests of the thermal and climatic stations of France. It already comprises more than 100 senators and deputies. Its program includes: (1) investigation into the means to give the greatest effect to the law taxing transients at such resorts, passed in 1910 (THE JOURNAL, April 23, 1910, p. 1388); (2) creation of a chair of hydrology and climatology at the Faculté de médecine de Paris; (3) creation of a great institute of hydrology and climatology which shall centralize all the chemical, physical, geologic and mineralogic researches needed by our stations to extend their usefulness and to complete the instruction of young physicians who wish to specialize in hydrology and climatology.

The law imposing a tax on visitors will furnish important revenues for the improvement of the hygiene of the stations, and their embellishment, etc. The creation of a chair of hydrology and climatology at the Faculté de médecine de Paris has been demanded for twenty years by all the congresses on hydrology and by associations of physicians interested in the subject. The innovation will have the greater chance of success because it will cost the government nothing, since the

Syndicat des stations thermales de France, which is directly interested in the question, has undertaken to provide the expense of the chair. The only condition imposed by the *syndicat* on its gift is that the professor appointed shall be competent, and shall promise to regard the position as permanent, not as a temporary makeshift.

Measures Against the Propaganda for the Prevention of Conception

The criminal court of the Seine has just condemned a certain Lip Tay, who has two advertisements with reference to the prevention of conception in a catalogue of special publications. Lip Tay's defense was that he was simply popularizing medical information. The court, however, did not sustain his plea and condemned him to pay \$40 fine (200 francs) on the ground that this propaganda was an offense against morals. This decision will tend to arrest the propaganda.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 2, 1911.

Personal

Professor Ehrlich is the only medical trustee on the board of the newly founded Kaiser Wilhelm Society for Scientific Research (Gesellschaft für Förderung der Wissenschaften), half of whose members are elected by the society and the other half appointed by the Kaiser.

Professor Roentgen of Munich, Professor Hering of Leipsie, and Professor Retzius of Stockholm have received membership in the order of science and arts (Orden pour le Mérite der Wissenschaften und Künste), one of the few among the numerous Prussian orders which is bestowed only for actual achievement.

Professor Bier, director of the surgical clinic at Berlin, has been elected a foreign member of the Belgian academy of sciences.

Honorary Title for the Kaiser

The promotion of the Kaiser to the honorary title of Doctor by the Prague medical faculty will take place soon in the throne room of the palace in Berlin. The rector of the Prague German university, the present dean of the medical faculty, Professor v. Jaksch and Professor Hering will come to Berlin to officiate.

Multiple Offices for Physicians

In Berlin and probably also in other large cities of Germany it has been for some time the custom for a number of specialists to have offices for private patients in two places in the city, one in their private residence and one in their private clinic or the polielinic. The first is usually in the fashionable western part of the city and the latter in the center or in the outskirts. The reason for this condition is that the central part of Berlin, like London and New York, is gradually being given up more and more to business, for which reason the larger part of patients able to pay have migrated to the west and the physicians follow them but keep their office down town for the patients who still remain in that locality. As other physicians are injured by this doubling of offices there have been complaints made against this custom in the medical press and in the medical societies. As a result the business committee of the Berlin Medical Society, a short time ago, took up the question and made the following decision:

1. Polielinies in their essence and their historical development are institutions for the gratuitous treatment of the section of the public which is unable to pay. In addition to this humanitarian purpose they should serve the scientific and technical education of the physicians in charge, their assistants and other physicians. The gratuitous treatment of members of the Krankenkassen in the polielinies, dispensaries and the offices of the insurance physicians, has led, under the influence of the social legislation, to a deviation from the principal aim of gratuitous treatment. A further conversion of the polielinic and similar institutions into additional offices in which private patients are treated for pay, is as a whole contrary to the interests of special practice and of the medical profession.

2. The need for several offices for a physician doing a general practice does not exist to an extent to justify a deviation from the method in which medical practice has hitherto been carried on.

3. The decision as to whether in individual cases the maintenance of several offices for pay patients is permissible or not belongs only to the state medical court of honor.

Athletics at the Berlin University

The senate of the Berlin university has now acceded to a long-cherished wish of the university circles interested in gymnastics and sport by appointing, on motion of the university turner society, an academic committee which is to be the highest authority on all questions which concern physical exercise. The committee consists of the rector, Professor Rubner, Professor Waldeyer, Professor N. du Bois-Reymond, and others. The Berlin university in adopting this thoroughly modern arrangement which gives expression to the idea that the university should care not alone for the intellectual but also for the physical education of its youth is following the example of Breslau and Marburg. It now will be the task of the student body to show an interest in the matter corresponding to that of the authorities.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 3, 1911.

Expenditures for the Medical Schools

The ordinary budget for medical teaching in Austria has a few days ago been finally fixed, and the figures are now published. For this purpose 6,000,000 kronen (\$1,200,000) will be spent. Of this sum, Vienna receives 2,154,000 kronen (\$430,800); Graz requires only 625,000 kronen (\$125,000); Innsbruck 453,000 kronen; Prague, which has two medical schools, a German and a Slavic one, requires for each about 740,000 kronen or \$150,000. Besides there are two Polish medical schools, one in Lemberg, requiring 480,000 kronen or \$96,000, and one in Cracow, which receives \$150,000. These sums cover only the ordinary expenditure; the sum of \$50,000 is devoted to extraordinary expenses. Apart from these figures, the fees and salaries for special subventions and rewards amount to another \$360,000. There are active at present:

	Vienna.	Prague.	Graz.	Innsbruck.	Lemberg.	Cracow.	Total.
Ordinary professors	25	31	14	15	14	15	114
Extraordinary professors	14	23	4	4	3	8	58
Assistants	86	85	37	31	34	38	311
Second-class assistants	6	6	1	2	0	1	16
	131	147	56	52	51	62	

The rent paid for certain of the medical university buildings amounts to over a million kronen, showing an increase of 15 per cent. since last year. The endowment of the institutions with grants and other sums for teaching material reaches more than double that sum. There are also certain paid lectures not strictly belonging to the medical teaching (photography, physical experimentation) which will cost 50,000 kronen (\$10,000), and a sum of 100,000 kronen (\$20,000) has been set apart for traveling grants (for researches).

The Austrian Antimalaria Campaign 1906-1909

The prevalence of malaria in certain parts of the Austrian coastland has prompted the government to institute a systematic campaign against the spread of this disease there. The official report states that in the first year 5,387 persons were examined, of whom 1,256, or 23 per cent., were found needy of treatment. In 1907, 3,192 persons were examined, 42 per cent. of this number were requiring antimalarial treatment. In one district fully 100 per cent. of the population were infected, while the lowest figure was 12 per cent. According to the instructions, in the endangered zone also persons who were not infected, but exposed to infection, were treated prophylactically. In the year 1909, only 3,351 more persons were examined. Of these, only 7 per cent. were found infected, whilst 1,848 (55 per cent.) received prophylactic treatment. In 1907, the districts examined contained 1,038 infected persons out of a population of 2,497, or 41 per cent., while another 384 persons presented themselves for prophylactic treatment. This was always free of charge, and consisted in administration of quinin sulphate in doses of 5 grains, together with arsenic and iron. From the examined districts, which have been under control since 1903 till 1908, every case of fever had to be reported and then examined for malaria. Out of a population of 18,774, 663 fresh infections were reported in these six years. As the people became persuaded of the benefit obtained from the regular treatment and persistence of control, the patients came in more regularly and finally there was no trouble at all, though at first some difficulty was experienced in inducing the uneducated peasants to submit to medical supervision.

Marriages

MILTON M. SPITZ, M.D., to Miss Belle Landau, both of Milwaukee, Wis., February 7.

J DALLAS CROOM, JR., M.D. Maxton, N. C., to Miss Ruth Roberts of Attalla, Ala., recently.

LAURENCE FRANK KEITH, M.D., to Miss Elsie May Turner, both of Melrose, Mass., February 15.

JOHN C. BULLITT, M.D., to Miss Edna Dever, both of Philadelphia, at Bingham, Mass., recently.

ALONZO J. FITZPORTER, M.D., St. Louis, to Miss Marie Wanda Krebs of Belleville, Ill., February 8.

ALANSON HALDEN JONES, M.D., Los Angeles, to Miss Adele Stookey of Hermosa Beach, Cal., January 31.

GEORGE E. THOMPSON, M.D., Kenosha, Wis., to Mrs. Anna Grun Lindstedt of Manitowoc, Wis., February 2.

WILLIAM SCHNEIDER SHIRK, M.D., Kansas City, Mo., to Miss Mary Gertrude McCourt of McPherson, Kan., at Kansas City, February 2.

Deaths

Joseph Rowe Smith, Brigadier General Medical Corps, U. S. Army, retired, died at the home of his sister in Philadelphia, February 11, from pneumonia, aged 79. He was graduated from the University of Buffalo, N. Y., in 1853, and a year later was commissioned as assistant surgeon in the army; five years later he was promoted to captain, and served in the west and southwest until the outbreak of the Civil War. When on duty at San Antonio, Tex., he was captured by the Confederates; and on being paroled was assigned to the duty of organizing hospitals. In 1862, he received his promotion to major, and at the close of the war was medical director of the Seventh Army Corps, and had been brevetted lieutenant colonel for "superior ability and excellent management of the affairs of the department." He was promoted to lieutenant colonel in 1885, attained his colonelcy in 1890; was retired by operation of law in 1895, and attained the rank of brigadier general, retired, nine years later. His last official duty was as medical director of the Department of the East. He was a member of the American Medical Association for many years, and vice-president in 1877, and was the Army delegate to the Association from 1874 to 1878, inclusive, and from 1882 to 1885, inclusive. He was also a delegate to four international medical congresses. General Smith was the author of a number of standard medical works, bearing particularly on the care and treatment of soldiers. He was one of the incorporators of the New York Post-Graduate Medical School and Hospital, and a member of the Association of Military Surgeons of the United States, American Academy of Medicine and many other medical societies.

Uranus Owen Brackett Wingate, M.D., for several years health commissioner of Milwaukee, and for ten years secretary of the Wisconsin State Board of Health; died at his home in Milwaukee, February 19, from pneumonia, aged 62. He was born in Rochester, N. H., enlisted in the Army at the age of 16 and served throughout the Civil War. He attended three courses of lectures at Harvard Medical School, and Dartmouth Medical School, Hanover, N. H., graduating from the latter institution in 1875. He practiced until 1886 in Haverhill and Wellesley, Mass., and served for five years as a member of the Medical Corps of the Massachusetts Volunteer Militia. In 1886, he moved to Milwaukee, four years later was made health commissioner of the city, and 1894, was appointed secretary of the Wisconsin State Board of Health. He was a member of the American Medical Association, and for several years chairman of the committee on the national department of health; the American Public Health Association, American Psychological Association, and the Milwaukee County Medical Society, of which he was once president. He was professor of diseases of the nervous system and hygiene in the Wisconsin College of Physicians and Surgeons; visiting neurologist to St. Mary's and Milwaukee County Hospitals, and consulting neurologist to St. Joseph's Hospital. He contributed many articles on subjects connected with his specialties, to the medical literature.

Horace Wilbur Patterson, M.D. College of Physicians and Surgeons, New York City, 1895; a member of the Medical Society of the State of New York; and for five years secretary of the Richmond County Medical Society; chief of the department of communicable diseases of the Department of

Health of Richmond Borough, and pathologist to the S. R. Smith Infirmary; assistant surgeon of the First New Jersey Infantry, U. S. V., during the Spanish-American War, and afterwards captain and assistant surgeon of the First Infantry, N. J. National Guard, and First Lieutenant Medical Reserve Corps, U. S. Army; died in the S. R. Smith Infirmary, February 5, after an operation for cholelithiasis, aged 38.

James Kerr, M.D. Queen's University, Dublin, Ire., 1870; a member of the Medical Association of the District of Columbia; professor of surgery in Georgetown University, and a member of the surgical staff of Providence and Emergency Hospitals and the Woman's Dispensary; surgeon in the British service during the Ashanti war; later chief surgeon of the Canadian Pacific Railway; surgeon in the Canadian militia; one of the organizers of, and president and professor of surgery in the Manitoba Medical College, Winnipeg; since 1888 a resident of Washington, D. C.; died at his country home near Warrenton, Va., February 2, aged 62.

Samuel David Hopkins, M.D. University of Pennsylvania, Philadelphia, 1893; a member of the American Medical Association, and American Neurological Society; professor of nervous and mental diseases in the Denver College of Medicine and Surgery; president of the staff of St. Joseph's Hospital, and neurologist to Denver County Hospital; a specialist on nervous and mental diseases; died in St. Joseph's Hospital, Denver, February 4, two days after an operation for appendicitis, aged 38. At a special meeting of the City and County of Denver, resolutions were adopted eulogizing the character, work and personality of Dr. Hopkins.

Joseph B. Ward, M.D. Hahnemann Medical College, Philadelphia, 1857; at one time professor in the Homeopathic Medical College of Missouri, St. Louis; assistant surgeon of the Eleventh New York Volunteer Infantry during the Civil War; for two years vice-president of the New Jersey Tuberculosis Commission; chairman of the executive committee of the State Horticultural Society; a member of the executive committee of the State Board of Agriculture; died at his home in Newark, February 3, from heart disease, aged 76.

James Buchanan Walker, M.D. Miami Medical College, Cincinnati, 1882; local surgeon at Effingham, Ill., of the Illinois Central, Vandalia, and Wabash Railways; a member of the surgical staff of St. Anthony's Hospital; a member of the American Medical Association, and Æsculapian Society of the Wabash Valley; and American Association of Life Insurance Examiners; supreme medical examiner of the fraternal order of Modern Americans; died at his home, February 11, from cerebral hemorrhage, aged 54.

Edwin Powell, M.D. Rush Medical College, Chicago, 1857; formerly demonstrator of anatomy and professor of military surgery in his alma mater; surgeon of the Seventy-Second Illinois Volunteer Infantry, and later in charge of the Seventeenth Army Corps Hospital and the McPherson General Hospital during the Civil War; a member of the staff of Cook County Hospital; died at his home near Maryville, Mo., February 13, from influenza, aged 76.

Edwin Gilmore Knill, M.D. University of Toronto, 1882; M.R.C.S., Eng., L.R.C.P., Lond., 1883; L.R.C.S., L.R.C.P., Edin., 1883; a member of the Michigan State Medical Society; adjunct professor of pathology and morbid anatomy, and clinical professor of medicine in the Detroit College of Medicine; a member of the staff of Harper Hospital; died at his home in Detroit, February 10, from cerebral hemorrhage, aged 55.

Columbus Henry, M.D. University of Pennsylvania, Philadelphia, 1871; formerly a member of the Delaware State Medical Society and State Board of Medical Examiners; for many years president of the Board of Trustees of the Poor of Newark, Del., and president of the Board of Trustees of the Newcastle County Hospital; died at his home in Newark, January 14, from hepatic and arteriosclerosis, aged 67.

Frank S. Low, M.D. Castleton (Vt.) Medical College, 1850; once president of the Oswego County Medical Society and vice-president of the Medical Society of the State of New York; consulting physician to the Oswego City Hospital; once sheriff and coroner of Oswego County, N. Y.; a member of the board of education; died at his home in Pulaski, February 3, aged 82.

Reuben Conway Shultz, M.D. New York University, New York City, 1880; a member of the Medical Society of the State of California; for several years a member of the staff of the *New York Medical Journal*, but for the last thirteen years a resident of Los Angeles; died at his home in that city, January 29, from chronic bronchitis, aged 57.

Carter Lurton Broaddus, M.D. Vanderbilt University, Nashville, Tenn., 1892; a member of the Kentucky State Medical Society, and formerly vice-president of the Trigg County (Ky.) Medical Society; for many years a resident of Hopkinsville; died in Lebanon, Tenn., January 11, from cerebral hemorrhage, aged 48.

Riley Allen Atkins, M.D. Medical College of Virginia, Richmond, 1864; a member of the Newport News Medical Society; a sailor in the Confederate navy during the Civil War, detailed to hospital duty; surgeon for the Virginia Railway at Pine Beach; died at his home, January 9, from pneumonia, aged 74.

Walter Howard Snow, M.D. New York University, New York City, 1880; formerly physician to the Society for the Prevention of Cruelty to Children, and instructor in gynecology in the University of the City of New York; died at his home in New Lebanon, N. Y., January 27, from uremia, aged 51.

Joseph Clements, M.D. Kansas City (Mo.) Medical College, 1891; and later clinical instructor on diseases of children in his alma mater; for twenty years a clergyman; a writer on psychology and metaphysics; died at his home in Wichita, Kan., January 31, from valvular heart disease, aged 70.

John Cassilis Cockburn, M.D. Harvard Medical School, 1872; a member of the American Medical Association; once president of the Hennepin County Medical Society; for thirty-one years a practitioner of Minneapolis; died at his home in that city, February 5, from interstitial nephritis, aged 69.

Jane Howell Harris, M.D. Woman's Medical College of the New York Infirmary for Women and Children, 1899; for eight years a medical missionary of the Presbyterian Board in San Juan, Porto Rico; died at her home in Isabela, Porto Rico, Nov. 21, 1910, from pneumonia, aged 38.

William Menger, M.D. New York University, New York City, 1897; of Union Hill, N. J.; while suffering from mental disorder and an inmate of a sanitarium at Paterson, N. J., is said to have cut his throat, January 8, inflicting a wound from which he died soon after, aged 34.

Hubert Pemberton Doak, M.D. University of Nashville, Tenn., 1893; a member of the Tennessee State Medical Association; formerly of Greenville, and secretary of the local pension examining board; died at his home in Tusculum, February 5, from pneumonia, aged 46.

Augustine von Galny, M.D. University of Berlin, Germany, 1847; (license, Eighteenth Judicial District Board, Texas, 1878); surgeon in the Prussian and Danish armies; a member of the State Medical Association of Texas; died at his home in Galveston, February 1, aged 83.

George W. Menees, M.D. Vanderbilt University, Nashville, 1879; a member of the Missouri State Medical Association; health officer of Clinton; died February 7, from the inhalation of fumes of formaldehyd, after disinfecting a house where small-pox had occurred, aged 54.

Joseph Preston Gray, M.D. University of Tennessee, Nashville; a graduate in both medicine and dentistry; a member of the American Medical Association; and of the Nashville Academy of Medicine; died at his home, Sept. 30, 1910, from cerebral hemorrhage, aged 55.

John Warner Kniskern, M.D. Albany (N. Y.) Medical College, 1890; ophthalmic and aural surgeon to the Amsterdam (N. Y.) Hospital; a specialist in diseases of the eye and ear; died at his home in Amsterdam, January 31, from tuberculosis of the throat, aged 43.

Alexander McKlveen McLain, M.D. Western Pennsylvania Medical College, Pittsburg, 1898; of Post Falls, Ida., formerly of Irwin Pa.; for two years a member of the village council; died in Spokane, Wash., January 12, from pernicious anemia, aged 51.

James A. C. Milliken, M.D. Medical School of Maine, Brunswick, 1910; assistant in the Western Washington Hospital for the Insane, Fort Steilacoom; died at his home in New Bedford, Mass., Dec. 29, 1910, from lymphatic leukemia, aged 25.

George Augustus Steinicken, M.D. University of Pennsylvania, Philadelphia, 1890; of New York City; until 1904 a practitioner of Wilmington, Del.; died in Roosevelt Hospital, New York City, Dec. 22, 1910, from pneumonia, aged 45.

Alfred Augustus Hermann, M.D. College of Physicians and Surgeons, Chicago, 1904; of Chicago; a member of the American Medical Association; died in Pasadena, Cal., Nov. 29, 1910, from tuberculosis of the kidney, aged 30.

John Kapp, M.D. University of Michigan, Ann Arbor, 1868; a member of the Michigan State Medical Society; for three

terms mayor of Ann Arbor; died at his home in Los Angeles, January 17, from general breakdown, aged 69.

Benjamin W. Searle, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1873; of Ottumwa, Ia.; a veteran of the Civil War; died in Wesley Hospital, Chicago, February 17, after an operation for appendicitis, aged 69.

Leroy Hall Sibley, M.D. College of Physicians and Surgeons, Chicago, 1903; a member of the Vigo County (Ind.) Medical Society; died at his home in Terre Haute, Sept. 26, 1910, from pulmonary tuberculosis, aged 30.

Leroy W. Heath, M.D. Cleveland University of Medicine and Surgery, 1882; a member of the Medical Society of the State of Pennsylvania; died at his home in Mercer, Pa., January 26, from general paresis, aged 52.

Cyrenius Benjamin Vaughan, M.D. Bellevue Hospital Medical College, 1875; a member of the Medical Society of the State of New York; died at his home in Morrisonville, February 1, from heart disease, aged 64.

Louis deValois Wilder, M.D. Hahnemann Medical College, Philadelphia, 1855; for many years chief surgeon of the Flower Hospital; died at his home in New York City, February 5, from heart disease, aged 93.

James Marshall Tinsley, M.D. University of Louisville, Ky., 1880; formerly of Champaign, Philo and Rantoul, Ill.; died at his home in Mount Vernon, Ill., February 2, from cerebral hemorrhage, aged 61.

Leo J. O'Shaughnessy, M.D. Kansas City (Mo.) Hahnemann Medical College, 1908; was shot and killed in a pistol duel with a brother physician, in his office in Wetumka, Okla., February 3, aged 28.

Richard Maury Cunningham, M.D. Vanderbilt University, Nashville, 1892; for thirty-three years a practitioner of Tennessee; died at his home in Palmyra, Nov. 25, 1910, from pneumonia, aged 74.

Frank H. Fisk, M.D. Albany (N. Y.) Medical College, 1883; a member of the Medical Society of the State of New York; died at his home in West Sand Lake, January 22, from lobar pneumonia, aged 56.

Edward Francis Dodd, M.D. University of Nebraska, Lincoln, 1887; for twenty years a practitioner of Newport, Neb.; died at Fairview, Okla., Dec. 29, 1910, from edema of the glottis, aged 47.

Isaac Francis Coffin, M.D. New York University, New York City, 1885; coroner of Herkimer County, N. Y., in 1900; died at his home in North Ilion, Dec. 23, 1910, from spinal disease, aged 62.

Charles Eugene Arthur Dorval, M.D. Victoria College, Coburg, Ont., 1874; of Montreal; died in the Hôtel Dieu in that city, Dec. 26, 1910, from peritonitis, following a gastric ulcer, aged 58.

Lawrence Ryan, M.D. Dublin (Ire.) Medical College; at one time medical health officer of Edmonton, Alta.; died in Saskatoon, Sask., Nov. 10, 1910, from heart disease complicating typhoid fever.

Alfred Wesley Bear, M.D. Washington University, Baltimore; for nearly forty years a practitioner of Barnard, Mo.; died at his home in that place, January 21, from influenza, aged 69.

Felix Dydine Fontaine, M.D. Laval University, Montreal, 1857; (license, Massachusetts, years of practice, 1894); died at his home in Worcester, January 31, from senile debility, aged 79.

Henry Rutgers Cannon, M.D. New York University, New York City, 1843; first clerk of Union County, N. J.; died at his home in Elizabeth, January 9, from senile debility, aged 89.

Lincoln D. Foreman, M.D. American Medical College, Eclectic, St. Louis, 1884; slipped from a ladder at his home in Peoria, Ill., February 9, and was instantly killed, aged 49.

Seth H. Truesdale, M.D. Western Reserve University, Cleveland, 1876; a veteran of the Civil War; died at his home in Poland, O., February 5, from locomotor ataxia, aged 69.

George W. Ray, M.D. Rush Medical College, 1867; a pioneer practitioner of Joplin, Mo.; died at St. John's Hospital in that city, February 8, from pernicious anemia, aged 68.

George W. Corman, M.D. American Medical College, Eclectic, St. Louis, 1883; of Paris, Ark.; died on a train near Lavaca, Ark., Dec. 15, 1910, from heart disease, aged 54.

Thomas Graham, M.D. Grand Rapids (Mich.) Medical College, 1907; died at his home in St. James, Beaver Island, Mich., January 16, from diabetes, aged 34.

Lawrence Ellsworth Jones, M.D. Howard University, Washington, D. C., 1907; died at his home in Rochester, Pa., Dec. 28, 1910, from acute nephritis, aged 31.

F. C. Woodard, M.D. Louisville (Ky.) Medical College, 1887; a member of the American Medical Association; died at his home in Grapeland, Tex., January 31, aged 63.

James Arthur Metcalfe, M.D. Louisville (Ky.) Medical College, 1873; died at his home in Los Angeles, Cal., January 18, from carcinoma of the leg, aged 58.

Evan Jones, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1876; died at his home in New Cambria, Mo., January 30, from pneumonia, aged 65.

John C. David, M.D. Hahnemann Medical College, Chicago, 1878; died at his home in Sandwich, Ill., February 2, from cancer of the esophagus, aged 62.

J. W. Bartlett (license, Kentucky, thirty-six years of practice, 1893); died at his home in Kirkmansville, February 8, from senile debility, aged 78.

Theodore Rahlfs, M.D. Rush Medical College, 1888; died in his office in Tacoma, Wash., January 23, in an epileptic convulsion, aged about 60.

George Fisk Wilber, M.D. Long Island College Hospital, Brooklyn, 1864; died at his home in Nashua, N. H., January 21, aged 71.

Association News

THE LOS ANGELES SESSION

Arrangements Being Perfected for the Next Annual Session

Readers of THE JOURNAL will be kept informed from week to week concerning the arrangements for the Los Angeles Session. In the last issue, a list of hotels was published, giving the rates, capacities, etc., and a preliminary announcement of the railroad rates; and this week there is given some information about special trains and entertainments.

Entertainments

The Los Angeles Session bids fair to stand out with unusual prominence with respect to the amount and quality of entertaining done by the local profession. The matter is spoken of thus early to encourage members to plan to go to Los Angeles. The occasion will be one of great enjoyment. Some of the entertainments are as follows: On Friday those who have finished their section work will be taken by boat to the famous Catalina Island and given a barbecue. This trip will be duplicated on Saturday for the others in attendance.

Friday will also be called Pasadena Day. Shortly after noon, when all the scientific work will have been completed, there will be an automobile trip to Pasadena with a Spanish barbecue in the Sunken Gardens. This will be followed by chariot races in Tournament Park, especially arranged for the benefit of the members of the American Medical Association. The day will be concluded by trips to the seashore with entertainments at Venice and Ocean Park.

On Saturday those who do not wish to go to Catalina Island may take a trip to San Pedro Harbor and Long Beach with lunch at the Hotel Virginia.

Other trips in the vicinity, for which especial railroad rates will probably be granted, are to the olive orchards of San Fernando, to the orange groves of Riverside and Redlands and to San Diego, the renowned resort some miles down the coast.

Judging from the inquiries received by various committees, the attendance at Los Angeles will probably be larger than a good many prophets anticipated, who were judging solely by the distance of the meeting-place from the center of the United States. The attractiveness of Los Angeles and the opportunity of various trips are two things which will largely tend to counteract the distance. For this reason we repeat the suggestion of last week, given in connection with the list of hotels, and urge those who expect to go to Los Angeles that they reserve hotel accommodations early. There are plenty of hotels, but those who write for accommodations late cannot expect to have their choice of the best rooms.

Announcement of Transportation Committee

In looking over the numerous letters of the members received in response to the request published in THE JOURNAL, Dec. 10, 1910, p. 2078, it is found that a large majority of them are in favor of taking the southern route to Los Angeles in June. The committee therefore announces that it has arranged for a special train from Chicago to Los Angeles over the Santa Fé route. This train, which will be a counterpart of the famous California Limited, will afford every first-class accommodation, standard berths, compartments and drawing-rooms. There will be a fully equipped club car with valet and barber in attendance, dining car and observation car. The club car and observation parlor are supplied with an abundance of the best current magazines and newspapers, a carefully selected library and writing material.

This train will leave Chicago at 8:00 p. m., Wednesday, June 21, and will run in accordance with the following schedule:

TIME SCHEDULE OF SPECIAL TRAIN

Lv. Chicago	8:00 p. m., Wednesday, June 21
Ar. Kansas City.....	9:00 a. m., Thursday, June 22
Lv. Kansas City.....	9:10 a. m., Thursday, June 22
Ar. Albuquerque	11:05 a. m., Friday, June 23
Lv. Albuquerque	12:30 p. m., Friday, June 23
Ar. Laguna	2:30 p. m., Friday, June 23
Lv. Laguna	3:30 p. m., Friday, June 23
Ar. Grand Canyon.....	6:00 a. m., Saturday, June 24
Lv. Grand Canyon.....	10:00 a. m., Sunday, June 25
Ar. Los Angeles.....	7:00 a. m., Monday, June 26

At Albuquerque a stop of one hour and a half will be made in order to afford an opportunity for all to visit the very interesting collection of Indian and Mexican hand work. This is undoubtedly the finest collection of Indian and Mexican work in the world. At Laguna a stop of one hour will be made, affording an opportunity to visit the Pueblo Indian village. These short stops not only break the monotony of the trip but also permit of sight-seeing which cannot be had on any of the regular trains.

A stop of twenty-eight hours will be made at the Grand Canyon. It is unnecessary to dilate on the wonderful beauty of this work of Nature. The time spent here is sufficiently long to permit of descending into the canyon and also of visiting points of interest on the rim. Being there over night also affords an opportunity of seeing the sun rise and set. These sights alone are well worth the trip.

The train will arrive at Los Angeles at 7:00 o'clock Monday morning in time for the delegates to attend the opening meeting of the House of Delegates. For those members who do not care to reach Los Angeles before Monday evening, arrangements will be made whereby cars will be taken via Redlands and Riverside and sufficient time given to visit both these interesting points, reaching Los Angeles about 6:00 p. m.

The round trip fare from Chicago is \$62.50 with an addition of \$6.50 for the Grand Canyon side ride. The Pullman rates are, upper berth \$12.80, lower berth \$16.00, compartment \$45.00, drawing-room \$56.00. These rates include the side trip to the Grand Canyon and also provide for the occupancy of the cars at the Grand Canyon if so desired.

One may return by any direct route, which means by any route going as far north as San Francisco and Ogden. To those who wish to return by any of the northern routes, an additional fare of \$15.00 will be charged. These rates are not available for both going and returning by the northern routes. All those, therefore, who contemplate visiting Yellowstone Park, the Canadian Rockies or other points of interest on the northern routes are cautioned to see that they go by some of the southern routes and arrange for these stop-overs on their return trip. There will be plenty of time to make all of these trips after the meeting on the return passage, as the return limit on the tickets is September 15, but there will not be time to make these extended side trips going.

Announcement of eastern rates and trains will be made later.

M. L. HARRIS, Chicago,
Chairman, Committee on Transportation.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

REPORT OF THE COMMITTEE ON PHYSIOLOGIC ASSAY Of the Philadelphia Branch of the American Pharmaceutical Association *

DR. T. C. GITHENS, DR. C. A. HOFER, DR. JOHN C. SCOTT, and
DR. H. C. WOOD, JR., Chairman

The Committee on Physiologic Assay of the Philadelphia Branch of the American Pharmaceutical Association has considered the advisability of introducing into the Pharmacopeia physiologic tests for the following drugs: apocynum, convallaria, digitalis, squill, strophanthus, aconite, gelsemium, lobelia, veratrum, cannabis, ergot, pepsin, suprarenals, thyroid, chenopodium, granatum, kousso, santonica, cimicifuga, gossypii cortex and phytolacca.

Cimicifuga, gossypii cortex and phytolacca seem of too little importance to require physiologic standardization.

The vermifuges—chenopodium, granatum, kousso and santonica—might, we believe, readily be standardized according to the method which was employed, in connection with the oil of chenopodium, by Brunning,¹ who determined the vermifugal effect on the intestinal worms obtained from the alimentary tract of dogs and cats. Inasmuch, however, as we are unaware of any application of this method for the purpose of standardization and as time was insufficient for experimental work on the part of the committee, we do not feel inclined to recommend the introduction of physiologic tests in connection with these drugs, although we would call the attention of the Committee on Revision of the Pharmacopeia to the possibility of such standardization.

Cannabis.—Two standards have been suggested for cannabis indica. That which is most frequently employed is the amount which is required to produce muscular incoordination in the dog. The other is the amount required to produce narcosis in the frog. As regards the second of these tests, the fact that cannabis indica is practically insoluble in water and that frogs are very susceptible to the action of alcohol seems to us to preclude its use. In regard to the first test, it has been the universal experience that there is a large variation in individual susceptibility in different dogs, so that to obtain results which are even approximately accurate it is necessary to use the same dog repeatedly. The prolonged use of the drug, however, appears to beget a certain amount of immunity toward it, so that one dog can be used for only a comparatively small number of tests. Even with the utmost precautions, the results are far from accurate. As it is impossible, on account of individual idiosyncrasies and the uncertainty of the final reaction, definitely to assign any dose and as the results are so inaccurate, we feel that until some more satisfactory means of standardizing cannabis indica has been suggested, no physiologic assay process should be introduced into the Pharmacopeia.

Ergot.—Another drug which urgently requires some method of standardization is ergot. The cock's-comb test, as has been shown by Edmunds and in our own experiments, is unreliable. Two other methods have been suggested for this purpose: one based on the activity of the drug on uterine muscle, and the other based on its effects on the circulation. Each of these methods requires either that the sample be compared to a standard preparation, or else that a considerable series of animals be employed for each test, and the average taken of the series. Against the method of comparing the effects with a standard preparation rises the almost insuperable obstacle of keeping a standard preparation on hand without deterioration.

Our opposition, expressed in connection with digitalis, to any method of test for any drug which requires comparison with a standard preparation which cannot be made by any competent pharmaceutical chemist, applies still more strongly to ergot. The method of taking the average of a series makes the assay so expensive and so tedious as practically to preclude its use by any but the largest wholesale manufacturers. Moreover, there is at least a reason to hope that before the next edition of the Pharmacopeia appears, a satisfactory chemical test for this drug will have been devised. For these reasons we do not recommend the introduction of a physiologic standard for ergot.

Thyroid.—Thyroid gland does not in our opinion require physiologic standardization, as the work of Hunt has shown that the percentage of combined iodine is an accurate indicator of the quality of the drug, and we believe that wherever a chemical test is equally available it should be given the preference to a physiologic one.

Veratrum.—The one physiologic test for veratrum which, so far as our reading goes, has been suggested, is the quantity required to kill. As this substance contains a number of alkaloids which are quite different in their effect, we do not believe that such a test is of any great practical importance. Moreover, as the active principle of this drug is alkaloidal in nature, it would appear to us that a method of chemical standardization could be devised. We would call attention to the fact, however, that the total percentage of alkaloid is no indication of physiologic power of the drug, for, as has been shown by Eden,² the protoveratrin, which constitutes a comparatively small percentage of the alkaloidal content of the plant, is so much more powerful than any other principle that it practically dominates the action of the drug.

Aconite.—Although the Pharmacopeia directs that aconite should contain 0.5 per cent. of aconitin, yet the method described gives rather the total alkaloids of the drugs. The percentage of total alkaloids is by no means an accurate criterion of the activity of the specimen, since there are present in the crude drug at least two other alkaloids besides aconitin, which are greatly inferior in potency; therefore, the drug might assay comparatively high in alkaloid, but be of feeble physiologic power. We would recommend, therefore, the introduction of a physiologic standard for this remedy. E. R. Squibb suggested a method of physiologic standardization based on the power of aconite to cause tingling of the lips. A definite amount of the drug is rubbed with 1 c.c. of water and held in the mouth for one minute. This should cause a tingling of the lips, coming on in about twenty minutes and lasting about an hour. This test is unreliable, both because of the difference in susceptibility of different persons and because of the great variations in the susceptibility of the same individual on different days. The standard which we would suggest is based on the amount required to kill a given weight of animal within a period of twenty-four hours. The fact that guinea-pigs may be readily obtained and are so easily handled makes them the most available animals for this purpose.

We suggest the following standard:

Aconite should be of such strength that it requires not less than 0.4 mg. or more than 0.5 mg. per gram of body weight to kill a guinea-pig when tested in the following manner:

From the specimen to be tested, a fluidextract is made according to the official process. Four guinea-pigs are then carefully weighed and into two of them is injected beneath the skin of the abdomen an equivalent of 0.0004 gm. of aconite for each gram of the body weight, and into the other two is injected 0.0005 gm. per gram of body weight. If at the end of twelve hours the first two survive and the second two are dead, the drug is of satisfactory quality. If the first two die, it is too strong; if the second two survive, it is too weak. If one of either pair lives and the other dies, the test must be repeated.

Digitalis Group.—Apocynum, convallaria, digitalis, scilla and strophanthus are placed together by pharmacologists, as they have much the same physiologic actions. As there is no

* Read before Scientific Section of the Philadelphia Branch of the American Pharmaceutical Association, Nov. 10, 1910.

1. Brunning: Ztschr. f. exper. Pharm. u. Therap., 1905, L, 80.

2. Eden: Arch. f. exper. Path., xxix, 40.

satisfactory method of chemical standardization for any of these drugs, the committee feels that the adoption of a physiologic method of assay would be advisable.

Three types of test have been suggested for the standardization of these drugs: (1) the dose required to kill a warm-blooded animal, as the guinea-pig; (2) the amount required to produce the arrest of the heart of a frog in a given period of time; (3) the degree of elevation of blood-pressure in a warm-blooded animal. The last of these methods may be immediately excluded as being the least reliable of the three, and also the most complex technically. Concerning the choice between the first two methods, while recognizing that there are valid arguments in favor of each, we are inclined to prefer the test on the guinea-pig. It is true that in the study of Edmunds and Hale³ the frog test appeared to be somewhat more accurate, showing in no case an error of more than 10 per cent. There are, however, two serious objections to the frog method as an official process of assay. In all of these frog tests a time limit has been given, and the various time limits have ranged from one to twenty-four hours. According to the author just quoted, the fatal dose for twelve hours is about three-fourths of that for one hour. It is evident that the difference between the dose required to kill in one hour and that required to kill in twelve hours is largely a question of the rapidity of absorption. Now it may easily be that a preparation which is highly active may, for some reason, be comparatively slowly absorbed, so that the one-hour test is not only of activity of the drug, but of absorbability, which manifestly is not the purpose of the assay.

Another objection which seems to us almost insurmountable is the great variation in the susceptibility of frogs. In the first place, it is a well-recognized fact that frogs of different species vary widely in their susceptibility to members of the digitalis group. It would, therefore, be essential to use always frogs of one species. This offers no trouble if the tests were to be carried out only in one part of the United States, but the species of frogs which are common in Maine are not found at all in California. The most widely distributed frog, the *Rana pipiens*, does not occur west of the Sierra Nevada. Not only do frogs of different species show variations in their susceptibility, but it is recognized that the season of the year influences this. According to a statement made by Dr. Hale in a discussion of this subject before the Philadelphia Branch of the American Pharmaceutical Association, this difference is due simply to the effects of temperature and can be overcome by working always in a room of certain temperature. We are not familiar, however, with any experimental proof of this statement, and it seems, *a priori*, improbable. Moreover, there is reason to believe that even the same species of frog varies according to the locality from which it is obtained. Dr. Donaldson of the Wistar Institute of Anatomy has found a marked difference in the relation of total body weight to the weight of the central nervous system in frogs of the same species, obtained from different parts of the country. While this does not, of course, absolutely prove that there would be a difference in the susceptibility to digitalis, it necessitates at least a careful study of the comparative susceptibility of frogs of the same species from different regions, before it can be taken for granted that they will be the same.

The only method of overcoming these obstacles would seem to be by comparing the preparation tested with a standard preparation. We are convinced that such a method of standardization is undesirable for pharmacopeial purposes. It would necessitate a distribution either by the government or the Pharmacopeial Convention of a standard preparation, and although the experiments of Houghton indicate that tincture of strophanthus might be available for this purpose, such a standard would have to be tested almost continuously by the distributors and given out at comparatively short intervals. Chance deterioration in the standard might easily result in flooding the market with inferior preparations before the fact was discovered and corrected.

Guinea-pigs, on the other hand, are obtainable in all parts of the world. They are already used for standardization of various remedies, and their susceptibility to digitalis, so far as known, does not vary under ordinary conditions. Temperature, food, season, weight and sex do not influence their reaction. We therefore recommend the use of guinea-pigs for the determination of the physiologic activity of drugs of this group. As the methods of assay for all the members of this group are the same, we shall describe the test as applied to digitalis only.

Digitalis should be of such strength that when tested in the following manner it shall require not less than 0.35 mg. or more than 0.40 mg. per gram of body weight to kill a guinea-pig in twelve hours.

Method of Assay: From the sample to be tested a tincture shall be made according to the official process; four guinea-pigs are then carefully weighed, and into two of them an amount of the tincture corresponding to 0.35 mg. per grain of body weight is injected beneath the skin of the abdomen and into the other two a quantity equivalent to 0.40 mg. is injected. If both of the first pair survive and both of the last pair die, the drug is of satisfactory quality. If, however, both of the first pair die, the sample is too strong, or, if both of the second pair survive, too weak. If, of either pair, one survives and one dies, the test should be repeated.

Suprarenal.—If suprarenal glands remain official in the next revision of the Pharmacopeia, we believe that there should be some standard of strength introduced. As at present there is no chemical assay available, and as the physiologic test is one of the simplest of all pharmacologic experiments, we recommend the introduction of the following method for the physiologic assay of suprarenal glands.

Suprarenal gland should be of such strength that 1 gm. injected intravenously into a dog shall produce a rise of mean blood-pressure within 10 mm. of that produced in the same animal by a dose of 0.001 gm. of the pure active principle when tested in the following manner:

Method of Assay: A dog weighing between 5 and 15 kilograms is anesthetized by injecting hypodermically 0.08 gm. of morphin sulphate for each kilo of body weight, supplemented with the use of such quantity of ether as shall be necessary to prevent pain. One of the larger arteries, as the femoral or carotid, is then connected with a mercury manometer and the animal allowed to come from under the influence of the ether. No experiments should be begun until at least ten minutes have intervened after the withdrawal of the ether. At the end of this period, the normal pressure should be recorded for a period of at least ten minutes, and then a dose of 0.001 mg. of pure active principle for each kilo of body weight is injected intravenously and the blood-pressure observed for at least three minutes. At a period of not less than twenty minutes after the first injection, a dose of 1 mg. of the sample to be tested is injected in the same manner and the pressure observed again for ten minutes. Ten minutes after the injection of this sample a second dose of the pure active principle is to be injected. The elevation of the blood-pressure at the highest point reached after each injection above the pressure at the time the injection was made is then measured. The rise of blood-pressure which was produced by the second injection should be within 10 mm. of the average of the first and third injections.

MRS. PRICE'S CANNING COMPOUND

When the federal Food and Drugs Act went into effect, the use of certain chemical preservatives which had been proved injurious was prohibited in food-stuffs that entered into interstate commerce. One of these preservatives was boric acid. As the harmfulness of this chemical became generally known, housewives and others who had been in the habit of using it for preservative purposes abandoned it. It was then that unscrupulous exploiters of chemical preservatives took a leaf out of the note-book of "patent medicine" fakers and put on the market, under fanciful names, preserving compounds composed largely of boric acid, but giving no indication of the presence of this chemical.

3. Edmunds and Hale: Hyg. Lab. Bull. No. 48.

Mrs. Price's Canning Compound is sold on the claim that it will "prevent canned fruits and vegetables from souring and spoiling" and that it "may be used in canning all kinds of fruits" and "in making catsup, sweet pickles or anything that is liable to ferment." The Kansas State Board of Health has published at different times the results of two independent analyses of this "compound." These indicated that the stuff varied in composition. In view of this fact and because inquiries have been received, another analysis was made of Mrs. Price's Canning Compound, in the Association laboratory. The report of the Association's chemists is as follows:

"Mrs. Price's Canning Compound, manufactured by the Price Compound Company, Minneapolis, Minn., as received in the Association laboratory, was contained in an envelope bearing the name of the preparation, the name and address of the manufacturer and directions for its use.

"The envelope contained about 30 gm. of a white powder, soluble in water, possessing a salty taste and having an odor of benzoic acid. Qualitative tests indicated the presence of borate, chlorid, benzoate and sodium. Further experiments and the quantitative estimations indicated that the constituents found existed as boric acid, sodium chlorid and benzoic acid (possibly in part as benzoate) corresponding to the following amounts:

Boric acid, 94.74 per cent.

Sodium chlorid, 4.71 per cent.

Benzoic acid (calculated from total benzoate), 0.40 per cent.

"While the first analysis (Bulletin Kansas State Board of Health, October, 1909, p. 267) showed that the preparation consisted entirely of commercial boric acid, the second examination (Bulletin Kansas State Board of Health, November, 1909, p. 282) showed that about 6 per cent. of the boric acid had been replaced by sodium chlorid. The present analysis shows that the composition has been again altered by the addition of a small amount of benzoic acid. For all practical purposes, these changes are unessential. The variability is evidently the result of carelessness in the manufacture or it is made with the idea of misleading and confusing."

The housewife who uses this mixture does so, of course, not knowing that the chemical she is putting into her foods has been declared injurious as a food preservative by the federal government. Neither does she realize that she is paying for what is essentially boric acid, worth 15 cents a pound, at the rate of \$1.60 a pound.

Correspondence

The Philadelphia Idea as to Medical Teaching

To the Editor:—On several occasions within the last few years statements have been made in medical journals, here and abroad, to the effect that the medical schools of this country are not equipped with satisfactory opportunities for clinical teaching. Last spring, the president of Cornell University, when delivering an address which should have been carefully prepared, made the extraordinary statement that no medical school in this country, with the exception of Johns Hopkins, had a hospital completely under its control, and therefore adequately used for teaching purposes.

In the London *Lancet*, Feb. 4, 1911, its American correspondent in describing a proposed amalgamation between the medical department of Columbia University and the Presbyterian Hospital refers to this plan as the "Johns Hopkins idea." It goes without saying that those of us who know much of medical teaching hold the Johns Hopkins Medical Department in the highest esteem, but it is only proper that the facts be correctly stated. The object of this communication is to point out the fact (not so generally known as it should be) that every medical school in Philadelphia has as a part of its equipment a hospital, which exists, not as an affiliated institution, but as part and parcel of its teaching plant. As long ago as 1824, when Jefferson Medical College was founded, it established an out-patient service in order to give its students the advantage of clinical material under its own

control; and in 1841, the medical department of the University of Pennsylvania did likewise. In 1873, Jefferson Medical College inaugurated its plans for a complete hospital, and this institution was opened Sept. 17, 1877, containing 160 beds. At about the same time the Hospital of the University of Pennsylvania went into active service. Three years ago, the new Jefferson Medical College Hospital, costing \$1,250,000, was completed, containing 300 beds, and from time to time the university hospital has been considerably enlarged. As soon as it was started in 1881 the Medico-Chirurgical College established an out-patient department, and a few years afterward erected a hospital. The Woman's Medical College of Pennsylvania also has a hospital known as the Hospital of the Woman's Medical College. The Hahnemann Medical College also has its own hospital, and the medical department of Temple University, the youngest of the Philadelphia schools, has under its direct control the Samaritan Hospital.

It is interesting to note in this connection that all of these hospitals are under the control of the same boards of trustees that govern the institutions in which the students matriculate for the purpose of studying medicine, and in the Jefferson Medical College, in the University Medical Department and in the Medico-Chirurgical College members of the faculty who teach in the practical branches are by virtue of their professorial chairs in actual control of and on duty in the wards. In other words, to be elected professor of medicine, therapeutics, or surgery in Jefferson Medical College means that a man is thereby elected physician or surgeon to the Jefferson Medical College Hospital. The relationship is therefore a matter of absolute control and not of friendly affiliation, and by this means only can satisfactory medical teaching in a medical school be accomplished. If, therefore, the principle of having an active hospital as a part of a thoroughly equipped medical school is to be given a specific name it should be called the "Jefferson Medical College idea" or the "Philadelphia idea" and not the "Johns Hopkins idea."

As a matter of fact, barring the Johns Hopkins Hospital; there is, I believe, no medical school in the United States so thoroughly equipped with hospital facilities under its own control as the Philadelphia medical teaching institutions, all of which have their hospitals, with exception of Temple College, side by side with the medical school buildings. All of these institutions have in addition the opportunity of teaching their students in large hospitals which are thrown open to all the schools, such as the Pennsylvania and Philadelphia Hospitals, for example. In other words, the Philadelphia schools have all the benefits of unattached hospitals possessed by institutions elsewhere in addition to the ownership and control of their own hospitals.

As a matter of historical fact, Jefferson Medical College was the first medical institution in America to establish clinical teaching, and all its sister institutions in Philadelphia, with which it dwells in the most cordial friendship, have followed its example.

H. A. HARE, M.D., Philadelphia.

Professor of Therapeutics, and Physician to the Jefferson Medical College Hospital.

Card System of Dairy Inspection

To the Editor:—I notice with much interest an editorial in THE JOURNAL, Jan. 14, 1911, p. 124, relative to the score-card system of dairy inspection, which you commend, but say that it needs "further elaboration." I shall be much interested in seeing your comments on the card and getting your ideas on the same. Possibly a few words relative to the history and development of the standard card now in use may be helpful to you and of interest. The first score-card which I ever saw allowed 500 points and handed out blocks of twenty-five to thirty-five for different items. It soon became evident that such a card, as you say, needed "further elaboration;" that if twenty-five points were allowed, for instance, for "Cleanliness of the Stable," there would be a chance for very wide differences in the score; so that from time to time we have revised

the score-card until we have evolved the one which we recommend, and every revision has been along the line of this "further elaboration." The one which we are using now has the endorsement of the National Association of Official Dairy Inspectors, but when we print more of them two items at least will receive, doubtless, further elaboration. The eight points allowed for "Cleanliness of Cows" will be subdivided into minor items, as will be the six points for "Condition of Stable," "Air at Milking Time," giving a part of the allowance for "Clean Bedding," a part for "Freedom from Dust," and a part for "Freedom from Odors." Our experience has shown us that the more the card is elaborated the better it is, and the present card is the result of years of experience and development along that line.

GEORGE M. WHITAKER,

In Charge, Market Milk Section, Dairy Division.
U. S. Dept. Agriculture, Bureau of Animal Industry.

[COMMENT:—Editorial reference to this subject is made in this issue.—ED.]

Peccavimus!

To the Editor:—I have been frequently amused by the quality of medical erudition displayed by the daily and weekly newspapers; especially by the "Clippings from Lay Exchanges" in THE JOURNAL. But are we not the goat of the Roman fable, standing on the roof of a house and ridiculing the wolf passing below, when our great JOURNAL, the English of which is so polished and the proofreading so nearly perfect, prints (Feb. 11, 1911, p. 443) Latin like this: "M. fiat pilulam"? Should the author of such Latin take up his long-neglected "Commentarii Caesaris de Bello Gallico" and find such a distortion of case-endings he would certainly be puzzled if he made an effort to convert it into English.

CHARLES H. HIGGINS, Zanesville, O.

[COMMENT:—We wish here to acknowledge other letters on this subject and to admit that our correspondent's severity is not misplaced. The error cited is, of course, a shocking one. We desire, however, to exculpate completely Dr. Bolenius, who furnished the prescriptions. We can only plead guilty of an inexplicable blunder, and throw ourselves on the mercy of the court. Those of our readers who have had any experience with the treachery of types will perhaps be lenient. If Argus had had brains to match his hundred eyes, he would have been just the man we want on our staff. Evidently, however, we have the next best thing—a corps of readers whose collective erudition and interest in maintaining the standard of THE JOURNAL are so great that any oversight of ours is sure to be brought to our attention in the next mail.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MARSDEN'S PASTE

To the Editor:—Who was the originator of Marsden's paste? Who is or was Marsden? Please give the percentage of epitheliomas cured by it.

I have had excellent success in one case of epithelioma of the bridge of the nose and toward the inner canthus of the left eye with this paste. But a man of 80 presented himself with an extended growth reaching within quarter of an inch of the margin of the lower eyelid, and I have put him off, hardly daring to do anything. Any suggestion will be thankfully received. If Marsden's paste is a good treatment, why is it not emphasized more?

A. I. LOVELL, M.D., Graysville, Tenn.

ANSWER.—Alexander Marsden originated this paste. He was a London surgeon who had a large experience in cancer in the London Cancer Hospital. His paste was introduced in an article, "A New and Successful Mode of Treating Cancer," published in London in

1867. It has always been highly regarded and widely used by a few men, but, like all other caustic methods of treating epitheliomas, it has suffered from the prejudice against caustics. It is a valuable method of treatment in properly selected cases. Its use, with that of other caustics, is considered in detail in THE JOURNAL, Nov. 5, 1910, p. 1611, in the article by Dr. W. A. Pusey on "Treatment of Malignant Growths of the Skin from a Dermatologist's Standpoint."

No reliable statistics are possible as to the percentage of cures obtained with it. Success depends on its thorough application in properly selected cases—that is, in cases in which the growth can be entirely destroyed. Daniel Lewis says that 99 per cent. of epitheliomas of the skin are curable if taken in time.

SPENGLER'S IMMUNE BODIES—I K

To the Editor:—1. What is the Carl Spengler immune blood or antitoxin? 2. Where can it be obtained? 3. What results have been obtained from its use in tuberculosis?

JOSEPH PESTAL, M.D., Pearce, Ariz.

ANSWER.—1. Carl Spengler's immune bodies—I K—are derived from the red blood-corpuscles of the blood of animals immunized against the tubercle bacillus. The material is said to be extracted in such a way that the immune bodies are removed in a state of comparative purity, free from albumin and blood-coloring matter. The theory of Spengler, on which the preparation is based, is that the red blood-corpuscles are the source of the immunizing substance produced by the organism in tuberculosis.

2. The preparation is made by Spengler, of Davos, Switzerland, and is put on the market by Kalle & Co., Riebrich a. Rh., Germany. It has been used to a considerable extent in Germany, but, as we understand, it cannot be imported into this country legally because the firm which manufactures it has not a license for the manufacture of serums, antitoxins, tuberculins, etc., which is required by the United States government before such products can be imported into this country. A list of licensed manufacturers appeared in *Public Health Reports*, Feb. 10, 1911.

3. Many favorable reports of the action of this preparation in tuberculosis have appeared in the literature, while other clinicians have found it of little or no value. Further experience will be necessary before a positive opinion can be expressed.

TREATMENT OF GEOGRAPHICAL TONGUE

To the Editor:—Can you give me a remedy for a disease which is commonly known as "geographical tongue"? This is mentioned in Stellwagon's "Diseases of the Skin," on pp. 1086-89, under the heading of "Transitory Benign Plaques of the Tongue," and is given the following names: exfoliatio arcata linguæ, pityriasis linguæ, wandering rash, ringworm-like patches of the tongue, Muller's superficial glossitis, etc.

I have under treatment a chronic case which has existed for about ten years; the patient is over 65 years of age and has no syphilitic taint. I have tried a number of antiseptics and other remedies, but I find them of very little use and would be grateful if you can suggest some remedy.

J. F. NAGLE, M.D., New York City.

ANSWER.—There is no satisfactory treatment for geographical tongue. Its etiology is not known, so the treatment is entirely empirical. The use of bland antiseptic mouth washes, such as a solution of hydrogen peroxid, and painting with a bland varnish, such as tincture of myrrh, are recommended. A few paintings with tincture of iodine at intervals of at least three or four days may serve to remove it either by stimulating the surface or by acting as an antiseptic. The condition is rare in the old and a careful differential diagnosis should be made from leukoplakia, in which stimulating remedies like tincture of iodine are not indicated.

USE OF MERCURY CYANID OR OXYCYANID AS AN ANTISEPTIC

To the Editor:—Can you give me any references to literature concerning cyanid or oxycyanid of mercury as an antiseptic?

C. S. OAKMAN, Detroit.

ANSWER.—Cyanid and oxycyanid of mercury are described in New and Nonofficial Remedies, pages 126 and 127, and in the British Pharmaceutical Codex. These authorities state that these salts have an antiseptic and disinfectant power similar to mercuric chlorid. The bactericidal value of mercuric oxycyanid is given by Lehmann (*Oesterr. Ztg.*, 1903, 851; abstracted in the Proceedings of the American Pharmaceutical Association, 1904, lii, 795) as equal to that of mercuric chlorid. Doubt is thrown on the antiseptic value of mercuric oxycyanid by K. Holdermann, who cites the experiments of B. Köhler in a thesis published at Marburg in 1905 (*Arch. d. Pharm.*, 243, No. 9, 1905, 673; abstracted in the Proceedings of the American Pharmaceutical Association, 1906, lii, 828).

MEDICAL MISSIONARY SERVICE

To the Editor:—Whom may one address to apply for foreign missionary medical service? F. S. MARNELL, Nebraska City, Neb.

ANSWER.—The first and most natural procedure for a person who wishes to take up foreign medical missionary work is to communicate with the foreign board or society of the particular denomination in which he or she is already a member or regular attendant. There is, however, what might be called a clearing house for all denominations, and the secretary of this body recently sent an interesting letter to THE JOURNAL, which will be found in the issue of Dec. 3, 1910, page 1997. Mr. W. B. Smith, 125 East Twenty-Seventh Street, New York City, is candidate secretary of the Student Volunteer Movement for Foreign Missions.

REMOVAL OF ADHESIVE PLASTER

To the Editor:—Dr. Beardsley, in THE JOURNAL, January 28, suggests the use of oil of wintergreen in removing adhesive plaster. A cheaper and often more accessible article is ether.

To remove the plaster raise from one-eighth to one-fourth inch of one end of the adhesive strap before applying the ether, then, with a medicine dropper, apply ether to the skin a drop at a time, and the plaster will almost fall off by its own weight. It is necessary to be careful not to separate the cloth from the adhesive material in starting or else the ether will follow this plane, removing the cloth only. J. SCOTT BROWN, M.D., Burnett, Wis.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Feb. 18, 1911.

Millikin, John D., D.S., granted leave of absence for two months, to take effect on arrival at San Francisco.

Monerief, William H., captain, assignment to duty at Fort Riley, Kan., revoked, and instead ordered to Fort Leavenworth, Kan.

Graham, George D., D.S., orders so amended as to relieve him from duty at Fort Shafter, H. T., to take effect on the arrival at Honolulu of the transport leaving San Francisco about July 5, and to direct him to proceed on that transport to Manila, P. I., and report for assignment to duty.

Coffin, Jacob M., captain, granted three months' leave of absence, to take effect on his relief from duty in the Philippines division; permission to return to the United States via Europe.

Wing, F. F., D.S., reports his arrival at Fort Des Moines, Iowa, for temporary duty.

Pinkston, O. W., captain, reports in field with 4th Cavalry, camp at Washington Park, El Paso, Texas.

Millikin, John D., D.S., relieved from duty in the Philippines division and will proceed from Manila, P. I., about August 15, 1911, to San Francisco for orders.

Page, Henry, major, granted four months' leave of absence, to take effect on his relief from duty in the Philippines division, with permission to go beyond the seas.

McLaughlin, William F., M.R.C., granted leave of absence for one month and four days.

Blair, Faris M., M.R.C., granted twenty-three days' leave of absence.

Underwood, Gordon B., M.R.C., granted twenty-three days' leave of absence.

Delacroix, A. C., M.R.C., reported for temporary duty at Fort Columbia, Wash.; left Boise Barracks, Idaho, February 8.

Bierbower, H. C., M.R.C., reports arrival at Columbus, N. Mex., with Troop C, 4th Cavalry.

Maloney, James E., M.R.C., ordered to proceed to Fort Lawton, Wash., for temporary duty.

Campbell, George F., M.R.C., relieved from treatment at the Army and Navy General Hospital, Hot Springs, Ark., and will return to station, Fort Wingate, N. Mex.

Scott, Harold O., D.S., orders for annulment of contract revoked. Will proceed, at the expiration of his leave of absence, to the Army General Hospital, San Francisco, for duty. Dental Surgeon Scott will stand relieved from duty at that hospital and will proceed to the Philippine Islands for duty on transport sailing from San Francisco about April 5, 1911.

Monerief, William H., captain, granted thirty days' leave of absence.

Carr, William B., lieutenant, ordered to proceed from Fort Monroe, Va., to Fort Sam Houston, Texas, for temporary duty.

Delacroix, relieved from duty at Boise Barracks, Idaho, and assigned to duty at Fort Columbia, Wash.

Roberts, William M., major, ordered to Fort Oglethorpe, Ga., for temporary duty.

Bourke, James, captain, directed to proceed to Fort Crockett, Texas, for duty about April 10, instead of March 10, 1911.

Woodall, William P., captain, honorably discharged from the service of the U. S.

Williamson, L. P., lieutenant, assigned to duty with Co. I, Signal Corps, for field service in Arizona.

Medical Corps, U. S. Navy

Changes during the week ended Feb. 18, 1911.

Farwell, W. G., P. A. surgeon, detached from the naval station, Guantanamo, Cuba, and ordered to the *South Carolina*.

Riddick, W. J., asst.-surgeon, detached from the *South Carolina* and ordered to the naval station, Guantanamo, Cuba.

Hibbett, C. T., medical director, detached from the navy yard, Norfolk, Va., and ordered to command the naval hospital, Norfolk, Va.

Du Bose, W. R., medical director, detached from command of the naval hospital, Norfolk, Va., and ordered to duty as member of the naval examining and naval medical examining boards, Washington, D. C.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Feb. 15, 1911.

Guiteras, G. M., surgeon, granted nine days' leave of absence from Feb. 1, 1911, on account of sickness.

Yonng, G. B., surgeon, detailed to represent the service at the annual conference on medical education and legislation of the American Medical Association, at Chicago, March 1-3, 1911.

McLaughlin, A. J., P. A. surgeon, directed to proceed to Erie, via Harrisburg, Pa., on special temporary duty.

Warren, B. S., P. A. surgeon, granted seven days' leave of absence from Jan. 4, 1911.

Manning, H. M., P. A. surgeon, directed to proceed to the New Orleans quarantine station, Quarantine, La., and report to the medical officer in command, for duty and assignment to quarters.

Pettyjohn, Joseph, P. A. surgeon, directed to proceed to Boston and report to the medical officer in command for duty and assignment to quarters.

Lyon, R. H., asst.-surgeon, directed to proceed to Ellis Island, N. Y., and report to the chief medical officer for duty.

Stiles, C. W., professor of zoology, detailed to attend a conference on the hook-worm disease to be held at Atlanta, Ga., Feb. 14-15, 1911.

Hunt, Reid, professor of pharmacology, detailed to attend the meeting of the Council on Pharmacy and Chemistry of the American Medical Association, at Chicago, Feb. 17, 1911.

Thompson, W. R. P., A. A. surgeon, directed to proceed to Salina Cruz, Mexico, on special temporary duty.

Walkley, W. S., A. A. surgeon, granted seven days' leave of absence from Feb. 10, 1911.

Wood, J. E., A. A. surgeon, granted fifteen days' leave of absence from Feb. 9, 1911.

Wright, F. T., A. A. surgeon, granted thirty days' leave of absence from Feb. 6, 1911.

Motter, M. G., technical assistant, detailed to represent the service at the meeting of the National Confederation of State Medical Examining and Licensing Boards, at Chicago, Feb. 28, 1911.

Wilbert, M. I., technical assistant, detailed to attend the meeting of the Council on Pharmacy and Chemistry of the American Medical Association, at Chicago, Feb. 17, 1911.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Senator Owen Introduces New Health Bill

The Hon. Robert L. Owen has introduced the following bill as a substitute for the bill introduced last year providing for a National Department of Health:

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That there shall be at the seat of government an executive department to be known as the Department of Health, and a Secretary of Health, who shall be the head thereof, who shall be appointed by the President, by and with the advice and consent of the Senate, who shall receive a salary of \$12,000 per annum, and whose term and tenure of office shall be like that of the heads of the other executive departments; and Section 158 of the Revised Statutes is hereby amended to include such department, and the provisions of Title 4 of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The said secretary shall cause a seal of office to be made for the said department, of such device as the President shall approve, and judicial notice shall be taken of said seal.

SEC. 2. That there shall be in said department an assistant to the secretary, known and designated as director-general, who shall be a competent physician and a skilled sanitarian, to be appointed by the President, by and with the advice and consent of the Senate, who shall receive a salary of \$7,500 per annum, and whose term and tenure of office shall be for six years. He shall perform such duties as shall be prescribed by the secretary or required by law. There shall also be one chief clerk, and a disbursing clerk and such other clerical assistants as may from time to time be authorized by Congress. And the auditor for the state and other departments shall receive and examine all accounts of salaries and incidental expenses of the office of the Secretary of Health and of all bureaus and offices under his direction, all accounts relating to the Public Health and Marine-Hospital Service, the Bureau of Chemistry, the Bureau of Vital Statistics, the Bureau of Meat Inspection, or other bureaus which may be

transferred to the Department of Health by executive order, as is provided for by this act, and to all other business within the jurisdiction of the Department of Health, and shall certify the balance arising thereon to the Division of Bookkeeping and Warrants, and send forthwith a copy of each certificate to the Secretary of Health.

SEC. 3. That it shall be the province and duty of said department to foster and promote, by inquiries or otherwise, and develop all matters pertaining to the public health; to collect and diffuse information relating to or affecting the public health; to advise the several departments of the government, the executives of the several states and territories, and all the health authorities of the several states and territories and the District of Columbia and the dependencies on all matters pertaining to the public health, when in his opinion such advice may tend to the preservation and improvement of the health of the people, to secure the best sanitary condition of vessels, their cargoes, passengers, and crews, from foreign and domestic ports; to prevent the introduction of contagious and infectious diseases into the United States and their spread from any state or territory or the District of Columbia; on request of the executive of any state or territory or the District of Columbia to cooperate with and aid state, territorial, district, and municipal health authorities in the execution and enforcement of such needful rules and regulations as are deemed by him necessary to suppress or prevent the spread of contagious and infectious diseases; and, in general, the Department of Health shall be the medium through which the government shall adopt such measures or take such action as will most effectually protect and promote the health of the people of the United States and its dependencies.

SEC. 4. That the office of the surgeon-general of the Public Health and Marine-Hospital Service and the corps of officers and personnel of the Public Health and Marine-Hospital Service, now and heretofore under the jurisdiction of the department of the Treasury, be, and the same hereby are, transferred from the Department of the Treasury to the Department of Health, and the same hereafter shall remain under the jurisdiction and supervision of the last-named department; and that the chief of and the Bureau of Vital Statistics of the Census Office, and all that pertains to the same, be, and the same hereby are, transferred from the Department of Commerce and Labor to the Department of Health and henceforth shall remain under the jurisdiction and supervision of the latter; and the following-named bureaus of the Department of Agriculture: that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors and engaged in the enforcement of the Act of Congress approved June 30, 1906, the chief of the bureau and all that pertains thereto, and that part of the Bureau of Animal Industry charged with the inspection of live cattle and hogs and carcasses and products thereof which are subjects of interstate and foreign commerce, the chief of the bureau and all of said bureau which pertains thereto, be, and the same hereby are, transferred to the Department of Health, and the same hereafter shall remain under the jurisdiction and supervision of the last-named department.

SEC. 5. That all the duties, powers, authority, and jurisdiction, whether supervisory, appellate, or otherwise, now imposed on the Secretary of the Treasury by acts of Congress relating to the Public Health and Marine-Hospital Service, to the enforcement of quarantine, and for the suppression of epidemic diseases; and now imposed on the Secretary of Commerce and Labor by acts of Congress, relating to the Bureau of Vital Statistics of the Census Office; and now imposed on the Secretary of Agriculture by acts of Congress, relating to that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors and engaged in the enforcement of the aforesaid Act of June 30, 1906, and relating to that part of the Bureau of Animal Industry charged with the inspection of live cattle and hogs and carcasses and products thereof, shall be, and the same hereby are, transferred to and imposed and conferred on the Secretary of Health.

SEC. 6. That the Secretary of Health is hereby given power and authority to rearrange the work of the bureaus and offices confided to said department, and to consolidate the statistical bureaus and offices, and the Secretary of Health shall also have authority to call on other departments of the government for statistical information so obtained in such manner as to him may seem wise. That the official records and papers now on file in and pertaining exclusively to the business of any bureau, office, department, or branch of the public service in this act transferred to the Department of

Health, together with the furniture now in use in such bureau, office, or department, or branch of the public service, shall be, and hereby are, transferred to the Department of Health.

SEC. 7. That the President be, and hereby is, authorized by order in writing, to transfer at any time the whole or part of any office, bureau, division, or other branch of the public service engaged in statistical or scientific work which relates to and is germane to the public health to the Department of Health, except those of the Department of War and the Navy, and in every such case the duties and authority performed by and conferred by law on such office, bureau, division, or other branch of the public service, or part thereof, which is transferred, and all the power and authority conferred by law, both supervisory and appellate, on the department from which such transfer is made, or the secretary thereof, in relation to said office, bureau, division, or other branch of the public service, or the part thereof so transferred, shall immediately, when such transfer is ordered by the President, be fully conferred on and vested in the Department of Health or the secretary thereof, as the case may be, as to the whole or part of such office, bureau, division, or any branch of the public service so transferred.

SEC. 8. That there shall be an advisory board for the Department of Health. Said board shall consist of three competent experts, to be detailed from the Army, Navy, and the Bureau of Animal Industry by the Surgeon-General of the Army, the Surgeon-General of the Navy, and the Secretary of Agriculture, and one versed in law to be detailed from the Department of Justice by the Attorney-General, respectively (which experts, together with the chiefs of the bureaus of the Department of Health, shall be *ex officio* members of the board, and serve without additional compensation), and eight other members who shall be appointed by the Secretary of Health, who shall be competent experts, and not in the regular employment of the government. The said eight members shall each receive compensation of \$20 per diem while serving in conference, as aforesaid, together with allowance for actual and necessary traveling expenses and hotel expenses while in conference. The term of service of the eight members of said board not in the regular employment of the government, first appointed, shall be so arranged that two of said members shall retire each year, and subsequent appointments shall be for six years. Appointments to fill vacancies occurring in a manner other than as above provided shall be made for the unexpired term of the member whose place has become vacant. The duties of said board shall be to consult with the secretary relative to investigations to be inaugurated in the department and the methods of conducting the same, to formulate, for the secretary's approval, the rules and regulations to be observed in maritime and interstate quarantine, to formulate opinions on subjects referred to it by the secretary, and to participate in conferences held by the Secretary of Health with the health authorities of states and territories and the District of Columbia; and so much of the act approved July 1, 1902, which relates to an advisory board for the Hygienic Laboratory is hereby repealed.

SEC. 9. That the Secretary of Health shall call an annual conference of the health authorities of all the states and territories and the District of Columbia, said conference to be held in the city of Washington, and each of the said states, territories, and the District of Columbia shall be entitled to send one delegate from its health department. And each delegate from said state or territory or the District of Columbia so attending a conference called by the Secretary of Health shall be entitled to receive an allowance for actual and necessary traveling expenses and hotel expenses, not exceeding five days, exclusive of days necessarily spent in travel: *Provided*, That when, in the opinion of the Secretary of Health, the interests of the public health would be promoted by a conference of one or more health authorities of states and territories with himself, he may invite such states and territories as he may deem necessary to send one delegate from each of the health departments to participate in such conference: *And provided further*, That it shall be the duty of the Secretary of Health to call a conference on application of not less than five state or territorial boards of health, and each of said states and territories and the District of Columbia joining in such request shall be entitled to send one delegate.

SEC. 10. That the Secretary of Health, after conference with the advisory board, may cause investigations to be made into the nature, origin, and prevention of contagious and infectious diseases, epidemics, and other diseases, in the

United States and its dependencies, and, if necessary, in foreign countries, and may appoint commissions of experts from the Department of Health or experts not in the regular employment of the government to make such investigation as may in his judgment seem wise.

SEC. 11. That the President is hereby authorized, when requested by the Secretary of Health, and when the same can be done without prejudice to the public service, to detail officers from the several departments of the government for duty under the direction of the Secretary of Health to carry out the provisions of this act, and such officers while so detailed shall receive no additional compensation except for actual and necessary expenses incurred in the performance of such duties.

SEC. 12. That the Secretary of Health shall annually, at the close of the fiscal year, make a report in writing to Congress, giving an account of all money received and disbursed by him and his department in fostering and promoting the public health, and in matters relating thereto. He shall make special reports as he may be required to do by the President, or either house of Congress, or which he himself may deem necessary and urgent.

SEC. 13. That, except as expressly provided for by this act, nothing herein contained shall be construed as limiting or abrogating any function, right, or duty now imposed by law on any existing bureau or part of bureau; but such bureaus and parts of bureaus as are by this act transferred to the Department of Health shall continue, under direction of the Secretary of Health, to have such functions, duties, and rights as they have at the time of such transfer, and such parts of bureaus as are not transferred, in those cases where a part only is transferred, shall continue to have such functions, duties, and rights as they would have had if this act had not been passed.

SEC. 14. That the sum of _____ dollars be, and is hereby, appropriated to carry the provisions of this act into effect.

SEC. 15. That all acts or parts of acts inconsistent with this act are hereby repealed.

SEC. 16. That this act shall take effect on and after July 1, 1911.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Fourth Weekly Meeting

INFECTIONS OCCURRING IN SURGICAL DISEASES AND CONDITIONS ERYSIPELAS

ETIOLOGY: *Streptococcus erysipielatis*, relation to *Streptococcus pyogenes*. Season, age, sex, previous attacks, traumatism, local abrasions. Infection may be (1) local (ectogenous), (2) lymphogenous, or (3) hematogenous.

PATHOLOGY: Changes in the skin and subcutaneous tissues. Extension to deeper structures, meninges, etc. Changes in endocardium, viscera.

SYMPTOMS: Incubation, duration, prodromata. Invasion; general symptoms, chill, fever, vomiting, pulse, urine, nervous symptoms. Relation of constitutional symptoms to local lesions. Local symptoms; erysipelas erythematosum. Erysipelas vesiculosum, bullosum, pustulosum, gangrenosum. Erysipelas migrans, neonatorum.

TREATMENT: Prophylactic. Antisepsis. Puerperal cases. Reinfection. Diet.*

CONSTITUTIONAL TREATMENT: Medicinal. Serum treatment. Symptomatic treatment.

LOCAL TREATMENT: Phenol, mercuric chlorid, ichthyol. Subcutaneous injections. Strapping.

TETANUS

ETIOLOGY: Bacillus of tetanus, staining and cultural characteristics. Tetanus toxins. Wounds favoring growth of tetanus bacillus. Fourth-of-July tetanus.

SYMPTOMS: Incubation period, duration, prodromata. General symptoms. Condition of wound. "Idiopathic" tetanus.

CLINICAL TYPES: Acute and chronic, tetanus neonatorum, puerperal tetanus, head tetanus.

TREATMENT: Prophylaxis.

Local treatment.

Serum-Therapy: Method of using serum and antitoxins.

Phenol treatment.

Medicinal Treatment.

Monthly Meeting

The Value of Blood-Examination in the Surgical Infections.
The Clinical Diagnosis of Septicemia, of Pyemia.
Prophylaxis of the Surgical Infections.

Extra Weekly Meeting

There can be an extra weekly meeting for the exhibition of cases and for the report of case histories by any of the members.

* Osler's Modern Medicine, iii, 533.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

ILLINOIS: Coliseum Annex, Chicago, March 2-4. Sec., Dr. James A. Egan, Springfield.

MAINE: Portland, March 14-15. Sec., Dr. F. W. Searle, 806 Congress St., Portland.

MASSACHUSETTS: State House, Boston, March 14-16. Sec., Dr. Edwin B. Harvey, Room 159, State House.

WYOMING: Laramie, March 7-9. Sec., Dr. J. B. Tyrrell.

Preliminary Educational Requirement in Indiana

The State Board of Medical Registration and Examination is now enforcing the following outline of minimum preparatory work required which became effective Jan. 1, 1911:

1. Graduation from a regularly commissioned high school of Indiana, or from an equivalent school, such graduation to be evidenced by a certificate or diploma properly signed, or in lieu of such graduation formal documentary evidence satisfactory to the board of a full equivalent of such high school course.

2. In addition to the above, the applicant must submit formal documentary evidence that he has pursued successfully in a recognized college or university in resident courses extending over not less than eighteen calendar months, sufficient work, including the courses outlined below, to entitle him unconditionally to not less than one-half of the total credits required by said institution for the bachelor's degree in the courses of liberal arts or science.

Specific subjects required: For applicants matriculating under these requirements subsequent to June 30, 1912, the following subjects are specifically required to be included in the preparatory work: One year each of chemistry and biology, one of which shall be college work. Two years of college English. The remaining college work is unspecified, save that it must be taken in subjects commonly recognized as belonging in the course of liberal arts or sciences. College courses, professional or semiprofessional in their nature, will not be accepted as meeting in any part the above preliminary requirements of two years of college work.

This board will not offer or accept any examination in lieu of, or as a test of any substitute for the above required college work in liberal arts or sciences. In lieu of such college work there may be offered an equivalent amount of work in a normal or other school whose credits are transferable and acceptable to such recognized college or university as contemplated above. The board may require as evidence of this equivalency a certificate from a college or university acceptable to the board, stating the work is so acceptable by said institution.

Book Notices

PRINCIPLES OF THERAPEUTICS. By A. Manquat, National Correspondent to the Académie de Médecine. Translated by M. Simbad Gabriel, M.D. Cloth. Price, \$3 net. Pp. 298. New York: D. Appleton & Co., 1910.

Basing his studies on the scientific advances of the last half century and on clinical experience and exact observations, the author attempts to lay down principles for the guidance of the young physician. He divides remedies into four classes: etiologic or nosocratic, organic and functional, symptomatic, and reparative.

In dealing with the action of medicines a most important distinction is made between toxic and utilizable actions, both of which are included by pharmacologists under the term "physiologic." The author defines toxic action as follows: "The action on the organism of any substance which, in a relatively small dose, is capable of producing reactional, material or functional disorders, remarkable by their intensity, duration or gravity, whether these disorders be immediately appreciable or secondary and more or less slow in development." He says, "It is now obvious how far we are from an equation between toxicity and death."

For actions which do not exceed the limits of normal reactions, he proposes the term "utilizable action," and expresses the belief that this distinction has practical importance of the highest order because experimenters recognizing it will no longer exhaustively investigate the toxic action of a substance; on the contrary, the utilizable actions will interest them. While therapeutics may occasionally avail itself of toxic actions, as in the use of atropin, as a mydriatic, the object should be to avoid them as a rule.

Another point to be emphasized is that the physician must always consider the possibility that the toxic action of the drug may cooperate with the action of the poison of the disease and so increase the undesirable effect on the weakened organ. Thus attention is called to the possibility of doing harm by the addition of medicinal to morbid toxicity.

Posology next demands attention and the important principle developed here is the determination of doses according to the action desired and their modification in accordance with the susceptibility of the organism. Protest is made against the use of the largest dose tolerated, to which is opposed the principle of giving the smallest effective dose.

The variations of practice imposed by various external conditions and by the nature of the disease producing the symptoms are discussed in a chapter on medicinal opportunity. There is excellent advice in the chapter entitled "Primum non Noceere," in which is discussed how one may do harm and how one may avoid doing harm. The author conservatively advises not to seek the better when good is at hand. "Where traditional medicine has shown the harmlessness and regularity of action of certain successful practices, it is inopportune to try to do better by some novel doubtful method."

Manquat's opinion of formularies is thus expressed: "It is, therefore, not too much to say that one may kill by conforming to a very good formulary." The formulary can only give the dose appropriate for the ordinary case. While in ordinary cases of pneumonia, digitalis is well borne and does good in relatively large doses, there are other cases, indicated by acceleration of the pulse and embryocardia, in which an ordinary dose may do harm by adding a medicinal poison to the poison of the disease. "How," Manquat asks, "could a formulary intended especially to furnish practical details on the administration of medicines discuss such views?" Again we quote, "What shall we think of tables of maximum doses? As I have myself been guilty of the elaboration of one, I may be severe with them. They are worse than useless, for they may warrant dangerous therapeutic procedures. Almost all posology, based as it is on the theories of physiologic therapeutics, should be revised and reduced."

As a conclusion of this chapter, the author lays down a scheme of questions which the physician should ask himself in difficult cases, in order that he may not neglect any important considerations and may avoid the chance of doing harm.

While it would be impracticable to employ these questions in every case, it would be excellent practice for every student and young practitioner to use them until this method becomes habitual with him.

In a separate chapter, Manquat gives his idea of a scientific method in the study and practice of therapeutics. The necessity of exact diagnosis and prognosis as elements in every therapeutic problem is emphasized. The worthlessness of many of the reports of so-called clinical observation is pointed out. Few medicines when first offered to physicians have, according to the author, been subjected to a series of studies calculated to establish their therapeutic value. The author insists that when invited to try a product, practitioners should have scientific reasons for taking it seriously. "In order to end the invasion of worthless remedies and specialties, physicians should, as a matter of principle, refuse to prescribe a medicine until it has fulfilled the conditions of previous studies described above. The task of studying on a patient the effect of a medicinal substance is already difficult enough without undertaking it in the absence of good reasons, even when this substance is offered as a harmless one. Our mission is to take care of patients; it is by no means that of making a reputation or a fortune for manufacturers, no matter how commendable they may be. When they say 'Try it anyhow; it is harmless,' we must answer that we try only what to us appears to be useful."

Another quotation will indicate the author's view of much current clinical observation: "Numbers add no more to the presumption of utility of a medicine than ciphers added to one another constitute a figure. A simple observation well made is of more value than a thousand of these pseudo-observations."

Space forbids a complete analysis of this excellent work. Enough has been given to indicate its method and scope. The discussion is not confined to theory, but is carried into practical details. While the ideas and suggestions will, many of them, seem self-evident to the experienced physician, a reading of the book will stimulate him to a systematic review of the principles on which he bases his therapeutic practice, while to the beginner in medicine so clear an exposition cannot fail to be of great value. The translation appears to be exceptionally well done, no trace of French idiom being observable.

CIVICS AND HEALTH. By William H. Allen, Secretary, Bureau of Municipal Research. With an Introduction by William T. Sedgwick, Professor of Biology in the Massachusetts Institute of Technology. Cloth. Price, \$1.25. Pp. 411, with illustrations. Boston: Ginn & Co., 1910.

The need of a book on modern applied sanitation which would be technically correct, and at the same time popularly interesting, has often been emphasized. Dr. Allen's book is a sincere effort to supply this need. It is divided into five parts. In the first, Dr. Allen discusses health as a civic obligation, stating that the best index to community health is the physical welfare of school children. The second part is devoted to the various physical evils from which school children suffer and the means of recognizing them. The third part is devoted to methods, including such problems as tuberculosis, clean milk, school inspection, etc. The fourth deals with municipal and school organization for securing hygienic conditions, while the last part of the book is devoted to a consideration of alcohol, tobacco, "patent medicines," sex hygiene and various methods of popular propaganda.

As was recently noted in our editorial columns, Dr. Allen's book has been adopted as a text-book for a reading course by a number of the county societies and county teachers' institutions in Missouri. The book contains a large amount of data, well arranged and forcibly presented. It is to be regretted that the influence of the work and of the author have been impaired by a tendency toward extravagant and unwarranted statements in some particulars. One illustration will suffice. "The man who discovers a surgical appliance is forced by the ethics of his profession either to commercialize it and lose his professional standing or to abide the convenience of his colleagues and their learned organizations in testing it. Rather than be branded a quack, charlatan or crank, the physician keeps silent as to convictions which do not conform to the text-book. Many a life-saving, health-promoting discovery which ought to be taken up and incorporated in general prac-

tice from one end of the country to the other and which should be made a part of the minimum standard of medical practice and medical agreement, must wait twenty-five or fifty years for recognition" (p. 272). Physicians who are conversant with medical literature know how constantly the verdict of the profession, as shown in current literature, entirely reverses the judgment of previously recognized "text-book" authorities. As to "life-saving, health-promoting" discoveries "waiting twenty-five or fifty years for recognition" this sweeping generalization has been repeatedly made, without the slightest grounds on which to base it. Can Dr. Allen point to a single "discovery," which, after a fair test proving it to be of any real value, failed to receive the recognition due it? Can he point to one, acceptance of which was delayed five years or even one year after its merits were established, to say nothing of twenty-five or fifty years? It is unfortunate that the influence of a much-needed and otherwise thoroughly valuable work should be impaired by such inaccurate and misleading statements.

PRIMER OF HYGIENE. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia, and Joseph S. Caldwell, Professor of Biology, George Peabody College for Teachers, Tennessee. Illustrated by Karl Hassmann and Hermann Heyer. Cloth. Price, 40 cents net. Pp. 184, with 113 illustrations. Yonkers-on-Hudson, N. Y.: World Book Co., 1910.

This is the first of a series of elementary books to be used as school text-books, called the New-World Science Series. The aim, which is the instruction of the young in the subjects of hygiene, sanitation and human physiology, is in line with the present wide interest in matters of health and preventive medicine. In the simplest language, enforced by illustrative examples that come within the range of knowledge and understanding of children for whom the book is intended, personal hygiene is taught in its various phases. The reasons for and the manner of taking care of the various organs and functions of the body are taught; the effects of improper habits of eating and drinking, the effects of alcohol and tobacco, tea and coffee, and the necessity for exercise are presented graphically. The germ origin of diseases is explained, and such diseases as typhoid fever, tuberculosis, malaria and small-pox are described, and the method of preventing these diseases and the importance of keeping up body resistance are entered into in a simple way. An understanding of these matters by the very young should be valuable in establishing correct hygienic habits that should prove of inestimable benefit in the prevention of disease throughout the life of the individual, and thereby have a notable influence in the betterment of public health conditions.

EMANUEL SWEDENBORG'S INVESTIGATIONS IN NATURAL SCIENCE AND THE BASIS FOR HIS STATEMENTS CONCERNING THE FUNCTIONS OF THE BRAIN. By Martin Ramstrom. (Till Kungl. Vetenskaps-Societeten i Uppsala vid dess 200-Arsjubileum af Uppsala Universitet. Den 19 November, 1910.) Paper. Pp. 59, with 4 illustrations. University of Uppsala, 1910.

After a brief summary of Swedenborg's excursions into the fields of mathematics, astronomy, mechanics, chemistry, mineralogy and geology, the author presents more completely his later teachings on the structure and functions of the brain and a detailed analysis of the sources of these neurologic doctrines.

Although Swedenborg's neurology was permeated by the absurd ideas current in his time, and long afterward, regarding the nature of the "animal spirits" or "fluidum spirituosum" and the seat of the soul, nevertheless the reader cannot fail to be impressed by the great advance of his views over those of most of his contemporaries.

The most important of these are that the centers of the psychic functions are to be found in the cerebral cortex, that these functions are localized in definite cortical areas and that the cortical nerve cells ("cerebellula") are the functional units. All of these views are shown to be represented in more or less fragmentary forms scattered through various previous publications with which Swedenborg was doubtless familiar; but nowhere were they assembled in forms so similar to their modern phases as in Swedenborg's writings.

The explanation of his success in sifting the few kernels of reliable neurologic observation from the rubbish of current speculation and superstition is found in the fact that before publishing his works on the brain he devoted several years to anatomic, physiologic and clinical studies in various scientific

centers of Europe and was thus prepared with a real, though limited, basis for a scientific treatment of the scanty neurologic data of his time.

This little work adds an interesting chapter to medical history, valuable for its accurate citations of the possible sources of Swedenborg's ideas from the works of Descartes, Willis, Malpighi, Vieussens and others.

BIENNIAL REPORT OF THE DAIRY AND FOOD COMMISSIONER OF WISCONSIN. For the Period Ending June 30, 1910. J. Q. Emery, Dairy and Food Commissioner, Madison, Wis. Cloth. Pp. 368, with illustrations. 1910.

A perusal of the report of the Wisconsin Dairy and Food Commission is convincing evidence of the fact that Wisconsin is one of the leading states in control of food, especially dairy products. The amount of work carried on during the term of two years is enormous, and the results seem to be excellent. There are records of 2,031 food analyses, and in addition 8,247 samples of milk have been analyzed. Systematic inspection of dairies has put the dairy industry on a relatively high level, and this industry is yielding an annual revenue of \$79,000,000. Valuable statistics are given, and elaborate charts of the location of dairies, cheese factories, etc. An interesting comparison between early dairy conditions and the modern state of affairs are presented. The importance of a sanitary milk-supply is emphasized and regulations discussed for the production of clean milk.

The report states that food products with poisonous or deleterious chemical preservatives are almost completely driven from the Wisconsin market and that the labels state the true contents of the packages. Wisconsin has shown us that state control of food products, especially of dairy products, can be made successful, and has put before us a worthy example, which ought to serve as a guide for other states.

NURSES' HANDBOOK OF DRUGS AND SOLUTIONS. By Julia C. Stimson, R. N., Vassar A.B., Superintendent of Nurses, Harlem Hospital of Bellevue and Allied Hospitals, New York City. Cloth. Price, \$1 net. Pp. 82. Boston: Whitcomb & Barrows, 1910.

On the principle that it is beyond the nurse to prescribe, but that she should have a knowledge of the powerful and important drugs, the author has attempted to impart such knowledge. Drugs are first classified according to their more important physiologic action. In doing this the author has made the error of classifying chloral as an analgesic. Definitions and examples of the different preparations are given, as fluidextracts, tinctures, etc. Methods and indications for modification of doses, table of weights and measures and equivalents, method of preparing percentage solutions, formulas of solutions in common use, and very brief descriptions of the actions and uses of the more important drugs are given. Some exceptions might be taken to the list given under the head of practical classification of drugs; for instance, under acids, tannic and hydrocyanic acid are given. This would convey an erroneous idea of the action of these drugs. There is a list of Latin phrases and abbreviations, and the book closes with a chapter on serums, antitoxins and vaccines. The book contains useful information for the nurse, but it is not presented in a very attractive form.

THE DETERMINATION OF THE DETERIORATION OF MAIZE, WITH INCIDENTAL REFERENCE TO PELLAGRA. By O. F. Black and C. L. Alsberg, Chemical Biologists, Drug-Plant, Poisonous-Plant, Physiological, and Fermentation Investigations. Issued Dec. 16, 1910. Bull. 199, Bureau of Plant Industry, U. S. Department of Agriculture. Paper. Pp. 36. Washington: Government Printing Office, 1910.

This bulletin describes some work done in the Bureau of Plant Industry with reference to spoiled corn. This is preliminary to a further study to determine the possible connection between spoiled maize and pellagra. In the study of corn the Italians lay great stress on acidity. The bulletin describes methods of examining corn, by inspection, biologically and chemically, determining its acidity, which in sound corn should not be over 30 as measured by alkaline tests, its ash, fat, phenol and other reactions and the determination of its toxicity by animal experimentation; also a study of the micro-organisms which cause it to become moldy. The work is valuable as a foundation for the final determination of the rôle, if any, that spoiled maize plays in pellagra. No conclusion has been reached as yet. Many references to the literature are given.

THEORIE UND PRAXIS DER INNEREN MEDIZIN. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Erich Kindborg in Bonn. Erster Band. Die Krankheiten der Zirkulations- und Respirationsorgane. Cloth. Price, 7 marks. Pp. 404, with 47 illustrations. Berlin: S. Karger, 1911.

The plan of this book is founded on the author's observation that students of practical medicine have frequently forgotten the pertinent facts learned in their preliminary studies of the fundamental sciences. Hence students are apt to pursue the subject of internal medicine with confused notions of the relations which chemistry, physiology and bacteriology bear to the subject at hand. Time is lost in referring to text-books, and the author has attempted to supply this lack by including, in his account of diseases, the essential facts of the fundamental sciences which find an application in the special case. The work is well done and may profitably be studied, not only by medical students but also by physicians who wish to review the subject.

MOTHERHOOD. A Manual on the Management of Pregnancy, the Preparation for and Conduct of Labor and the Principles and Methods of Infant-Feeding up to the Third Year of the Child's Life. Prepared especially for Mothers, Nurses and Students of Medicine. By Hudson D. Bishop, M.D., Visiting Obstetrician to the Maternity Hospital, Cleveland. Cloth. Price, \$1.50 net. Pp. 244. Cleveland: Rose Publishing Co., 1910.

The author states in the preface that he has "endeavored to give everything, in a condensed form but in sufficient detail, that either the mother or nurse should know regarding the management of pregnancy, labor, and the lying-in, together with the care and feeding of the child." A book on this subject suitable for both mothers and nurses is an impossibility. It is unnecessary to alarm the expectant mother by informing her of all the symptoms and all the dangers of hemorrhage, abnormal presentations, puerperal sepsis, mastitis, phlegmasia alba dolens, etc.

Medicolegal

Unconstitutionality of Statute Taking Away Defense of Insanity, Etc.

The Supreme Court of Washington in the case of *State vs. Strasburg* (110 Pac. R. 1020) holds unconstitutional the statute of that state, enacted in 1909, which provides that "It shall be no defense to a person charged with the commission of a crime that at the time of its commission he was unable, by reason of his insanity, idiocy or imbecility, to comprehend the nature and quality of the act committed, or to understand that it was wrong; or that he was afflicted with a morbid propensity to commit prohibited acts; nor shall any testimony or other proof thereof be admitted in evidence."

The provisions of the state constitution especially considered were: "No person shall be deprived of life, liberty, or property without due process of law;" and, "The right of trial by jury shall remain inviolate." Consequently the court was confronted, as Justice Parker says, with the novel and grave question: Had the legislature the power under the constitution to enact a law taking away from a defendant accused of crime the opportunity to show in his defense the fact that at the time of the commission of the act charged as a crime against him he was insane, and, by reason, thereof, was unable to comprehend the nature and quality of the act committed? It is believed that this was the first instance of any such enactment. And an examination of a number of authorities is taken to show that the question of the insanity of the accused at the time of committing the act charged being one of fact when sought to be shown in his behalf, it is and always has been a question of fact for the jury to determine, as much so as any other question of fact bearing on the responsibility of the accused for the occurrence of the act relied on as constituting the offense charged.

According to the opinion prepared by Chief Justice Rudkin, if the act stopped with what is quoted above, there could be no question as to the legislative intent. For the first time in history, as far as the court was advised, the legislature of a civilized state has attempted to place the idiot, who hath

no understanding from his nativity, the imbecile and the insane, who have lost their understanding through disease or mental decay, and the sane man, in the full possession of all his mental faculties, on an equal footing, before the criminal law. But the legislature did not stop there.

Another section of the act provides that: "Whenever, in the judgment of the court trying the same, any person convicted of a crime shall have been at the time of its commission unable by reason of his insanity, idiocy or imbecility, to comprehend the nature and quality of his act, or to understand that it was wrong, or shall be at the time of his conviction or sentence insane, or an idiot, or imbecile, such court may in its discretion direct that such person be confined for treatment in one of the state hospitals for the insane, or in the insane ward of the state penitentiary, until such person shall have recovered his sanity. In determining whether any person convicted of a crime was at the time of the commission thereof unable by reason of his insanity, idiocy or imbecility to comprehend the nature and quality of his act, or to understand that it was wrong, or is at the time of his conviction or sentence insane or an idiot or imbecile, the court may take counsel with one or more experts in the diagnosis and treatment of insanity, idiocy and imbecility, and make such personal or other examination of the defendant as in his judgment may be necessary to aid him in the determination."

When these two sections are construed together, it is believed that the legislature did not intend to punish one for the commission of a crime, when by reason of his insanity, idiocy, or imbecility he was unable to comprehend the nature and quality of his act, or to understand that it was wrong, but rather that it intended to minimize the well-known evil resulting from the all-too-frequent interposition of the defense of insanity in homicide cases, where no other defense is available, by changing the time and mode of trial of the issue of insanity. But, assuming that the legislature simply intended to change the time and mode of trial of the issue of insanity, this latter-quoted section is lacking in every essential requirement of due process of law. While if the view must be accepted that the legislature intended to abrogate the defense of insanity in its entirety, and to place the sane and the insane, the idiot, and the imbecile on an equal footing before the criminal law, the opinion is still held that the act is unconstitutional and void.

The state sought to uphold the act on two grounds: first, on the ground that it is within the police power of the state to eliminate the question of intent in all criminal cases; and, second, on the ground that under modern theories the lawbreaker is taken into custody by the state for his own amelioration and reformation, and not as a punishment for crime—in other words, that the theory of legal punishment for crime is a relic of a barbarous age. But neither contention is accepted.

It will be conceded that the legislature has a broad discretion in defining and prescribing punishment for crime, but, broad and pervading as the police power is, it is not without constitutional limitations and restraints, and a valid penal law can scarcely be conceived of which would punish a man for the commission of an act which the utmost care and circumspection on his part would not enable him to avoid.

The argument that persons are no longer punished for their crimes is illusory and unsound. The man who is deprived of his liberty is punished, and you cannot change the fact by changing the name.

Exhibition of Body and Proof of Probability of Life

The Supreme Court of Pennsylvania says, in the personal injury case of *Benson vs. Altoona & Logan Valley Electric Railway Co.* (77 Atl. R. 492) that about five months after an accident in which the plaintiff was injured he was stricken with apoplexy which paralyzed his entire right side, and the real controversy at the trial was as to whether the paralytic condition was the result of the injuries received at the time of the accident or was due to a disease with which the defense claimed he was afflicted. The first assignments of error went to the refusal of the trial judge to compel the plaintiff to

bare parts of his body for the examination of the jury. The plaintiff had submitted to a private physical examination by three physicians representing the defendant, and they were prepared to give their testimony as to the marks on his body. The Supreme Court holds that an exhibition of this kind to an unlearned jury is apt to do more harm than good, and the trial judge committed no error in refusing to order it in this case.

Nor does the court see any error in an instruction wherein the trial judge said to the jury: "There is no table of life probability adduced here in evidence, and I suppose counsel are afraid owing to the recent rulings of the Supreme Court to put in a life table, but it would be for you to look at this man and determine on the weight of the evidence from his appearance and from the evidence how long he would be likely to live, and, if his injury is permanent, then he ought to be compensated for the loss of earning power and for any pain and suffering that the weight of evidence shows he would endure in the future." The court says that, while life tables are admissible in evidence, the probability of life can be shown in other ways. In answering a request for an instruction, the trial judge told the jury that they should take into consideration the plaintiff's age, state of health, business habits, and manner of living. The suggestion that they might look at the plaintiff was expressly coupled with the instruction that their determination must rest on the weight of the evidence in the case.

Society Proceedings

COMING MEETINGS

American Medical Association: Joint Conference on Medical Education and Medical Legislation, Chicago, March 1-3.

Association of American Medical Colleges, Chicago, February 27-28.

Medical Society of the Missouri Valley, St. Joseph, Mo., March 16-18.

Natl. Confed. of State Med. Exam. and Licg. Bds., Chicago, Feb. 28.

CHICAGO PEDIATRIC SOCIETY

Regular Meeting, held Jan. 17, 1911

The President, DR. JOHN M. DODSON, in the Chair

Experimental Study of Allergy in Tuberculosis

DR. H. F. HELMHOLTZ: I investigated experimentally the relation of the point of inoculation and the size of the dose to the appearance and persistence of the cutaneous reaction. Forty-two guinea-pigs were inoculated in three series. In the first series, subcutaneous and intraperitoneal inoculations were compared; in the second series, intraperitoneal and intracardial inoculations were compared, and all three were compared in the third series. It was found that the injection of large doses of tubercle bacilli resulted fatally without producing an allergy demonstrable with the v. Pirquet test, in the majority of the intraperitoneal inoculations. Intracardially, a positive reaction resulted in a short time. Subcutaneously, all the pigs reacted. The same order also held for the small doses. The peritoneal inoculations gave rise to shorter periods of reactivity; the intracardial came next, and the subcutaneous gave the longest reaction. The interval between inoculation and first positive reaction varied from seven to one hundred days. The allergy varied from the first day to an indefinite period.

The microscopic examination of tuberculin reactions was undertaken in a series of strongly reacting pigs, both in normal and in tuberculous pigs, that were no longer reacting. The control and non-reacting animals showed practically no leukocytic infiltration. The sloughing extended slightly deeper in the latter than in the former. In the active reactions there was a thick slough in the area of scarification, separated from the normal tissue by a thick layer of purulent exudate, extending up to the surface on either side. The subcutaneous tissue, in the large reactions, had the typical appearance of an acute cellulitis, with the connective tissue elements widely separated by a fibrinous network, rich in polymorphonuclear cells.

In a series of six experiments, made to determine how soon the cutaneous reaction would appear after the peritoneal injection

of tuberculous tissue, the animals were vaccinated every second day, beginning with the day after inoculation. On the sixteenth day after injections not a single animal had reacted positively; in fact, only three reactions occurred. Then, simultaneously, scarifications were made in the often vaccinated area, and in a hitherto unused portion of the skin. The animals all showed a strong positive reaction in the new area and practically none in the oft vaccinated area, with one exception, in which there was no reaction in either place. Only one animal showed a reaction in the old area. It is probable that this finding may be explained by assuming a using-up of the antibodies by the injected tuberculin, not sufficient antibodies remaining to combine with the tuberculin introduced through the scarified area to produce a reaction.

DISCUSSION

DR. I. A. ABT: How do you explain the absence of the v. Pirquet reaction in cases of acute tuberculosis with fever?

DR. H. F. HELMHOLTZ: The disease process uses up the antibodies and none remains to unite with the tuberculin introduced by scarification. By using a large enough dose of tuberculin intracutaneously, a slight reaction usually results.

DR. J. H. HESS: Schlossman claims that the injection of tuberculin increases immunity, while Hamburger holds that the disappearance of the cutaneous reaction to tuberculin reduces immunity.

DR. H. F. HELMHOLTZ: Observers generally disagree with Schlossman, asserting that by giving such large doses of tuberculin he merely uses up the available antibodies, and subsequent tests are negative. If the inoculations are interrupted for ten days or two weeks, the tuberculin test is again positive. I have caused the reaction to disappear by giving large doses of tuberculin.

Traumatic Diabetes in Children

DR. S. STRAUSS: I have seen two cases of pancreatic diabetes following trauma. Both patients are alive and well. The first patient, aged 11, was hit by an automobile in July, 1907, and sustained a fracture of the right tibia. In February, 1908, he developed classical symptoms of diabetes. The v. Noorden gruel lowered the sugar output, but produced acidosis.

The second patient, aged 13, fell from a second story window, striking on his head. There was no evidence of injury. Three months afterward he had symptoms of diabetes. The v. Noorden diet invariably caused acetone to appear in the urine, and the ammonia coefficient was raised. The sugar output varied. The explanation probably is that the patient was suddenly switched from an ordinary diet to the v. Noorden diet without giving him a chance to regain his metabolism balance. A more gradual change of diet proved more satisfactory. At no time was there loss of body weight.

DISCUSSION

DR. I. A. ABT: Diabetes in children usually results fatally, but these two cases were a revelation to me. Since then other similar cases have been reported. Of course, this is a different type of diabetes. Epstein showed that in 50 per cent. of these cases the trauma is to the head and in 50 per cent. elsewhere. We are in the habit of thinking that it is easy to produce diabetes if there is injury at the base of the fourth ventricle, yet these cases show that it may occur quite independently of any cerebral lesion. The matter of diet and acidosis was also interesting in these cases. When the patient was put suddenly on a different diet, there was either a rise in the ammonia coefficient curve or an increase in the sugar. When the patient was placed gradually on a different diet, these findings were not noted. It is difficult to feed these children the v. Noorden diet, because it is repulsive, and far from appetizing, but it is marvelous to see the good result when the patient is placed on this diet. The sugar disappears from the urine promptly. An observer in Budapest has reported a large series of cases of alimentary glycosuria in children who had been receiving malt foods. They were believed to be cases of pure diabetes, but when the carbo-

hydrate was withheld the glycosuria disappeared. However, the two cases reported by Dr. Strauss were purely of traumatic origin, and not of the type of fatal diabetes mellitus so commonly seen in children.

DR. H. F. HELMHOLTZ: We know that the burning of carbohydrates in the body keeps the acidosis down, and when this does not take place, the acetone bodies are excreted in the urine. If carbohydrate is withheld entirely, the burning of fat is interfered with, and beta-oxybutyric acid accumulates in the body, and is excreted in the urine. In order to prevent this, therefore, there must be a burning of carbohydrates in the body. When the patients, therefore, were on the v. Noorden diet, they evidently burned all the carbohydrate given them, and when put on the other diet the sugar reappeared. These were not cases of diabetes where sugar is formed from proteids, so that the sugar found must have been introduced. The fact that the acidosis disappeared is absolute evidence that there were from 50 to 75 grams of carbohydrate being burned during that time. The acidosis is produced by an insufficiency of carbohydrates. When there are no carbohydrates in the body, the fats are burned and produce beta-oxybutyric acid. This acid cannot be oxidized any further, and is split into diacetic acid, and from that into acetone.

Study of Blood-Pressure in Normal Children

DR. MAY MICHAEL: In my studies I took into account not only the weight and height of the child, but also the circumference of the arm. I examined 128 children. The readings were taken as nearly as possible at the same time of day and under the same conditions. There was apparently an increase in the pressure with the increase in height and weight, but when the circumference of the arm was measured and the blood-pressure to the square millimeter estimated, the actual pressure was practically the same in a 5-year old child, 3 feet, 6 inches tall, weighing 40 pounds, as in a 15-year old child, 4 feet, 8 inches tall, weighing 90 pounds. According to Salomon, the area on which the pressure is exerted must be considered in estimating the blood-pressure, so that the actual blood-pressure must equal the height of the column of mercury, divided by the width of the cuff, multiplied by the circumference of the arm, which represents the area of the base. In the 128 children examined this formula did not vary more than 0.0014 mm., the mean pressure being 0.0070 mm., and the extreme 0.0084 mm. The formula is employed as follows: Multiply the arm circumference, 183 mm., by 90 mm., the width of the cuff. This equals 16,470 square millimeters, which is found to sustain 120 mm. of mercury. Therefore, one square millimeter will sustain 120/16,470, or 0.0072 mm., which represents the actual blood-pressure.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

February 9

- 1 *Sporotrichosis in Man and in the Horse. R. L. Sutton, Kansas City, Mo.
- 2 The Special Relation of Modern Medicine to the Health of Women. A. C. Victor, Boston.
- 3 Overgrowth of the Epiphysis of the Lower End of the Femur with an Obliteration of the Epiphyscal Line. J. W. Sever, Boston.
- 4 *Breast Abscess During Pregnancy. J. T. Williams, Boston

1. **Sporotrichosis in Man and in the Horse.**—Sutton reports one case seen by him. The disease was confined to the wrist and followed an injury resulting while the patient was repairing a manger at which fed a horse which had sporotrichosis of the neck. The usual line of treatment, potassium iodid in increasing dosage, gave excellent results in this instance. The lesion was somewhat resistant, probably because the infection was a mixed one (sporothrix and *Staphylococcus pyogenes aureus*), but it healed promptly under the daily application of gauze packs moistened with 1 per cent. liquor cresolis compositus.

4. **Breast Abscess During Pregnancy.**—Williams believes that 5.5 per cent. of all breast abscesses occur during pregnancy, and that organisms are present on the nipples in 100 per cent. and in the milk ducts in 86 per cent. of all pregnant women. When their growth is predisposed to by engorgement, or the resistance of the breast tissues is lowered by injury, or the organisms present are of unusual virulence, they attack the tissues and produce inflammation. The prophylaxis of breast abscess during pregnancy, according to Williams, consists in absolute cleanliness of the nipple, and the prompt treatment of mastitis by bandage, ice and saline catharsis.

Medical Record, New York

February 11

- 5 Work of the New York Academy of Medicine During 1910. J. A. Wyeth, New York.
- 6 Economics of Medicine. W. M. Polk, New York.
- 7 Transfusion of Blood in Three Cases of Pernicious Anemia. D. Bovaird, New York.
- 8 Direct Inspection of the Rectum and Sigmoid Colon. E. Beer, New York.
- 9 Inebriety. DeL. Carter, New York.
- 10 Is Sterilization of the Habitual Criminal Justifiable? C. E. Nammack, New York.
- 11 Asphyxia of the New-Born Infant Relieved by Placental Aeration. M. H. Freund, New York.
- 12 Appendectomy with Cocain Anesthesia. C. R. Hancock, New York.

Lancet-Clinic, Cincinnati

February 11

- 13 Eight Patients with Syphilis and Parasyphilitic Affections Treated with Salvarsan. A. Ravogli, E. H. Shields and E. B. Tauber, Cincinnati.
 - 14 A Case of Putnam's Type of Combined Scleroses. L. B. Askenstedt, Louisville.
 - 15 *Progress in Intestinal Surgery, with Demonstration of a New Method of Suturing Bowel. A. E. Benjamin, Minneapolis.
15. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1222.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

February

- 16 *Ninety Cases of Puerperal Eclampsia and a Critical Review of the Treatment of This Disease. E. G. Zinke, Cincinnati.
- 17 Significance of Anatomic-Histologic Examination Methods in Obstetrics and Gynecology. I. C. Rubin, New York.
- 18 *Etiologic Influence of Pregnancy on Molluscum Fibrosum. B. C. Hirst, Philadelphia.
- 19 *Myoma of the Uterus, with Special Reference to Degenerative Changes. J. B. Deaver, Philadelphia.
- 20* Intravenous Injection of Magnesium Sulphate in Bacteremia. R. R. Huggins, Pittsburg.
- 21 Two Right-Sided Femoral Hernias in the Same Patient. N. S. Scott, Cleveland.
- 22 Obstetric Surgery in Private Practice. K. H. Aynsworth, Waco, Texas.
- 23 Two Cases of Antepartum Infection. C. B. Ingraham, Denver.
- 24 Puerperal Cough and Its Treatment. D. H. Stewart, New York.
- 25 *Treatment of the Retroflexed Gravid Adherent Uterus. N. O. Werder, Pittsburg.
- 26 *Method of Teaching Vagino-Abdominal Examination. F. J. Taussig, St. Louis.
- 27 Complete Inversion of the Uterus of Fourteen Years' Standing. S. E. Tracy, Philadelphia.
- 28 Treatment of Congenital Syphilis by Administration of Salvarsan to the Nursing Mother. H. D. Chapin, New York.
- 29 History of Treatment of Cerebrospinal Meningitis with Special Reference to Serotherapy. H. T. Radin, New York.
- 30 Care and Treatment of Nervous Children. I. T. Smart, New York.
- 31 Therapeutic Use of Tuberculin in Intrathoracic Tuberculosis of Children. L. C. Ager, Brooklyn, N. Y.

16 and 20. Abstracted in THE JOURNAL, Oct. 15, 1910, p. 1404.

18. **Influence of Pregnancy on Molluscum Fibrosum.**—In Hirst's patient, at the age of 18, four or five typical growths of molluscum fibrosum appeared on the anterior surface of the body, but did not increase in number. The woman married at twenty-five and became pregnant for the first time at twenty-six. During the first pregnancy the growths increased rapidly in number. After delivery, the numerical augmentation ceased, but the growths already developed remained. In each successive pregnancy, including the present, which is the seventh, there was an increase in the number of the growths, but no such increase in the intervals between the pregnancies. This case differs from Brickner's in the appearance of the disease to a very moderate degree before impregnation, in the absence of pigmentation, in the failure of the growths to disappear after delivery and in their greater size

and number. It differs from the cases described by dermatologists in the influence exerted on the progress of the disease by pregnancy.

19. **Myoma of the Uterus.**—The only point in which Deaver differs from those who believe in the higher percentage of malignant change, is in not advocating the removal of an accidentally discovered fibroid that is giving no symptoms. This, he says, is not a large class of cases and therefore, not a very important difference. Any tumor that begins to give trouble or to cause symptoms, even if only an irregular discharge, should be removed. The tendency toward malignant degeneration gives him one of the elements of his belief. The remainder are furnished by the greater frequency of troublesome non-malignant degeneration, the likelihood of hemorrhage and chronic anemia with cardiac and vascular disturbances, the frequency of pain and more or less dangerous pressure effects on the urinary tract, the intestines and surrounding organs, the proved failure of fibroids to cease from troubling with the menopause, and the certainty that in a large percentage of cases delay merely means operation later under less favorable conditions.

25. **Retroflexed Gravid Adherent Uterus.**—Werder reports briefly two cases coming under his observation of pregnancy in the retroflexed adherent uterus. He emphasizes two points in the treatment: (1) prompt operation as soon as the diagnosis under anesthesia has been confirmed; (2) separation of adhesions and reposition of uterus, but avoidance of all attempts at radical treatment or any other operative steps endangering the continuance of pregnancy. When operating before the end of the second month, the introduction of a pessary for a short period will prevent a return of the displacement without any danger to the fetus.

26. **Teaching Vagino-Abdominal Examination.**—Joint bimanual palpation is favored by Taussig. The essentials for accurate bimanual examination in his opinion are a knowledge of how the normal organs feel and where they lie in the pelvis, muscular relaxation of patient and physician, gentle manipulation and systematic exploration.

Wisconsin Medical Journal, Milwaukee

January

- 32 Present Status of Spinal Analgesia. A. J. Puls, Milwaukee.
- 33 Lobar Pneumonia. A. G. Hough, Morrisonville.
- 34 Mortality of Pneumonia. F. I. Drake, Madison.
- 35 A Surgical Aspect of Medical Education. J. L. Yates, Milwaukee.
- 36 *Chronic Diphtheria. G. C. Ruhland, Milwaukee.
- 37 A Lipomatous Growth in the Submucous Tissue of the Ileum and Cecum Producing Invagination, Rotation and Obstruction of the Bowel. A. H. Levings, Milwaukee.
- 38 The Tsetse Fly and Sleeping-Sickness; Other Insect Carriers of Disease. A. C. Burrill, Milwaukee.

36. Abstracted in THE JOURNAL, July 23, 1910, p. 344.

American Journal of Physiology, Boston

February

- 39 *Distribution of Glycogen Over the Liver Under Various Conditions. J. J. R. Macleod and R. G. Pearce, Cleveland.
- 40 *Metabolism of Dogs with Functionally Resected Small Intestine. E. P. Underhill, New Haven, Conn.
- 41 Influence of the Preceding Diet on the Respiratory Quotient After Active Digestion Has Ceased. F. G. Benedict, L. E. Emmes and J. A. Riche, Boston.
- 42 Respiratory Change as Affected by Body Position. L. E. Emmes and J. A. Riche, Boston.

39. **Studies in Experimental Glycosuria.**—The distribution of glycogen over the liver, particularly during ether anesthesia and following the taking of food, and the average course of postmortem glycogenolysis (i. e., its time of onset and the velocity with which it proceeds), were two points investigated by Macleod and Pearce. They found that the percentage amount of glycogen in the different lobes of the liver varies by about 5 per cent. This variation, they think, is partly due to errors in the method of estimation (Pflüger) and partly because of an unequal amount of blood in different portions of the organ. These differences become greater (a) under ether anesthesia; (b) when the liver is left *in situ* in the dead animal, but are not materially affected by absorption of carbohydrate food from the intestine. After death in an etherized animal there is usually, but not always, an acceleration in the rate of glycogenolysis; this varies in dif-

ferent lobes. So far it has been impossible to determine the exact time of onset of post-mortem glycogenolysis, but it is certainly well established within twenty minutes after death. Once established, post-mortem glycogenolysis proceeds at a uniform speed for several hours after death, being dependent solely on the amount of glycogen remaining in the viscus (temperature, etc., being constant). Post-mortem glycogenolysis is much more active in intact than in cut up liver. In cut up liver, glycogenolysis is much more rapid when the liver is in contact with blood than when it is blood-free. The greater glycogenolysis in intact liver is not due to any influence which the nervous system might have during the few minutes after death in which it could still exert an influence. Stimulation of the great splanchnic has no constant influence on the course of post-mortem glycogenolysis.

40. **Metabolism of Dogs.**—From the experimental observations made by Underhill, it is apparent that as much as 39 per cent. of the small intestine of a dog may be short-circuited without causing significant detrimental changes in utilization of the various foodstuffs, and the animal may gain in weight. This statement is equally true when observations are made either at a period shortly after operation or at a period several months later. When as much as 66 per cent. of the small intestine has been functionally resected, the nutritive condition of the animal presents an entirely different aspect. Under these conditions, fat utilization is particularly decreased and the dog displays a decided tendency to furnish negative nitrogen balances. A small though steady loss of weight is slightly noticeable. Food utilization is in general apparently much better immediately after the operation than at a later period. In no animal observed did a material increase in fat intake cause significant change in the utilization of this or other foodstuff. When about three-quarters of the small intestine of the dog has been short-circuited, food utilization for the most part is seriously impaired, at least at a period several months after the operation. This is particularly true for fat utilization. Indican elimination through the urine is not materially altered under these conditions by replacement of meat in the diet with gelatin, an observation directly opposed to that obtained with the normal dog. The animal with a short-circuited intestine displays a greater ability to utilize carbohydrate than does the normal dog. Even though the carbohydrate intake may be much, in one case several times, greater than the normal animal requires, carbohydrate utilization is complete whether the test is made shortly after the operation or months later. This observation, Underhill believes, may prove of practical importance in the dietary treatment of the human subject who has undergone extensive intestinal resection.

Memphis Medical Monthly.

December

- 43 *A Case of Gunshot Wound Through the Head. J. T. Seymour, Whiteville, Tenn.
- 44 The Arylarsonates in Syphilis and Pellagra. E. H. Martin, Hot Springs, Ark.
- 45 *Surgical Treatment of Goiter. W. T. Black, Memphis.
- 46 Making a Neurologic Diagnosis. G. G. Buford, Memphis.

43. Abstracted in THE JOURNAL, Dec. 10, 1910, p. 2090.

45. Abstracted in THE JOURNAL, Dec. 3, 1910, p. 2008.

Ophthalmic Record, Chicago

January

- 47 Small Round-Cell Sarcoma of the Orbital Cellular Tissues. W. B. Weidler, New York.
- 48 Cryptophthalmia. W. Eberhardt, Michigan City, Ind.
- 49 Parinaud's Conjunctivitis. G. F. Keiper, Lafayette, Ind.
- 50 Recollections of a Visit to Prof. Herman Snellen, Sr. E. O. Sisson, Denver.

American Journal of the Medical Sciences, Philadelphia

February

- 51 *Medicinal Treatment of Diabetes Mellitus. F. Forchheimer, Cincinnati.
- 52 *Dietetic Treatment of Diabetes Mellitus. N. B. Foster, New York.
- 53 *A Résumé of Vaccine Therapy. H. W. Stoner, Baltimore.
- 54 Malignant Disease as a Problem of Modern Surgery. J. B. Deaver, Philadelphia.
- 55 *The Thénar and Hypothenar Types of Neural Atrophy of the Hand. J. R. Hunt, New York.
- 56 *Association of Suppurative Disease of the Nasal Accessory Sinuses and Acute Otitis Media in Adults. C. F. Coakley, New York.

- 57 Metabolic Changes in Hematoporphyrinuria Not of Drug Origin. C. L. Dana, New York.
58 *A Metabolic Study of Myotonia Atrophica. R. Pemberton, Philadelphia.
59 *Chronic Influenza and Its Relation to Neuropathy. G. I. Jones, U. S. Army.

51. **Medicinal Treatment of Diabetes Mellitus.**—For ordinary cases, Forchheimer prefers arsenic, given as liquor potassii arsenitis, in ascending doses, until mild toxic effects are produced; then the dosage should be gradually reduced. In order to get the best results from arsenic, mild toxic effects must be produced. This drug is especially indicated in severe cases, but it should always be combined with diet. It may also be given for general indications, and it is very valuable in neurotic, debilitated subjects. This drug does not increase sugar tolerance, and its effects gradually disappear when it is discontinued; unlike opium, never during its administration. Furthermore, in all the patients Forchheimer has treated, repeated courses have not lost their effect on the glycosuria and diminution of acetone bodies. Hexamethylenamin is especially valuable in such patients in whom diet regulation is impossible. At present, Forchheimer has employed it for five years, and given it in 5-grain doses, three or four times a day, an amount which has been, in one instance, continually taken for four months without any bad effects. With hexamethylenamin, glycosuria is improved and tolerance is increased. He does not recommend it for severe cases without proper diet.

In so far as belladonna is concerned, Forchheimer's results were the same whether he gave atropin methylbromid, atropin sulphate or belladonna itself. In a large number of cases glycosuria, and with it acetone bodies, have diminished or disappeared and carbohydrate tolerance was increased. Indeed, some of the patients were not dieting when taking this remedy, but when it was discontinued the sugar did not reappear for some time. In several severe cases it did no good. It seems perfectly adapted to milder cases, so that in one instance, without diet, there has been absence of sugar for over a year. In one case of diabetes in a child the disease ran its usual course, notwithstanding a strict adherence to Rudisch's directions as to diet and atropin methylbromid.

52. **Dietetic Treatment of Diabetes Mellitus.**—As a means of finding the type to which an individual case belongs, Foster emphasizes the importance of a diet representing approximately 125 grains of protein and 100 grams of carbohydrate, and which is equivalent to 3,200 calories. The patient is restricted absolutely to this diet, for two days, the urine being collected during the second twenty-four hours, and estimations made for the quantity of glucose and the presence and approximate amounts of diacetic and β -oxybutyric acids. The next step in the diet arrangement depends exclusively on this analysis. A number of illustrative cases are cited and recipes are given which for the most part were contributed by the families of patients.

53. **Résumé of Vaccine Therapy.**—While the medical literature abounds in articles on vaccine therapy, they are scattered through a large number of medical journals, covering several years. With the hope that by grouping together the cases from the literature, the reader may at a glance gain a better comprehension of the work being done and the results accomplished in this line, Stoner has written this paper. Its length prohibits the making of an abstract.

55. **Neural Atrophy of the Hand.**—In addition to the atrophic paralysis of the intrinsic muscles of the hand, of myelopathic and myopathic origin, Hunt believes that a neural type should also be recognized. Those of neural origin may be separated into two well-defined clinical types, both due to a compression lesion of a motor branch of a mixed nerve. These may be appropriately designated as follows: A hypothernar type, which term indicates the site of the compression at the base of the hypothenar eminence and its relationship to the ulnar nerve. A thenar type, which also indicates the site of the compression at the base of the thenar eminence, and the relationship to the median nerve.

56. **Association of Suppurative Disease.**—Coakley believes that the severer cases of acute rhinitis accompanied by acute

infection of the nasal accessory sinuses are far more apt to be complicated by aural disease than the milder types of acute rhinitis. It is extremely rare for a patient with acute sinus disease, seen before acute otitis media has developed, to develop subsequently, during the course of the treatment, acute otitis media. Coakley is convinced that the early recognition of acute sinus disease, and appropriate treatment for its relief, will prevent many a patient from developing acute otitis media. The fact that acute otitis media usually occurs on the same side as the sinus disease inclines him to the belief that the pus from the various sinuses bathes the pharyngeal orifice of the Eustachian tube and is thence forced into and infects the tympanum. Patients with acute otitis media, associated with nasal accessory sinus disease, are more likely to develop such a degree of mastoiditis as to require a mastoid operation than patients with otitis not complicated by nasal accessory sinusitis. Coakley is inclined to believe, however, that some patients would repair the damage to the tympanum and mastoid if relieved of the added burden of the nasal disease. Patients suffering from chronic suppuration in the nasal sinuses are much less prone to acute otitis media than those having acute sinusitis. Coakley accounts for this in two ways: (a) The bacteria found in the pus in many cases of chronic sinusitis grow very poorly on any nutrient media; they seem to have lost much of their virulency. Should they be forced into the tympanum through the Eustachian tube, they may not infect the ear. (b) It is also probable that the antibodies in the chronic cases are a prevention against inciting a new infection. It is a well-known fact that after any operation, intranasal or external, in a case of chronic sinusitis, the virulency of the bacteria is greatly increased, owing to the wound secretions forming an excellent nutrient medium; hence the cellulitis or erysipelas which develops after some external operations in cases of chronic nasal accessory sinus disease.

58. **Myotonia Atrophica.**—Pemberton found that there is apparently no significant disturbance of the calcium output in muscular dystrophy; at least, in the presence of those phenomena which suggest Thomsen's disease. This can probably be inferred, though not surely, in regard to Thomsen's disease "*per se*." The creatinin output, however, under these circumstances may be considerably reduced and the creatinin co-efficient conspicuously low. Pemberton says that a consideration of the calcium, creatinin and general nitrogenous metabolism as recorded here, and in myasthenia gravis, may lead to information of value in classifying doubtful conditions of this nature and in localizing the perversions of function.

59. **Chronic Influenza.**—Jones' thesis is that influenza may be and frequently is a chronic intoxication. Chronic influenza in many respects certainly bears a close similarity to tuberculosis, and Jones has no doubt that many cases of chronic capillary bronchitis, pneumonia, bronchiectasis, etc., in which the disturbing factor was *Bacillus influenzae*, have been diagnosticated tuberculosis. This has, in a way, been confirmed by his study of three cases, which clinically presented symptoms and physical signs of tuberculosis, but in which the tubercle bacillus could not be isolated. In man, therefore, the influenza bacillus must be regarded as capable of producing pathogenic processes without the aid of other organisms. The influenza bacillus must be regarded as the most important cause of a large number of cases of respiratory infection (acute and chronic) during the interepidemic periods; and as a contributing cause in many other cases when found mixed with the pneumococcus, *Micrococcus catarrhalis*, and other organisms. Patients may carry the organism in enormous numbers for years in their sputum, just as they have been shown to carry other common representatives of the flora of the respiratory tract. Jones believes that it is without question that organic and inorganic nerve disease results from acute influenza. Whether influenza is the original cause of psychoses acting as a chronic infection, or whether it is the contributing cause to a psychopathic basis, is a question. The history of influenzal epidemics has shown statistically that the mental and nerve force is lowered for a considerable time after the disappearance of the disease epidemically.

Bacillus influenza is responsible for a majority of cases of sinusitis, otitis, salpingitis, mastoiditis, and their sequels. The organism has been recovered in the discharge of more than 50 per cent. of patients suffering from suppurative otitis media, usually mixed with the pyogenic organisms.

Archives of Pediatrics, New York

January

- 60 *Mortality During the Early Weeks of Life. A. Jacobi, New York.
- 61 *Should Eclamptic Mothers Nurse Their Newborn? J. R. Goodall, Montreal.
- 62 *Diagnosis of Pleuritic Effusions in Infancy. D. J. M. Miller, Philadelphia.
- 63 *Proctoscopy and Sigmoidoscopy in Infancy as Applied to Infectious Diarrhea. H. L. Bowditch, Boston.
- 64 *Acute Lymphatic Leukemia in Infant with Leukocyte Count of 1,330,000. B. S. Veeder, Philadelphia.
- 65 A Simple Apparatus (Weiss) for Drawing Breast Milk. C. Hermann, New York.
- 66 A Scale Pan for Simultaneously Weighing and Measuring Infants. C. Herrman, New York.

60. **Mortality During the Early Weeks.**—Discussing the means of preventing infant mortality during the early weeks of life, Jacobi says:

If you want to break up the infant mortality of the first weeks of life, see that your young doctors can be made competent and the indigent women supplied with a thoroughly informed midwife. As long as you cannot abolish dire poverty, give no rest to your legislatures, none to your health departments. No infant fit to live must be sacrificed through the absence of a competent and responsible midwife, who is taught enough of hygiene to prevent fatal mistakes and enough to know when it is time to send for a doctor. The women of the nation must be healthy, else the young will be feeble and sickly. But the vast majority of the confined women in the large cities have no time to recover. Tens of thousands get up after their confinement on the third or fourth day to do the washing and the rest. Instead of the two months, which is the shortest period in which the organs can become again normal, a few days are allowed, with scanty food and no attention, and a household to care for. A woman who has not sufficient time to recover will start and retain her pelvic inflammation and decrepitude. Her present child suffers and dwindles and dies; the future ones, if there be any, will be decrepit when born, and are counted, or will be counted, among the stillborn.

61. This article was also published in the *Montreal Medical Journal*, November, 1910, and *Surgery, Gynecology and Obstetrics*, January, 1911.

62. **The Diagnosis of Pleuritic Effusions in Infancy.**—Miller emphasizes the following points: Pleurisy with effusion is a common affection in infants under the age of 2 years. In the majority of cases it is purulent. Because of the disastrous, and even fatal, results of delay in, or mistakes of, diagnosis, it should be recognized early so that prompt—that is, surgical—treatment may be instituted. The diagnosis is often obscure, demanding, in the highest degree, carefulness, skill and experience. In arriving at a diagnosis, the antecedent affections should be fully appreciated. Of these, pneumonia is by far the most common. The general symptoms, as well as the physical signs, should be carefully weighed and considered. Of these, the latter are the more distinctive. The most reliable signs, in the order of their importance, are (1) exploratory puncture, (2) dullness with a sense of resistance, and (3) displacement of the apex. The other physical signs, so valuable in differentiating effusions in the adult, are uncertain, variable and confusing, and cannot be relied on in infants. The recognition of localized collections of fluid is especially puzzling, and demands great skill and watchfulness and a frequent resort to exploratory puncture or operation. The latter is safe, even when the lung is pierced, and particularly so when fluid is present. Notwithstanding the rare accidents that have followed this procedure, it should be employed to determine the character of the fluid, and, owing to the distressing results of unrecognized empyemas, it is imperatively demanded in all doubtful cases. The variability of the physical signs is a striking feature in infants and should always suggest an effusion.

63. **Proctoscopy and Sigmoidoscopy in Infancy.**—In twenty-four cases of infectious diarrhea, Bowditch examined the rectum and sigmoid by inspection. He found that cases of diarrhea in which there is a history of blood in the stools (especially among infants), show signs of inflammation (red, thickened mucous membrane, prominence of the follicles, ulcers of varying types, but no true membranous condition) throughout the sigmoid and rectum, especially during the acute stage

of the disease. These lesions seem to vary according to the virulence of the infection as to number and general appearance. They gradually become healed, leaving no signs nor evidence of scar tissue visible to local sigmoidal inspection in life. Bowditch also found that blood and normal intestinal mucous membrane may be present at least in the sigmoid and rectum in cases of fermental diarrhea. Of the severer types of cases, all but two patients received one or more irrigations, three had four, and two received none. No sign of any healthy appearance was found, neither did the mucous membrane of those treated, or those untreated, differ in any appreciable way. Of these cases of milder type, all but two patients received silver nitrate irrigations. Three were given each a single irrigation early in the disease, five had more than two, and at the most, three irrigations. While a gradual improvement was apparent at the end of these repeated irrigations, at no time did the mucous membrane after a single treatment show any distinct betterment.

64. **Acute Lymphatic Leukemia in an Infant.**—The count in his case, which reached 1,330,000, is the highest leukocyte count which Veeder has been able to find on record in lymphatic leukemia in childhood. E. H., female, aged 17 months, was brought to the hospital for a purpuric eruption, which was said to have appeared five days before admission. Practically no history could be obtained. The child had been breast-fed. A swelling of the neck had appeared "some time" before the eruption. The skin was pale and showed a widespread purpuric eruption varying in size from small, bright red petechial spots about pinhead in size, to large subcutaneous extravasations, cyanotic in color, and about the size of a 25-cent piece. The large extravasations were present over the forehead, extensor surface of the forearms, the tibiae, and over the spines of the lumbar vertebrae; the smaller lesions were most marked over the face, right shoulder and the legs. Pressure over the bones did not produce pain or signs of tenderness. The joints were uninvolved. The mucous membranes of the mouth were pale, but showed numerous points of hemorrhage. The saliva was slightly blood-streaked. The tonsils were large, swollen and red, almost shutting off the mouth cavity from the pharynx. The cervical lymph nodes were enlarged and palpable. They were moderately soft in consistency and about the size of a hickory nut. Pressure over the right side of the neck seemed to cause pain. The axillary and inguinal nodes were both enlarged and distinctly palpable as separate tumors about the size of lima beans.

The interesting feature of the case is the blood-examination: hemoglobin, 55 per cent.; erythrocytes, 3,370,000; leukocytes, 1,330,000. The field under the microscope was densely packed with lymphocytes, these being so numerous as practically to obscure everything else. The lymphocytes showed two distinct types, a small and a large cell variety, but between these two extremes there were so many gradations in size that an accurate subdivision of many of the cells into a large or small lymphocyte was impossible. The differential count (1,000 cells) was as follows: lymphocytes, 98.5 per cent.; polymorphonuclears, 1.2 per cent., and myelocytes, 0.3 per cent. One nucleated red cell was found during this count.

Providence Medical Journal

January

- 67 Epidemic Paralysis. H. W. Burnett, Providence.
- 68 Tuberculous Peritonitis. G. A. Matteson, Providence.

Western Canada Medical Journal, Winnipeg

January

- 69 The Standardizing of Disinfectants. S. Delépine, Manchester, England.
- 70 Junod's Blood Derivations. G. Werber, Washington, D. C.

Atlanta Journal-Record of Medicine

January

- 71 Artificial Pneumothorax in Pulmonary Tuberculosis. M. E. Lapham, Highlands, N. C.
- 72 Digestive Symptoms of Pellagra. J. N. Le Conte, Atlanta
- 73 Treatment of Anemia by Hydrotherapy. W. L. Secor, Kerville, Texas.
- 74 Obstetric and Gynecologic Repair of Perineum. R. R. Kime, Atlanta.
- 75 *Self-Medication. T. B. Rice, Greensboro, N. C.
- 76 Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.

75. Self-Medication.—As a remedy for self-medication, the dangers of which are pointed out, Rice suggests that in view of the fact that each state has passed laws regarding the practice of medicine and pharmacy and as these laws were passed primarily for the protection of the people against ignorance and quackery and not for the protection of doctors and druggists, that these should be carried out and so amended and construed by the courts as to eliminate every form of quackery. Druggists should practice pharmacy, not medicine; they should refuse to indorse any patent or proprietary medicine; they should refuse to allow any nostrum to be advertised over their names; they should refuse to distribute booklets setting forth the many wonderful "cures," many of which are indecent and suggestive. Physicians should practice medicine, not pharmacy; they should prescribe, not dispense; they should prescribe drugs, not proprietary remedies, ready prepared under copyrighted names; the U. S. Pharmacopeia should be their guide; they should refuse to be "detailed" with copyright remedies or literature regarding them. The courts should clearly define the practice of medicine and what is meant by practice of pharmacy, and they should deny the right of those who are not duly qualified to practice either or to make a pretense thereto. Ready-made or proprietary remedies carrying directions and claiming to cure or mitigate disease should no longer be held by the courts to be mere merchandise, as the courts cannot regulate the claims made by the manufacturer. This narrow conception of justice allows the manufacturer, who in many instances is neither a physician nor a druggist, to diagnose by mail and practice medicine by wholesale. It allows the seller, regardless of his position in life, moral standard or qualification, to practice both medicine and pharmacy.

Archives of Ophthalmology, New Rochelle, N. Y.

January

- 77 Relationship of the So-Called Trachoma Bodies to Conjunctival Affections. H. Noguchi and M. Cohen, New York.
- 78 Occurrence of the Prowazek and Halberstaedter Bodies in the Normal Conjunctiva of Man and Apes. G. Addario, Palermo, Sicily.
- 79 Cataract Operations and the Preparation of the Surgeon. W. E. McKechnie, Etawah, India.
- 80 Enlargement of the Blind Spot, an Early Symptom in the Diagnosis of Optic-Nerve Affections, Due to Disease of the Posterior Nasal Accessory Sinuses. J. Van Der Hoeve, Utrecht, Netherlands.

Archives of Internal Medicine, Chicago

January

- 81 *The Spirilla of Relapsing Fever. H. A. Christian, Boston.
- 82 *Diphtheria Bacillus-Carriers. H. Page, Manila, P. I.
- 83 *Study of Streptococci with the Complement-Fixation and Conglutination Reactions. H. F. Swift and W. C. Thro, New York.
- 84 *Fifty Examinations of Cerebrospinal Fluid with Special Reference to the Cell-Count. A. Bybee, Elgin, Ill., and W. F. Lorenz, Kankakee, Ill.
- 85 *Schürmann's Color Test for Syphilis. R. G. Owen, Detroit.
- 86 *Is Hemoglobinuric Fever a Manifestation of Malaria or a Disease *Sui Generis*? C. F. Craig, Washington, D. C.
- 87 *The Ventilation of Sleeping Cars. T. R. Crowder, Chicago.

81. Spirilla of Relapsing Fever.—In the circulating blood of a patient suffering from relapsing fever, Christian found spirilla on the second and third days of a three-day paroxysm of fever. These spirilla were inoculated successfully into monkeys and white rats. Both failed to show recurrence of the organism after the first infection. The lesion produced in monkeys consists of an accumulation of polynuclear leukocytes and endothelial cells in the sinusoids of the liver, and a focal infiltration of the spleen with polynuclear leukocytes. The spirilla appear to be removed from the circulation in the monkey by phagocytosis, to a slight extent in the liver, more actively in the spleen.

82. Diphtheria Bacillus-Carriers.—Pure culture of *Staphylococcus pyogenes aureus* sprayed in throats has, in seven cases, now reported, destroyed the Klebs-Loeffler bacilli in carriers in from forty-eight to seventy-two hours. Page adds one case and says that this method of treatment is harmless and should be used in all cases of carriers. It has been found useful immediately after convalescence from an acute attack. He suggests that it is probable that its use during an acute attack of diphtheria would be successful, but as yet it is inadvisable to attempt its use in any save mild acute cases.

He also urges that a sanitary survey should be made after every diphtheria outbreak to eliminate carriers, whether they be human or animal. By animal inoculation a distinction should be made between the virulent and the "morphologic" carrier. Four negative daily cultures are necessary before quarantine is raised. Treatment of carriers has heretofore proven useless. Local measures, while necessary, fail to influence the virulence or duration of the bacilli. Antitoxin has no influence on the bacillus in a carrier.

83. Study of Streptococci with the Complement-Fixation and Conglutination Reactions.—The conglutination reaction in the authors' hands has not proved of much greater value in the differentiation of various strains of streptococci than the agglutination reaction. Although the conglutination and agglutination reactions are specific for streptococci, they are not specific for individual strains of streptococci. Their experiments, however, are not sufficient in number for definite conclusions on this point. They found that the best extract of streptococci for use as antigen in the complement-fixation test is that prepared by drying the washed organisms, grinding and shaking them for twenty-four hours. Immune bodies, specific for different strains of streptococci, can be demonstrated by means of the complement-fixation test. Swift and Thro suggest that it is possible by the use of this test we have a means of studying specific streptococcus infections.

84. Examination of Cerebrospinal Fluid.—In view of the fact that the technic employed for the examination of the cerebrospinal fluid varies greatly in the hands of the individual investigator and gives, in consequence, such discordant results, Bybee and Lorenz endeavored to develop a technic which shall have the advantages of uniformity and reliability, together with the simplicity requisite for ordinary bedside employment. Their technic differs from that of Fuchs and Rosenthal in that they employ a red-cell pipette, drawing the original stain to 0.7, and wiping away the excess of stain from the point of the pipette. The stain is then drawn up into the diluting-chamber in such a manner that it evenly coats the inner wall. They hold that the French or centrifuge method for examination of the cells in the cerebrospinal fluid is not reliable for numerous reasons: 1. The cells are not always entirely thrown down, even by prolonged centrifugation. 2. It seems probable that this failure may be due to the difference in density of cells and fluid being insufficient at all times. 3. It is impossible to collect in a pipette all the cells which are thrown down. 4. The centrifugation results in clumping of the cells, which cannot be entirely overcome. This method requires the use of a centrifuge and is consequently not clinical. The counting-chamber method, when modified so that the red blood cells do not stain, presents none of the above objections. It requires only the ordinary blood-counting apparatus. The amount of fluid necessary for the counting-chamber method is at a minimum. In their hands all clinically and cytologically positive cases of general paralysis of the insane gave a positive cell-chamber count. With the French method only sixteen positive results were obtained and twenty-four negative results. In connection with this point they call attention to the frequent statement in the literature that a single puncture is not reliable as a negative result, and that in none of their cases was more than one puncture used. Differential cell counts at present give but little additional information, except in so far as they distinguish a lymphocytosis from a leukocytosis. While this paper deals more especially with the cytologic problems, it is worth noting that Noguchi's butyric acid test gave thirty-eight positive results in forty clinically and cytologically positive cases of general paralysis of the insane.

85. Schürmann's Color Test for Syphilis.—While, in Owen's opinion a simple color test would be an ideal one, the method of Schürmann does not provide us with such a test.

86. Hemoglobinuric Fever.—That hemoglobinuric fever is not due to malaria Craig believes to be proved by its geographic distribution; by the fact that it occurs in individuals who have never suffered from malaria; and by the fact that, in many instances, neither before, during, nor after an attack can plasmodia be demonstrated in the blood; while even at

autopsy no trace of malaria can be found. That the disease is not due to quinin is proved by the fact that it occurs in individuals who have never taken the drug, and that in many regions where the drug is extensively used the disease is unknown. For the following reasons Craig believes that it is due to a specific organism: its geographic distribution; its numerical disproportion to malaria wherever it occurs; its occurrence in epidemics; the character of the pathologic lesions; its symptomatology; the lack of conclusive evidence that it is due to malaria; and its analogy with other well-known infectious diseases. He also calls attention to the peculiar relation that this disease apparently bears to the hemoglobinuric fever of cattle and to piroplasma infection in general.

87. Ventilation of Sleeping-Cars.—Even under the older applied principles of ventilation, the air-supply of sleeping-cars, as determined in Crowder's study, is ample under nearly all conditions. The average carbon dioxide in the air of running cars falls well within the limits of contamination permitted by the earlier investigators, and it is relatively rare that the individual observations show more than 10 parts in 10,000. In the light of the newer conceptions, which have as yet been applied in practice only to a very limited extent, this air-supply is ample under all conditions observed. No danger to health is to be apprehended under the conditions ordinarily obtaining even in still cars. They are occupied only for short periods as a rule and are not uncomfortable if kept cool. It would seem that the results obtained by the type of exhaust ventilator investigated by Crowder, which is now a part of the standard equipment of Pullman cars, are entirely adequate to meet the demands of hygiene, and that those difficulties and discomforts which do sometimes arise are due to other causes than lack of a sufficient amount of fresh air or to excessive vitiation. It is extremely unlikely that increasing the air-supply, which now amounts to from six to ten or more times the cubic content of the car each hour, and must maintain considerable motion of the atmosphere, would aid in any other way than by making overheating more difficult to bring about. Overheating is the paramount evil. It is the thing chiefly to be guarded against in the attempt to maintain comfort and good hygiene.

Annals of Ophthalmology, St. Louis

January

- 88 Sloughing Corneæ in Infants. S. Stephenson, London.
- 89 Hemichorea, Hemiatopia, Hemiparesis and Dilated Pupil, Probably Due to a Lesion Near the Nucleus Ruber. C. K. Mills, Philadelphia.
- 90 Chronic Cyanosis with Polycythemia. W. R. Parker and G. Slocum, Detroit.
- 91 *Some Unusual Ophthalmic Cases. C. T. Veasey, Spokane, Wash.
- 92 Leukosarcoma of the Iris Removed by Iridectomy and Useful Vision Retained. J. Thorington, Philadelphia.
- 93 Marginal Degeneration of the Cornea. W. Zentmayer, Philadelphia.

91. Unusual Ophthalmic Cases.—Veasey reports five cases: (1) reading with the lines placed vertically; (2) papilloma of the corneal limbus; (3) papilloma of the lacrimal caruncle and conjunctiva; (4) sarcoma of the choroid with marked orbital cellulitis; (5) metastatic panophthalmitis from a pelvic abscess.

Buffalo Medical Journal

February

- 94 Mutual Relations of Physician and Layman. G. W. Wende, Buffalo.
- 95 What Is the Physician's Duty in the Prevention of Moral and Social Diseases? F. W. Sears, Syracuse.
- 96 *The Construction of a Vagina. W. L. Wallace, Syracuse.

96. The Construction of a Vagina.—Wallace reports three cases. In one of these he pulled the mucous membrane of the vulva up to the cul-de-sac of Douglas, splitting the labia minora, making them single instead of double layers, and thereby getting longer mucous flaps. This made a vagina of mucous membrane the size and length of two fingers. In the other two cases he used intestine to make a vagina after the method of Baldwin. Hereafter, in using the ileum for the vagina, instead of bringing down the middle of the gut, stitching it to the vulva and opening it, after the manner of Baldwin, Wallace says he would bring down the opened ends of the gut and sew them to the vulva, leaving the closed end

of the folded gut to form the roof instead of the entrance to the new vagina. This would save the necessity of closing and turning in the two ends, which procedure takes time and also uses up nearly an inch in length at each end. It also saves the necessity of opening the folded end to sew it to the vulva. This method would also make a smooth roof for the new vagina and would make the application of the clamp much easier, as the full length of the septum would be cut out. The intestine should be drawn down until the mesentery is taut, so that the new vagina will not prolapse; and any surplus mucous membrane should be cut away. Of course the mesentery must not be pulled down enough to interfere with the blood supply. Instead of using a Murphy button anastomosis of the divided sigmoid, Wallace prefers to tie a very large tube into the proximal end and then slightly invaginate the proximal into the distal portion of the gut, using fine silk to close the joint, and approximate the peritoneum, as suggested by Mayo, and as since used by Wallace in similar cases.

Journal of Advanced Therapeutics, New York

January

- 97 *Treatment of Inflammation Not Complicated or Caused by Infection. W. B. Snow, New York.
- 98 *Splenic Leukemia Successfully Treated by Modern Methods. C. W. Strobell, Rutland, Vt.
- 99 *Report of the Committee on Standardization. W. B. Snow, New York.
- 100 Roentgen-Ray Tubes. B. E. Baker, Boston.
- 101 Florida as a Health Resort. W. L. Seer, St. Petersburg, Fla.

97, 98, 99. Abstracted in THE JOURNAL, Oct. 1, 1910, p. 1223.

Kentucky Medical Journal, Bowling Green

February 1

- 102 *Acute Nephritis. W. R. Thompson, Mount Sterling.
- 103 *Chronic Nephritis. S. L. Beard, Shelbyville.
- 104 Pyelonephritis. O. P. Nuckols, Louisville.
- 105 Remote Sequelæ in Mistreated Syphilis. J. T. Windell, Louisville.
- 106 *Acute Gastro-Intestinal Infection in Infants. J. M. Rees, Cynthia.
- 107 Prophylaxis and Treatment of Scarlet Fever. J. S. Lock, Barbourville.
- 108 Typhoid in Children. F. D. Cartwright, Bowling Green.
- 109 Measles. T. A. Frazer, Marion.
- 110 Prophylaxis and Treatment of Pneumonia. J. C. S. Brice, Flemingsburg.
- 111 The Finger as an Aid in Complete Enucleation of Tonsil. W. J. Thomasson, Newport.
- 112 Importance of a Correct Diagnosis. D. G. Simmons, Adairville.
- 113 Intestinal Obstruction. M. S. Allen, Stithton.
- 114 The Tubercle of Tuberculosis: Its Pathologic Significance in the Physical Organization and Relation to the Bacillus Tuberculosis. J. Glahn, Owensboro.
- 115 Puerperal Eclampsia. U. V. Williams, Frankfort.
- 116 Diseased Tonsils and Their Complete Removal by Tonsillectomy. D. M. Griffith, Owensboro.

102, 103, 106. Abstracted in THE JOURNAL, Oct. 22, 1910, pp. 1493 and 1495.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis

February 1

- 117 Problems of Medical Education in Minnesota. S. M. White, Minneapolis.
- 118 Management of the Puerperium. F. Leavitt, St. Paul.
- 119 Death Certificates: A Review of the Subject as Viewed from the Post-Mortem Room. H. E. Robertson, Minneapolis.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

January 28

- 1 History of Yellow Fever in West Africa. R. Boyce.
- 2 *Puerperal Eclampsia: A Comparison with Venom Poison and a Suggestion for Treatment. H. L. Murray.
- 3 Scopolamin-Morphin Anesthesia in Labor. J. R. Freeland and B. A. H. Solomons.
- 4 *Cesarean Section for Dystocia Due to Ventrofixation of the Uterus. A. Routh.
- 5 Absence of the Fallopian Tubes and of Menstruation, Associated with Recurrent Peritonitis. W. G. Spencer.
- 6 Prolapse of the Inverted Uterus During Labor. A. S. Hendrie.
- 7 Treatment of Cancer of the Rectum. H. Cripps.
- 8 *Treatment of Rheumatoid Arthritis by Vaccines. G. A. Bannatyne and J. Lindsay.
- 9 The Proposed Coroner's Bill. J. Griffiths.
- 10 The Pitfalls of "Mental Tests." C. S. Myers.

2. **Puerperal Eclampsia.**—Believing that the pregnant woman is protecting herself against a poison directly comparable to a venom, Murray suggests that there may be some therapeutic use for antivenin in eclampsia or the pre-eclamptic state. Judging from its action in snake poisoning, the likelihood of usefulness is very much greater in the latter.

4. **Cesarean Section for Dystocia.**—Routh calls attention to eight of these cases which, he believes, show that where ventrofixation causes dystocia, living children can be delivered with small risk to the mother by Cesarean section, after other attempts at delivery have been made, provided that antiseptic precautions have been carefully adopted. The only death was caused by a bowel complication present before the operation.

8. **Vaccines in Rheumatoid Arthritis.**—In two cases cited by Bannatyne and Lindsay, the results of serotherapy have been so satisfactory that they are encouraged to hope that in vaccines a cure may be found for many acute cases of rheumatoid arthritis. In both cases the micro-organisms were obtained from blood taken from veins of the antecubital fossa of the arm, after every precaution had been taken to ensure the impossibility of skin contamination. The media on which the cultures were obtained was blood-agar, and during the period of growth the incubator registered 35 C. In one case a growth was observed on the third evening, the appearance of the colonies being that of semi-transparent points. The appearance microscopically was that of a diplococcus, aggregated in clusters. The stain was retained after employing Gram's method. In the second case, a growth was observed on the second evening, in the form of single colonies less transparent than in the first case. These colonies became more abundant twelve hours later. Microscopically, the organism was found to be a micrococcus, arranged in clusters. The microorganisms were Gram-positive.

10. **Pitfalls of "Mental Tests."**—Myers urges extreme caution, at least for the present, in standardizing "mental tests" and in popularizing their use. He believes that in some forms, no doubt, tests can be usefully applied *en masse*—for example, with the object of determining the standard of intellect which a boy of given age should attain in order to class him as suitable or unsuitable to be taught in an "ordinary" or a "special" school. But, he says, such tests are "tests of production," not "mental tests." They determine how much an individual can work, how much he knows—not how he works, how he knows. A man's productivity, of course, is what we want to ascertain in every-day life. We do not care how a man comes to use or to acquire his powers; we are content with a mere dynamometric or other record of his powers. From this aspect, mass experiments must have some value. But this aspect cannot properly be called the psychologic aspect.

Lancet, London

January 28

- 11 The Hospital Unit in University Work. W. Osler.
- 12 *Auscultation of Joints. A. E. Garrod.
- 13 Transperitoneal Cystotomy for Tumor of the Bladder. S. Pringle.
- 14 *Puerperal Convulsions, or Eclampsia. W. Alexander.
- 15 The Role of Auto-Inoculation in Medicine. C. Riviere.
- 16 Cerebral Tumor Affecting the Under Surface of the Corpus Callosum and Filling the Right Ventricle. R. T. Williamson.
- 17 Subluxation of the Knee. J. J. W. Evans.
- 18 Atonic Dilatation of the Stomach. P. A. Mitchell.
- 19 Power of Speech in Cut-Throat. D. H. Metha.

12. **Auscultation of Joints.**—Garrod claims for auscultation of joints that this method is capable of affording early warning of troubles in articular structures and sometimes reveals the commencement of disease in joints, which to inspection and palpation appear to be normal, and which may even cause no discomfort to their possessor. Again, the method gives promise of help in the differentiation of articular diseases, and in distinguishing between those in which the cartilages and bones are implicated, and those in which the synovial membranes and soft parts around the joints alone suffer.

14. **Puerperal Convulsions.**—Thirty-nine cases are reported by Alexander: thirty patients were primiparæ and five multiparæ, in three the number of the pregnancy was unknown. In

four cases the urine contained only a trace of albumin, and two of these proved fatal. In five cases the fits began before parturition set in; in five cases, during the first stage of labor; in six cases, during the second stage; in one case, in the third stage; in fifteen cases the attacks began postpartum, and in one case, Alexander has no clue to the time of onset. Of the postpartum onset, the times varied from a few minutes after the termination of the labor to as much as eight days after. In only five cases did the fits cease on delivery. Of the thirty-eight cases recorded, the mortality was 34.2 per cent. Alexander believes that the disease is very much on the increase, and that the mortality has increased very much in proportion.

The hastening of delivery was adopted in only seven cases. In five cases forceps were used, and one of these patients was suffering from pneumonia at the time and died from that disease. In one case artificial dilatation of the os and version effected the delivery of a decomposed fetus. The mother died suddenly, a few hours later, with a cardiac clot. In another transverse case the patient recovered after-delivery by version. The delivery was natural in twenty-nine cases. Two deaths occurred in seven cases of operative emptying of the uterus, or 28.5 per cent., and nine deaths in twenty-nine cases in which Nature was not interfered with, or 31 per cent. Routine treatment consisted of purgatives, such as jalap, magnesium sulphate, calomel and croton oil; diaphoretics, such as blanket bath, hot packs, pilocarpin, hot poultices over kidneys, saline diuretics, hot drinks; nerve sedatives, such as bromids, morphin, ehloral in varied doses, fomentations to loin, dry cupping over kidneys, venesection of arm, ice to head and thyroid powder, chloroform and oxygen inhalations.

Clinical Journal, London

January 25

- 20 Surgical Cases Modified by Insurance. G. R. Turner.
- 21 Vertigo. S. Scott.
- 22 Cancer of the Rectum. F. C. Wallis.

Medical Press and Circular, London

January 18

- 23 Mumps and Its Complications. V. Hutinel.
- 24 *Treatment of Cancer of the Rectum. H. Drummond.
- 25 *Ehrlich's Salvarsan Treatment and the Biotherapy of Syphilis. L. Jacquet.
- 26 *Present Position of the Treatment of Plague. J. C. Thomson.

January 25

- 27 Fibrosclerotic Paranephritis. E. Zuckerkandl.
- 28 Operative Treatment of Tuberculous Meningitis. A. J. Cleveland.
- 29 New Points in Urine Analysis. J. B. Smith.
- 30 Notes on Vision. W. R. MacDermott.

24. **Treatment of Cancer of Rectum.**—The ideal operation, according to Drummond, is one which removes the rectum and the lower iliac colon with the lymphatics, glands, and mesentery, and replaces the rectum by bowels drawn down from above through the anal sphincter. This, however, is seldom possible. In early cases, and with cancer high up without visible or palpable glandular infection, a more limited removal and anastomosis by the invagination method, is Drummond's operation of choice. In the ordinary case, permanent colostomy and an extensive abdomino-perineal operation offers the best chance of permanent success. In stout and muscular subjects, Kraske's operation is less dangerous than this, and the results, for the present, compare with it sufficiently favorably to justify its employment. The simpler perineal operations should be reserved for cases in feeble persons and those in whom the disease is limited to the neighborhood of the anus, or the anal canal. At the same time, or shortly after, the glands of both inguinal regions should be excised. Blood-loss, shock and sepsis may be minimized, and the perineal operation can be more rapidly completed, by leaving hemostatic forceps on the bleeding vessels, and using few or no sutures for the wound. Drummond says that further pathologic information is required, especially as to the direction in which the disease is most likely to spread, before more definite rules can be laid down for the treatment of cancer of the rectum. Colostomy, he declares,

is never fair treatment of cancer of the rectum, and should be reserved only for cases in which there is definite obstruction or for the relief of fistulous openings.

26. Treatment of Plague.—Thomson's remarks are founded on an extensive personal experience of the disease in Hong Kong. Speaking first of the general management of a case of plague, he says that while pneumonic plague is a highly infectious disease requiring the strictest isolation, bubonic and septicemic plague (far commoner than the pneumonic type) is not infectious, and might safely be treated in the wards of general hospitals or in the patients' own homes. When plague prevails, the extermination of rats is of primary importance; the methods of doing so which have proved most efficacious are traps and poisons. During the illness, the disinfection required is very much the same as in a case of typhoid. Nurses should be warned of the possibility of infection through an abrasion of the skin, and any abrasions present ought to be protected by collodion. Alcoholic stimulant (4 oz. of brandy daily) is generally required, and cardiac stimulants, digitalis, strychnin, strophanthus, are constantly required. The disease is essentially an asthenic fever. It is also important to attend to the bladder, as retention of urine is common, and to cleanse the mouth.

According to Thomson there is no really satisfactory specific treatment for plague, and for the most part, symptomatic treatment is an essential feature. As to the specific methods of treating the disease, Thomson relates his experiences with carbolic acid, given in large doses—12 gr. every two hours, or 144 gr. daily. If the drug was pure, carboloria rarely occurred, and when it did, all that was necessary was to intermit a few doses. He has treated a series of 143 patients in this way, with a mortality of 30 per cent. In Hong Kong the mortality of cases in which serotherapy was used was 80 per cent.; in Oporto, 14 per cent.; in Brisbane, 40 per cent. In India, taking selected cases, the mortality had been reduced from 74 to 63 per cent. by the use of the Yersin and Roux serum, and in private cases to 40 per cent. In Hong Kong, Thomson has never had such good results, though employing the same serum. Haffkin's prophylactic is of great value, he asserts, and should be given to nurses and contacts; it prevents the disease, even if given during the inoculation period. The third line of specific treatment is by organotherapy. Epinephrin is said to have reduced the mortality to 37 per cent. in a reported series of cases, and the success was enough to warrant further trial.

British Journal of Children's Diseases, London

January

- 31 Congenital Obliteration (or Congenital Atresia) of Bile Ducts with Cirrhosis of Liver. F. P. Weber and G. Dorner.
- 32 Enlargement of the Tubercle of the Tibia. R. C. Elmslie.
- 33 A Retrospect of Otology, 1910. M. Yearsley.

Journal of Obstetrics and Gynecology of the British Empire, London

January

- 34 Cesarean Section in the United Kingdom. A. Routh.

Archives Générales de Médecine, Paris

December, LXXXIX, No. 12, pp. 705-746

- 35 *Subscapular Friction Sounds. (Frottements sous-scapulaires.) M. de Laroquette.
- 36 *Sarcoma of the Medulla Oblongata. (Sarcomes du bulbe.) O. Claude and E. Chabrol.
- 37 Twenty-Five Cases of Epidemic Meningitis. R. Voisin and G. Paiseau.

35. Subscapular Friction Sounds.—A friction sound or cracking under the scapula when the shoulder is moved has been regarded as a sign of something wrong in the bone or periosteum but Tedeschi, in 1908, called attention to it as a sign of a tuberculous lesion in the lung below, and still more recently Rénon stated that it has considerable diagnostic importance for differentiation of pulmonary tuberculosis. Laroquette has been studying it on an extensive scale, examining 824 different individuals, including 161 with various diseases, mostly tuberculosis, and 43 children. He found the sounds pronounced in 8.2 per cent. of the 620 healthy persons examined; in 18.6 per cent. of the sick, and only once in a child. He also had occasion to examine post mortem several individuals who during life had had the sound very distinct.

In his eighty-two cases with positive findings, the sounds were audible on both sides in forty. From this experience he concludes that the sound in itself has absolutely no pathologic importance; it is similar to the cracking sound heard sometimes in other joints as they are moved although the joints are and remain apparently healthy. The sounds are the result of contraction of certain muscles; when the joint is moved passively there is no sound. After the individual's attention is once attracted to the sound he notices it as he moves his shoulder and is liable to grow uneasy about it and imagine sensations in the joint. When the sounds are detected in a person who has never noticed them particularly, the physician should refrain from calling attention to them. The nervous system should be given general treatment if necessary.

36. A Sarcoma of the Medulla Oblongata.—At necropsy a sarcoma as large as a walnut was found in the medulla oblongata, entailing inflammation and atrophy of the cerebellum. The main complaints had been difficulty in swallowing and pain in the back of the neck. The first symptoms had been observed four years before. The velum was paralyzed and a sudden attack of dyspnea developed in which the patient succumbed. In a second case, death occurred suddenly after a week or so of symptoms diagnosed in the hospital as cerebrospinal meningitis. In ninety-two cases of tumors in the medulla oblongata on record, they proved to be sarcomas in only seventeen instances. These patients were between the ages of 25 and 40 and were mostly women; and the tumor was primary, without metastasis. Such tumors compress and destroy the nervous elements; they do not diffuse but remain well circumscribed. The first signs of trouble come on abruptly and the syndrome develops by repeated exacerbations, death occurring generally suddenly from action on the cardiorespiratory centers. Secondary hemorrhages are liable to occur in the growth. The profound destruction and successive involvement of the different bulbar nuclei induce a clinical picture very different from that of glioma; this wealth and multiplicity of the symptoms give the clue to the nature of the tumor, no other tumor in the medulla revealing its presence so unmistakably.

Annales de l'Institut Pasteur, Paris

December, XXIV, No. 12, pp. 921-984

- 38 Preservation of "Soluble Toxins." M. Nicolle and C. Truche.
- 39 Experimental Research on Tetanus Toxin and Antitoxin. M. Nicolle and H. Mouton.
- 40 Action of Heat on Antitoxins. M. Nicolle and C. Jouan.
- 41 Individuality of Cellase and Emulsine. G. Bertrand and A. Compton.
- 42 *Anaphylaxis After Spinal Serotherapy and Its Prophylaxis. (L'anaphylaxie rachidienne et les moyens de s'en préserver.) A. Besredka and S. Lissowsky.
- 43 Certain Hematozoa of the Congo. (Trypanosomes, Microfilaires, Leucocytozoaires.) A. Lebeuf and Ringenbach.
- 44 Pyocyanase in Treatment of Anthrax. L. Fortineau.
- 45 Research on Antispermatogenic Serums. J. G. Fitzgerald.

42. Prophylaxis of Accidents in Serotherapy.—Besredka and Lissowsky state that recently in Paris alone there have been ten deaths which they ascribe to injection of antimeningococcus serum into the spinal canal. Hutinel has recently also called attention to four fatalities after intraspinal injection of the serum. Their experimental research has shown, however, that the phenomena of anaphylaxis to which they ascribe these accidents can be prevented by fractioning the serum to be injected. Their experimental research has shown that vaccination with repeated minute doses is borne by the guinea-pigs, while it is rapidly fatal if the vaccine is given in a single dose. They found that every guinea-pig sensitized by subcutaneous injection of a serum reacts with anaphylaxis when a new injection of the same serum is made into the spinal canal. However, there are no signs of anaphylaxis if the serum is fractioned in minute doses, whether administered by way of the skin, peritoneum, spine or veins. This occurs most rapidly with intravenous vaccination and most slowly with the subcutaneous; immunity is obtained with the intravenous route in fifteen minutes, while with the subcutaneous four hours are required. The antianaphylactic immunity thus acquired, after vaccination by the spinal route, does not last over twelve or fifteen days. They describe a number of series of experiments: For instance, a guinea-pig

weighing 420 gm. was vaccinated with 0.5 c.c. of serum injected into the jugular vein. Ten minutes later 0.14 c.c. was injected into the spinal canal. No signs of disturbances were observed although this is a rapidly fatal dose for unvaccinated guinea-pigs. The absolute protection against anaphylaxis was thus complete in ten minutes with the intravenous technic. An untreated animal given an intraspinal injection of the serum is sure to show signs of fatal anaphylaxis if another injection is made.

Presse Médicale, Paris

January 14, XIX, No. 4, pp. 25-40

- 46 *Dwarfs. (Nanisme et chétivisme.) H. Meige and A. Bauer.
47 The Urine in General Paresis. (Les échanges urinaux chez quelques paralytiques généraux.) H. Labbé and A. Gallais.

46. Dwarfs.—Meige and Bauer have been studying dwarf growth which they classify as total, when the individuals are merely well proportioned miniatures of ordinary adults; rachitic, myxedematous and achondroplasia. In the myxedematous type the tendency to dwarf growth can be cured by thyroid treatment, so that the physician may be able to remove the stigma of deformity from such patients.

Revue de Chirurgie, Paris

January, XXXI, No. 1, pp. 1-142

- 48 Sacrococcygeal Teratoid Tumor: Sixth on Record. (Angiosarcome à type périthélial développé aux dépens de la glande de Luschka.) F. Curtis and R. Le Fort.
49 Skin Grafting by Total Transplantation: Large Flap Without Pedicle: Eleven Cases. (Greffes épanché par transplantation totale ou lambeau non pédiculé.) W. Dubreuilh and P. Noel.

Semaine Médicale, Paris

January 25, XXXI, No. 4, pp. 37-48

- 50 Indications and Technic for Anastomosis Between Bile Ducts and Intestines. F. Lejars.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXXI, No. 2, pp. 317-573

- 51 Surgery of the Prostate. P. Kayser.
52 Typhlitis and Ascending Colitis. G. Pallin.
53 Intestinal Lipoma. Ehrlich.
54 Horizontal Fracture of the Skull. (Zur Kasuistik der Deckelfrakturen des Schädeldaches.) Ehrlich.
55 Otto-Chrobak Deformity of the Pelvis. (Fall von intrapelviner Vorwölbung und centraler Wanderung der Hüftpfanne.) Schertlin.
56 *Varicose Veins in Legs. (Pathogenese und zweckmässigste Behandlung der Krampfader der unteren Extremitäten.) G. Moro.
57 Survival of Gonococcus in the Prostate. (Beständigkeit des Gonococcus in der Prostata und die klinischen Folgen der Blenorragie.) G. Moro.
58 Gastropexia. G. Moro.
59 Surgery of the Duodenum. E. D. Schumacher.
60 Surgery of the Bronchus. M. Tegel.
61 Billous Peritonitis Without Perforation of the Bile Ducts. (Gallige Peritonitis ohne Perforation der Gallenwege.) Schievelbein.

56. Treatment of Varices on the Legs.—Moro reports forty-two patients with serious varicose disturbances all entirely cured by operative treatment according to Novaro's technic. This aims to interrupt the pathologic reflux of venous blood from the deep into the superficial veins which is the cause of the trouble. This pathologic reflux may occur solely at the point where the saphena magna empties into the femoral vein, or the intercommunicating veins may be involved in the valvular insufficiency between the deep and the superficial systems of veins. Any operative measure which acts merely on the superficial veins does not attack the real source of the trouble. Resection of the saphena magna at its junction with the femoral vein answered the desired purpose in full in 44 per cent. of his forty-two cases; in the others this operation had to be supplemented by resection of one or more of the intercommunicating veins. He tabulates the details of his cases and reports research on the cadaver which demonstrated that sudden violence was unable to force the valves to a point to induce varices; long-continued action of the injurious influences was necessary for this. He concludes his article by urging prompt intervention without waiting for the varicose disturbances to become very pronounced. In the early stages the Trendelenburg method of resecting the saphena magna at its junction with the femoral vein will cure the tendency permanently and prevent extension of the trouble to the intercommunicating veins.

Berliner klinische Wochenschrift

January 16, XLVIII, No. 3, pp. 101-152

- 62 *Polycythemia. R. Staehelin.
63 *Dietetic Treatment of Cardiovascular and Kidney Disturbances. (Karellkur, Oertelkur, Widai-Strausskur.) A. Magnus-Levy.
64 *Venesection and Saline Infusion in Treatment of Skin Disease. (Anwendung von Aderlass und Kochsalzinfusion bei der Behandlung von Hautkrankheiten.) C. Bruck.
65 *Landry's Paralysis. G. C. Bolten.
66 *Anaphylaxis After Serotherapy. E. Allard.
67 Improved Antiformin Technic for Determination of Tubercle Bacillus. (Ergänzung der Antiforminmethode zur Anreicherung der Tuberkelbacillen.) Lorenz.
68 *Tryptophan Test of Gastric Cancer. (Zur Diagnose des Magenadenoms mittels der Fischer-Neubauer'schen Methode der Spaltung des Glycyltryptophans.) H. Ley.
69 Radiology of the Stomach. (Ein Wort über den Wismutmagen.) B. Stiller.

62. Polycythemia.—Staehelin reports that he has encountered seven pure cases of polycythemia with abnormally high blood-pressure and four others complicated with emphysema, heart defect, arteriosclerosis or nephritis—all in the course of one year. There was a history of syphilis in only one case. Permanent improvement or cure was not observed in any instance. He tabulates the various details for comparison and states that differentiation has not been of much use so far as treatment is concerned, as no measures gave permanent benefit, but yet differentiation is important on account of the prognosis. This is much more unfavorable than for neurasthenia, with which the disturbances might be confounded, or the patient might be accused of exaggeration or malingering. In the severe cases all the visible veins are turgid and the skin and mucosa are a cyanotic red, redder than with cyanosis and emphysema. The majority of the patients looked like healthy persons just after a hearty meal or severe muscular exercise. In the milder cases the patients' complaints had invariably been ascribed to neurasthenia.

63. Dietetic Treatment of Kidney and Heart Disease.—Levy regards an exclusively milk diet as essentially a salt-poor diet, but he warns that large amounts of milk contain appreciable quantities of salt. He gives a number of examples to show the great efficacy of prolonged prohibition of salt in treatment of severe parenchymatous nephritis with rebellious dropsy; two such patients had previously been systematically treated for six months with all other measures without improvement. He then put them on a mixed diet free from salt and in two months the dropsy had vanished. During this time one patient eliminated 300 gm. of salt; at first the kidney had not been permeable for salt, but in the course of the three weeks in which the kidney had been relieved of the task of salt elimination, it recuperated so that it eliminated constantly more and more, accompanied by the water to hold it in solution, and by the second month this patient's weight had declined by 66 pounds. This patient had not taken over 2 or 3 gm. of salt daily in the food during this period. If the restriction had been less severe and less systematically carried out, so that 5 or 6 gm. of salt a day had been permitted, the patient probably would never have been relieved of the dropsy. These cases not only emphasize the efficacy of the salt-poor diet after failure of all other measures, but they show the long course of the treatment necessary. Kidney patients of this class do not lose the dropsy so fast as patients with heart disease. The salt-poor diet may be valuable also with cirrhosis of the liver and heart disease although the mechanism of its action is different in such cases, the benefit being due to improvement in the conditions in the circulation as the superfluous salt is dropped from the diet. Reduction of the intake of albumin may also prove useful, as it spares the kidneys extra work. Restriction of fluids may prove efficient but only indirectly, as the patients unconsciously limit the intake of food and especially of salty foods, to prevent thirst when they are not allowed to drink water freely.

64. Venesection and Saline Infusion in Treatment of Skin Diseases.—Bruck has been treating eight patients with various skin affections by venesection, withdrawing about 250 c.c., following this with intravenous infusion of 500 c.c. of physiologic salt solution, his aim being to wash out the toxins in the blood which he regards as responsible for the skin disease. The effect was favorable in generalized pruritus, urticaria, erythema multiforme with effusion, and herpetiform dermatitis; no effect was observed in psoriasis and in a case of

diffuse eczema. This "lavage of the blood" not only washes out toxins but stimulates the blood-producing organs, and he thinks that it is liable to prove useful in a number of other skin affections in which the action of toxins may be assumed as a factor.

65. Landry's Paralysis.—Bolten reports two cases of typical paralysis of the Landry type, both confirming the assumption that the paralysis is the result of intoxication of the spinal cord, the action of the toxin interfering with the functioning of the spinal and bulbar centers, while it is not sufficient to be actually destructive. The toxins seem to leave the sensory neuron intact and merely to check motor functioning. Treatment of one patient on this hypothesis resulted in a complete cure. The aim was to substitute the cerebrospinal fluid by a non-toxic fluid; this was accomplished by withdrawing small amounts of the spinal fluid and replacing it with the same amount of physiologic salt solution. This was done six times in the course of eight days in the case reported—a total of 600 c.c. of spinal fluid being withdrawn and 540 c.c. of a salt solution being injected. The patient was a previously healthy young man, but for days the severe bulbar symptoms, extensive bronchitis and total paralysis of the diaphragm, vocal cords and muscles of swallowing rendered the prognosis very grave. The paralysis subsided in the various muscles in reverse order to its development, and the patient was dismissed in good condition after five weeks. In the first case there were signs of severe intestinal auto-intoxication and transient improvement followed calomel, but the patient died the tenth day.

66. Serious Disturbances After Preventive Serotherapy.—Allard remarks that the disturbances known commonly as "serum sickness" have been observed mostly in children and have been comparatively harmless, but he has recently encountered two cases in which almost fatal accidents developed after a preventive injection of antianthrax serum from a sheep or antitetanus horse serum. Both patients were physicians; the first had been inoculated with antitoxin for diphtheria seven years before and again a year and a half later. Four years after this he had also been immunized against rabies, being given at this time twenty-one subcutaneous injections of rabbit antirabies virus. He had thus been injected on two occasions with horse serum and then with rabbit virus, and when injected with the sheep serum he responded with typical anaphylactic phenomena just as in a laboratory experiment. The second patient had been given antitoxin treatment for diphtheria in 1898 and again in 1904, and he reacted to the injection of antitetanus serum with intense general symptoms a few hours later, recurring in exacerbations during the week; the syndrome finally terminated with the severest attack on the eighth day, after which the pulse and respiration soon returned to normal. Other patients injected at about the same time with the same serum showed no disturbance. Treatment was in both cases by injection of camphor and caffeine or drinking strong coffee. The urine was normal in both cases during and after the collapses. The prompt and complete recovery after the severe manifestations was a striking feature of the case. Allard reviews in conclusion what others have written on the subject, and comments that he did not dare, in the serious syndrome observed, to follow Besredka's suggestion to give ether; Besredka found that the animals in experimental anaphylaxis all survived when deeply anesthetized with ether. Allard commends the suggestion to use antitoxins made from different animals and in as concentrated form as possible.

68. The Tryptophan Test for Gastric Cancer.—Ley applied this test in twenty cases, all with anacidity, and twelve suggesting cancer. The findings were contradictory; in the four certain cases of cancer a positive reaction was obtained only in two, while the findings were also positive in four cases of simple gastric catarrh.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 20, XLI, No. 3, pp. 81-112

70 Salvarsan in Syphilis. B. Bloch.

71 *Recurring Hypertrophy of the Prostate After Prostatectomy. E. Lumpert.

72 *Alkaptonuria. A. Oswald.

71. Recurring Prostatic Obstruction After Prostatectomy.—The disturbances from enlargement of the prostate in the case reported were practically cured by castration and cure of the cystitis but they returned again after five years, at which time perineal prostatectomy was done. Only a few scraps of the prostate were left, but they proliferated again in the course of three years until fatal uremia resulted. In this as in two other cases previously reported from the same clinic there was no sign of a malignant tendency, the prostate tissue merely seemed to be endowed with an exceptional faculty for pure proliferation. The prostatectomy had been regarded as "total" in all these cases.

72. Alkaptonuria.—Oswald has found only sixty cases of alkaptonuria on record and he believes that it often escapes recognition as it must be more frequent than the literature would suggest. He compares it with diabetes and thinks that closer study of alkaptonuria might throw light on diabetes and other constitutional taints. He consequently urges physicians to be on the lookout for it and to report their cases or inform him personally of the details. The anomaly is easily recognized by the brown discoloration of the urine when it is shaken up for two or three seconds in a test-tube after it has been rendered alkaline by addition of solution of sodium or potassium hydroxid. The alkaptonuric urine has also reducing properties, giving the Trommer reaction.

Deutsche medizinische Wochenschrift, Berlin

January 19, XXXVII, No. 3, pp. 97-144

73 Injuries of the Eyeball. (Pathologie und Therapie der Verletzungen des Auges. II.) A. Elschlög.

74 *Artificially Induced Pneumothorax on Both Sides. C. Forlanini.

75 Salvarsan in Malaria. J. Iversen and M. Tuschinski.

76 *Salvarsan in Chorea Minor. J. v. Bokay.

77 Technic for Intravenous Injection of Salvarsan. H. Werner.

78 *Fate of Salvarsan in the Body. A. Bornstein.

79 *Acute Stage of Epidemic Poliomyelitis. Eckert.

80 *Origin and Treatment of Scoliotic Sciatica. E. Plate.

81 Primary Tuberculous Process in Mouth and Jaw. (Primäre Tuberkulose der Mundschleimhaut und des Unterkiefers nach Zahnextraktion.) O. Ehrhardt.

82 Improved Technic for Pubiotomy. (Zur Technik der Hebostomie: Die Beckenklammer, ein neues Instrument.) E. Bloss.

74. Double Induced Pneumothorax.—Forlanini reports two cases in which after one lung had healed under an artificially induced pneumothorax, he applied the same procedure to the other lung, and with equal success. He also adds the histories of two other cases in which conditions would permit the making of a second pneumothorax on this or the other side in case such an operation ever becomes necessary. His cases confirm, he asserts, the reliability of this means of treating pulmonary lesions and its efficacy. Results are naturally better the earlier treatment is applied, and his experiences, he thinks, justify its application even for incipient lesions. Scrupulous care must be exercised to prevent infecting the pleura: if pleurisy develops adhesions form which interfere with the pneumothorax.

76. Salvarsan in Chorea.—The case reported is cited as an instance of successful treatment of recurring chorea minor with salvarsan. The patient was a girl of 8, and the severe chorea subsided in the course of the four weeks following the injection; but the patch of necrosis at the site of the subcutaneous injection near the costal arch had shown no signs of healing although it had ceased to spread by the end of this time. It was a little smaller in size than a silver quarter.

78. Fate of Salvarsan in the Body.—Bornstein has examined several cadavers of individuals dying of intercurrent affections from two weeks to several months after injection of salvarsan. The findings harmonized with those obtained in his research on rabbits, all showing that the arsenic injected in the form of salvarsan is carried to the liver, kidneys and spleen and is stored up there, not only when it is incorporated by the intravenous route but also when injected into the muscle or subcutaneous tissue. It circulates in the blood only for a comparatively brief time. He found in one cadaver two weeks after injection 6.5 mg. of arsenic in the liver; 3.1 mg. in the kidneys, and 1.8 mg. in the spleen.

79. Epidemic Poliomyelitis.—Eckert analyzes nineteen cases of acute poliomyelitis in his charge at Berlin. Besides the paralysis, the pain in the spine and the profuse sweats were

the predominant features. One of the patients had had the same disease in 1903, leaving paralysis of the left leg, requiring later tenotomy. In 1909, the second attack occurred; it left the right leg paralyzed. One child of 8 died the eighth day of the disease which had developed with a fulminating course. He witnessed benefit in one case at least from lumbar puncture. He also made a point of mercurial injections during the acute phase, with hot baths and sweats, for their antiphlogistic action; electricity was used after subsidence of the pain in the spine. The Wassermann reaction was constantly negative with the cerebrospinal fluid, but a weak reaction was obtained with the blood in four out of the five cases tested.

80. Sciatica Complicated with Scoliosis.—Plate gives twenty-three illustrations of seven patients with chronic sciatica who also presented a greater or less tendency to scoliosis. He analyzes the cause of this tendency and explains it as the result of propagation of the trouble in the root of the sciatic nerve to the lumbar plexus with resulting neuralgia of the sensory nerve fibers in the muscles in the iliac region. On account of this pain these muscles are not normally stretched and in consequence the hip joint is slightly flexed; this shortens the leg and tilts the pelvis, the latter compelling curvature of the spine to maintain the balance of the body. The practical point is that the myalgia of the iliacus and psoas muscles requires treatment along with the sciatica in cases complicated with scoliosis.

Jahrbuch für Kinderheilkunde, Berlin

January, LXXIII, No. 1, pp. 1-130

- 83 New Clinic for Diseases of Infants and Children. (Strassburgs neue Kinderklinik.) A. Czerny.
- 84 Restitution of Water After Periods of Indigestion. (Studien zum Mineralstoffwechsel.) H. Koeppe.
- 85 Retention of Water During Fever. II. Koeppe.
- 86 Elimination of Phosphates in Urine of Bottle-Fed Infants with and Without Intake of Salt. II. Koeppe.
- 87 Fever After Intake of Salt. II. Koeppe.
- 88 Thyroid Not Responsible for Defective Bone and Cartilage Growth. (Ueber die angebliche Bedeutung von Schilddrüsenveränderungen bei Chondrodystrophia foetalis und Osteogenesis imperfecta.) M. Sumita.
- 89 Water-Content of Blood in Infants. (Wassergehalt des Blutes und sein Verhalten bei den Ernährungsstörungen der Säuglinge.) F. Lust.
- 90 Value of Albumin in Human Milk. (Zur Bewertung des Albumingehaltes der Frauenmilch.) P. Grosser.

Medizinische Klinik, Berlin

January 15, VII, No. 3, pp. 85-126

- 91 Treatment of Fractures. (Einrichten gebrochener Knochen.) K. Ewald.
- 92 Duodenal Ulcer. (Zur Diagnose und Therapie des Duodenalgeschwürs.) A. Kühn.
- 93 *Treatment of Diphtheria Bacillus-Carriers. (Zur Bekämpfung der Bazillenpersistenz bei Diphtherierekonvaleszenten.) M. Kretschmer.
- 94 Relations Between Multiple Sclerosis and Hysteria. II. Bendixsohn and Serög. (Commenced in No. 2.)
- 95 Herpes Zoster After Intravenous Injection of Salvarsan. L. Meyer.
- 96 The Cresyl Dyes in Clinical Staining Technique. O. P. Gerber.
- 97 *Improved Technique for the Antitrypsin Test. (Platten für die Trypsinprobe.) Kniaskof.

93. Diphtheria Bacillus-Carriers.—Kretschmer states that the diphtheria bacilli often lurk in the recesses of the tonsils long into convalescence, and he has succeeded in freeing thirteen patients from them by crushing the tonsils, thus squeezing out the plugs and secretions. He did this from one to nine times in the different cases, finally freeing the diphtheria convalescents in this way in from seventeen to thirty-eight days after the commencement of the disease. The results were promptest with the more accessible tonsils, more repetitions being necessary when the tonsils were far back.

97. The Antitrypsin Test.—Kniaskof extols the advantages of using gelatin instead of the Loeffler plate. He pours 10 or 15 c.c. of a 10 or 15 per cent. gelatin solution into a Petri dish and after it is hardened, he covers it with a 10 per cent. solution of formalin. After from twelve to twenty-four hours the formalin is poured off and the plate is rinsed for an hour under running water and then dried with blotting paper. Plates thus prepared kept for a long time. The little dimples formed from the eating away by the fluid to be examined, show up better if the gelatin is stained with a few drops of India ink while it is fluid. Scraps of the stained gelatin can also be used to test the fluid by dropping them into it. If the gelatin is dissolved by the action of the trypsin the fluid

becomes stained by the India ink. No change of tint is accepted as a positive reaction to the antitrypsin test. [This test was described in THE JOURNAL, July 4, 1908, page 83.]

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

January, XXXIII, No. 1, pp. 1-124

- 98 *Extraperitoneal Cesarean Section and Pubiotomy. (Extraperitonealer Kaiserschnitt und Hebosteotomie.) A. Döderlein.
- 99 Laceration and Expulsion of Ring of Vaginal Wall. (Ringförmiger Ausriss der Scheide intra partum.) P. Esau.
- 100 *The Vaginal Methods in Gynecology. T. Dobbert.
- 101 *Acute Dilatation of the Stomach. II. Hellendall.
- 102 Primary Vaginal Cancer. (Zur Technik der Radikaloperation des primären Scheidenkrebses.) II. Peitmann.
- 103 Ovarian Dermoids. (Zur Aetiologie der Ovarialdermoide und zur Kenntnis der darin vorkommenden Haare.) M. Yamasaki.

98. Extraperitoneal Cesarean Section and Pubiotomy.—Döderlein has done Cesarean section by the extraperitoneal route in thirty-two cases by the technique which he describes and illustrates. The extraperitoneal slanting incision in the inguinal region is made with the patient's shoulders very low, but when ready to extract the child, the pelvis is lowered. All except three of the women were safely delivered. One of these succumbed to eclampsia twelve hours later and another was seriously septic when first seen after four days of labor; her child was dead, and another child could not be revived. Paralytic ileus was responsible for the third fatality. The great disadvantage of this technique is that it is more difficult to extract the child, but this is overbalanced by the advantages of not opening into the peritoneum and the less subjective discomfort for the patient. He has performed pubiotomy in fifty-three cases with the loss of only one patient from paralytic ileus. This operation has a mortality to date of six in 321 cases at seven large clinics, that is, 1.8 per cent. The two operations do not compete with but supplement each other. With manifest infection both are contraindicated.

100. Vaginal Methods for Gynecology.—Dobbert reviews his experience with the vaginal technique at St. Petersburg with or without supplementary laparotomy. The lesson taught, he says, is that the rational combination of the vaginal and abdominal methods is the technique for the future.

101. Acute Dilatation of the Stomach.—Hellendall reports four recoveries, that is, 53.54 per cent. of his total material. He has compiled 140 cases from the literature, including eighty-six in which the dilatation followed an operation. The list includes thirty-nine cases of dilatation of the stomach after gynecologic operations and twelve after gall-stone operations. An important symptom is the explosive vomiting with long intervals of comparative well being; the stomach region protrudes while the rest of the abdomen is not distended nor rigid. He ascribes the trouble in one of his cases to propagation of an infectious process in the small pelvis to the stomach wall, entailing atony. In a second case the dilatation was the result of accumulation of gases and they escaped as the tube was introduced; there was no abdominal infection in this case. In another case the vomiting was more like regurgitation, the mouth filling at brief intervals and the patient merely spitting out the fluid. The rapid pulse and difficulty in breathing are the main symptoms. In three of his cases the history was suspicious of old gastric ulcer. The dilatation may be primary or secondary; treatment should aim to tone up the stomach walls and to relieve it of its accumulated contents. It is especially important to repeat the gastric lavage at the moment when the paralyzed stomach begins to become distended again. The most certain prophylaxis of trouble is prevention of great distention of the upper abdomen, keeping up the patient's strength with nutrient enemata, saline infusion and subcutaneous injections of camphor or sugar solution. Desguin recommends specific serotherapy when infection is responsible for the dilatation. If the lavage of the stomach does not remedy conditions, the patient should be placed in the ventral decubitus to act on the occlusion of the duodenum probably responsible for the symptoms. Schnitzler has cured patients in this way. Bäumler commends the knee-chest position but notwithstanding the twenty successful cases on record in which this has been done, some writers regard it as dangerous—Borchardt has

reported a fulminating aggravation of the disturbances. Special care is necessary for patients after laparotomy, and Hellendall thought that one of his patients was injured rather than benefited by the position treatment.

Münchener medizinische Wochenschrift

January 17, LVIII, No. 3, pp. 121-176

- 104 Determination of Amchbas. T. v. Wasielewski.
- 105 Active Substances in the Uterus and Ovaries. G. Schickele.
- 106 *Ear Conditions in Syphilitics After Administration of Salvarsan. O. Beck.
- 107 *Prognosis of Puerperal Psychoses. P. Jolly.
- 108 Functioning of the Pyloric Sphincter After Experimental Cross Section of Stomach. (Die motorische Funktion des Sphinkter pylori und des Antrum pylori beim Hunde nach der queren Durchtrennung des Magens.) M. Kirschner and E. Mangold.
- 109 *Further Experiences in Influencing Shape of Skull in Young Children. (Willkürliche Beeinflussung der Form des kindlichen Schädels.) G. Walcher.
- 110 Transmission of Hypersusceptibility to Antipyrin to Guinea-Pigs. (Uebertragung von Antipyrinüberempfindlichkeit auf Meerschweinchen.) E. Klausner.
- 111 Improved Technic for Hemostasis in Operations on the Skull. F. Berndt.
- 112 Advantages of Sterilization with Tincture of Iodin. (Die moderne Jodpinselung, sowie über deren weiteres Anwendungsgebiet.) A. Hofmann.
- 113 Discoloration of Urine After Eating Mushrooms. (Harnverfärbung nach Schwammgenuss.) A. v. Notthafft.
- 114 *Apocynum in Chronic Cardiac Insufficiency. G. Fehsenfeld.
- 115 Scientific Medicine and Its Opponents. (Die wissenschaftliche Heilkunde und ihre Widersacher.) O. P. Neumann.

106. **Otologic Findings After Injection of Salvarsan.**—Beck has examined over a hundred syphilitics after salvarsan treatment; the findings confirm the fact that changes in the internal ear may be observed after taking the drug. All the patients examined had been referred to the university otologic clinic in charge of Urbantschitsch, on account of complaints in regard to their ears. In one case an otitis media, rebellious to all treatment for several months, healed completely nine days after injection of the salvarsan. In three other cases both the labyrinth and vestibule were evidently affected, the symptoms not coming on until five, seven and nine weeks after the injection of salvarsan; the Wassermann reaction was negative. None of these patients had ever had attention attracted to the ears before. There had been little change for the better in these patients during the three weeks to date of writing. The syndrome in one case was that of typical Menièreiform cerebral polyneuritis. In another case the vestibular nerve was alone affected without any subjective vestibular symptoms and there has been no change to date; the symptoms developed four months after the injection of the salvarsan and have remained unmodified to date. Beck thinks that this case speaks for a toxic action of the drug on the vestibular nervous apparatus similar to that which Rothig found in mice after treatment with arsacetin. Symptoms like those presented by this patient have been observed in untreated syphilis, but they almost invariably show a decided tendency to retrogression while in the case reported they have persisted. He knows, however, of a similar persisting syndrome in a case in which no salvarsan had been given. He adds that ear affections in untreated syphilis are comparatively rare while they have become unusually common since the introduction of salvarsan. The syndrome observed in his cases was like that in Rille's three patients developing over ten and twelve weeks after the injection [mentioned in THE JOURNAL, January 28, page 311]. Beck thinks it probable that persons whose ears are not entirely intact before taking the salvarsan are more liable to develop these nervous symptoms in the organ of hearing.

107. **Prognosis of Puerperal Psychoses.**—Jolly has been able to trace to date, after an interval of ten years at least, seventy-nine patients with puerperal psychoses at the Halle university clinic for nervous and mental diseases, 1887-1900. Complete recovery was observed only in 46 per cent. with slight change in character in an additional 13 per cent. In twenty-six of the seventy-nine there was recurrence of the psychoses—in fifteen in connection with other pregnancies. Only two of the nine patients recovered whose psychosis developed during pregnancy; twenty-nine of the fifty-five with true puerperal psychoses, and five of the fifteen whose psychoses developed during lactation. Six of the seven patients with mania recovered completely; the other patient died. Half of the six patients with catatonia developed dementia later,

one after an interval of eight years of health. The best outcome was in the twenty-eight cases of amentia, complete recovery following in nineteen after an interval ranging from five weeks to eighteen months, and complete recovery in two others after an intercurrent recurrence. In four cases the amentia progressed to dementia. The amentia developed almost exclusively during the puerperium. In 25 per cent. of the puerperal cases there had been infection.

109. **Influencing Shape of Skull in Infants.**—THE JOURNAL summarized recently Walcher's views in regard to the necessity for watching over the way an infant lies in order to mould its head into normal shape and outline. Avoidable deviations from normal shape are frequently responsible for traction on important tissues within the skull and resulting brain trouble. He here relates further experiences in this line and the results of position in correcting abnormal tendencies. When deemed necessary to have the child lie on its back, he uses a low crib with high walls which the child cannot see through, and it lies on its back to look up. To keep the child on its side, the crib is made with lattice-work walls and is placed on a table against the wall, so that the babe has to lie on its side to watch what is going on. The pictures of twins "before and after" show the great differences in the shape of the skull that can be realized by the mere position of the crib and whether the child can look through its walls or not.

114. **Apocynum Cannabinum in Chronic Heart Disease.**—Fehsenfeld reports satisfactory experiences with Canadian hemp in a number of cases of chronic cardiac insufficiency in which digitalis had failed. The action is similar to that of digitalis though not so durable; the hemp extract therefore may prove useful when digitalis is contra-indicated or has worn out its usefulness.

Virchow's Archiv, Berlin

January, CCIII, No. 1, pp. 1-160

- 116 *Tumors of the Hypophysis Region. F. Strada.
- 117 Cutaneous Fibromatosis with Hypernephroma. (Fall von multiplen Hautfibromen mit Nebennierengeschwulst.) K. Kawashima.
- 118 *Primary Cancer of the Liver. (Leberkrebs.) M. Goldzieher and Z. v. Bokay.
- 119 Patches of Ossification in the Skin: Six Cases. (Heterotopie Knochenbildungen in der Haut.) M. Strassberg.

116. **Tumors in Hypophysis Region.**—Strada gives the necropsy findings in a case of tumor in the hypophysis region in a girl of 19 with a tendency to obesity. He also reviews the thirty-one cases of the kind on record, tabulating the findings for comparison and discussing the clinical manifestations with a tumor in this region and the connection between the hypophysis and other ductless glands, and the great physiologic importance of the hypophysis in general.

Wiener klinische Wochenschrift, Vienna

January 19, XXIV, No. 3, pp. 83-114

- 120 *Salvarsan in Syphilis. S. Ehrmann.
- 121 *Radiologic Research on Absorption of Mercury and Salvarsan. K. Ullmann and M. Haudek.
- 122 *Reliability of Melostagmin and Hemolytic Tests of Gastro-Intestinal Cancer. G. Kelling.
- 123 *Adhesive Plaster Garter for Varicose Ulcers. (Behandlung des Ulcus cruris varicosum mittels Pflasterstrumpfbandes.) K. Büdinger.
- 124 *Improved Technic for Electrolytic Depilation. S. Weidenfeld.
- 125 Unreliability of Mayerhofer's Method for Differential Diagnosis of Cerebrospinal Fluid. G. Simon.

120. **Salvarsan in Syphilis.**—Ehrmann has given this drug to eighty syphilitics in the last five months and he has noticed that the syphilids which develop thereafter differed from those usually observed at the stage of the disease involved and to such an extent as to suggest that the organism was modified in some way by the medication. In one case toxic action on the organ of hearing was manifest, the trouble in the auditory nerve developing in the fourth month of the disease, two months after injection of salvarsan which had been followed by sloughing at the point of injection. Improvement followed excision of the gangrenous mass; in 5.69 gm. of the gangrenous tissue he recovered 0.0032 gm. arsenic and he thinks it probable that in the gangrenous tissue some chemical transformation of the drug had occurred rendering it more toxic. He had two syphilitic patients in former years who became hard of hearing, with tinnitus, under mercurial treat-

ment alone, but under continued intermittent mercurial treatment these symptoms finally subsided. He ascribes the disturbances in the ear in part to the Herxheimer reaction, in part to the syphilitic process itself, and in part to the direct action of the mercury or salvarsan, but believes that it is more liable to occur in the cases with local infiltration or gangrene on account of the possible chemical transformation of the salvarsan in tissues of this kind. Abuse of tobacco or other factor causing a predisposition on the part of the auditory nerve is liable to cooperate in the production of such symptoms.

121. Roentgen-Ray Research on Absorption of Mercury and Salvarsan.—Ullmann and Handek report the results of extensive research in this line which emphasize the advantages of fractioning the salvarsan so as to inject it in minute doses at several points at once; only a small proportion of a large dose seems to be completely absorbed and the unabsorbed portion is a menace to the tissues.

122. Early Diagnosis of Gastro-Intestinal Cancer by Meiostragmin and Hemolytic Reactions.—Kelling reports distinct positive reactions in 47 per cent. of forty-five patients with cancer tested for the meiostragmin reaction while positive findings were obtained in only three of eighty-five patients with non-malignant affections. The reaction was obtained in some of the cancer cases before a tumor was palpable, testifying to the importance of the test for the diagnosis of incipient cancer. He also applied the hemolytic test with hen blood-corpuscles and obtained a positive reaction in thirty of the forty-five cancer cases, both tests giving positive findings in seventeen of the forty-five patients. In eight of the forty-five cases neither test elicited a positive reaction. It thus proved possible to obtain a positive reaction by one or the other test in 80 per cent. of the forty-five cancer cases, while the reaction was positive in only six of the eighty-five patients with non-malignant affections. [The technic for the meiostragmin test was given in THE JOURNAL, May 28, 1910, page 1790]. Kelling has modified his hemolytic test and commends the later technic, III, as simpler and more reliable. The human serum to be examined is inactivated at 55 C. for half an hour; then 0.5 c.c. is added to 1 c.c. of a 5 per cent. suspension of hen red blood-corpuscles in 0.85 per cent. salt solution. The mixture is set aside for an hour at a temperature of 37 C. and then is rapidly rinsed twice with physiologic salt solution and centrifugated. To the sediment is then added physiologic salt solution to 1.5 c.c. and the whole is well shaken, after which 0.05 c.c. of normal active human serum is then added. The test tubes are then incubated until the control tubes with the inactivated normal serum turn pink. The tubes are then shaken up, centrifugated and titrated. The results are listed according to the percentage of normal hemoglobin, for example, 60 represents 60 per cent. hemoglobin dissolved. He tabulates the parallel findings with the meiostragmin reaction and with the three forms of the hemolytic test as recorded for 130 patients. As the reaction is a biologic one, its failure in 20 per cent. is no more than might be anticipated. A record of 80 per cent. positive reactions with cancer in such a large number of cases confirms the claims of the inventors of the tests as to their specific nature and reliability, while the simplicity of the technics, Kelling adds, places these tests within the reach of all.

123. Adhesive Plaster Garter in Treatment of Varicose Veins.—Büdingen winds a few turns of cotton cloth about 10 cm. wide around the leg below the knee. Over this he winds three or four spiral turns of a strip of adhesive plaster about 4 cm. wide, until the plaster forms a band about 6 cm. (nearly 2½ inches) wide. This plaster garter is drawn tight enough to compress the superficial veins but not enough to cause stasis. The constriction is applied of course with the leg elevated and the venous blood stroked back toward the trunk. When the garter works loose enough for the blade of a pair of scissors to be introduced beneath it, it is removed and a new one applied. This is generally necessary about once a week. Varicose ulcers heal rapidly below this garter and it will be found useful, he declares, in all cases in which operative measures are contra-indicated.

124. Improved Technic for Electrolytic Depilation.—Weidenfeld saves time by inserting 150 needles in turn and then applying the electric currents all at once.

Zentralblatt für Chirurgie, Leipsic

January 21, XXXVIII, No. 3, pp. 73-104

- 126 Catgut. (Erfahrungen mit Kuhn's Catgut nebst Bemerkungen zur Technik der Appendektomie.) R. Bertelsmann.
127 Substitution of Phalanges for Metacarpal Bones. (Plastischer Ersatz der Mittelhandknochen durch die Phalangen.) A. Hagentorn.

Zentralblatt für Gynäkologie, Leipsic

January 21, XXXV, No. 3, pp. 97-136

- 128 *Improved Technic for Pubiotomy. (Einfluss der Beinhaltung auf das Klaffen des durchsägten Beckens und ihre Bedeutung für die Weichteilverletzungen bei Hebostotomie.) A. Mayer.
129 Fetal Singultus from Contractions of Diaphragm. J. Rothschild.
130 *Vaginal Cesarean Section for Fulminating Pulmonary Edema. J. C. L. Massini.
131 Decapsulation of Kidney in Puerperal Eclampsia. (Ein durch Nierenentkapselung geheilter Fall von puerperaler Eklampsie.) J. C. Reinhardt.
132 *Hyperfunctioning of Ovaries or Testicles as Cause of Rachitis. S. Stocker.

128. Improved Technic for Pubiotomy.—Mayer has found that the injuries of the soft parts with pubiotomy are due to the sudden stretching apart of the sawed halves, thus pulling on the soft parts with such a sudden jerk that lesions result. This can be avoided, he states, by sawing the bones with the patient in the Walcher position, with the pendent legs held close together. Only when the legs are raised to the horizontal position do the bones gape. The danger from the sudden gaping of the bones was exemplified in v. Rosthorn's case in which immediately after the sawing of the bones they separated with such traction on the soft parts that a fulminating fatal hemorrhage resulted. The pendent legs should be drawn into the horizontal position only with extreme caution and very gradually, to spare the soft parts all sudden traction.

130. Vaginal Cesarean Section for Pulmonary Edema.—Massini knows of only three cases on record like his own, in which vaginal Cesarean section was done to relieve fulminating edema of the lungs. His patient was a multipara of 38, who had had edema, nausea and tendency to dyspnea at night during the first three months of the pregnancy. Fulminating pulmonary edema developed suddenly at the eighth month, unmodified by the usual measures; the patient lay in coma and pulseless for moments at a time. She began to breathe better immediately after the vaginal Cesarean section; the interval between the onset of the intense edema in the lungs and the termination of the operation was scarcely twenty minutes. As the uterine did not contract, the placenta was removed by hand and the interior of the uterus massaged and improvement was soon evident but the coma did not subside until the next day. The child was cyanotic to an extent Massini had never before beheld; it had suffered not only from the lack of intake of oxygen by the mother but also from the fact that the mother's blood had evidently drained the fetus of all its oxygen. The woman was soon convalescent.

132. Ovarian Hyperfunctioning as Cause of Rachitis.—Stocker implanted in a two-weeks' calf the ovaries from a healthy cow that had calved once. In a few weeks the calf developed a picture resembling in every respect that of rachitis, while the control calf under identical conditions otherwise was strong and lively. These findings and experimental research suggest that rachitis is due to excessive functioning of the ovaries or testicles and that treatment on these lines might prove effective. It has certainly displayed efficacy, he says, in the one clinical case in which he has applied it to date. The patient was a girl of 17 with pronounced rachitis and pains in the bones. She was given the milk of a castrated cow and in a few days the pains disappeared and she began to increase in stature.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 15, XXXII, No. 7, pp. 67-82

- 133 *Meningism. E. Cerrano.
January 17, No. 8, pp. 83-90
134 Experimental Syphilitic Keratitis. (Sull'inoculabilità dell'ulcera venerea nella cornea del coniglio.) A. Fontana.

133. **Meningism.**—Cerrano comments on the difficulty in distinguishing between actual meningitis and the vague condition which he calls meningism. Lumbar puncture is the criterion, and he reports a case in which everything seemed to indicate acute meningitis except the negative findings in the spinal fluid. The meningism may be due to infectious or toxic causes, or reflex, hysteric or physical; in his case it was traceable to gastro-intestinal auto-intoxication and the convulsions and contractures ceased as the intestinal tract was cleared out.

Policlinico, Rome

January, XVIII, Medical Section No. 1, pp. 1-48

- 135 Clinical and Post-Mortem Findings in Tardy Hematomyelia from Trauma of the Spinal Cord. E. Tramonti.
136 *Tetragonus Acute Ascending Myelitis. G. Catola.
137 *Influenzal Pleurisy and Peritonitis. G. Ghedini.
138 Primary Multiple Malignant Lymphomas of the Jejunum. F. Fulci. Commenced in preceding number.

136. **Tetragonus Myelitis.**—Catola's patient was a girl of 17 with both gonorrhea and syphilis; three months after the development of the syphilitic eruption she began to have fever, headache and paresis of the legs, blending into total paraplegia of the ascending type, fatal the fifteenth day. The findings in the spinal cord were those characteristic of acute poliomyelitis but the symptoms had been more those of Landry's paralysis. A tetragonus in pure cultures was obtained from the blood and cerebrospinal fluid, and this germ was evidently responsible, he thinks, for the syndrome observed.

137. **Influenzal Pleurisy and Peritonitis.**—Ghedini summarizes fifty-two articles on this subject which he has found in the literature and reports seven cases from his own experience, one of which has never been reported before. In three of his cases the influenzal bacillus induced pleurisy with effusion, in one pleurisy without effusion, in one peritonitis with effusion and in two others several of the serous membranes were involved with considerable effusion. Treatment, he states, is that for influenza in general, and is based mainly on quinin. Differentiation is easy if a preceding attack of influenza gives the clue but it may be difficult in the absence of this. The sudden onset, the intensity of the symptoms, the brief course and the favorable outcome distinguish the influenzal from tuberculous pleurisy and peritonitis, while the benign course and lesser tendency to recur differentiate it from streptococci and staphylococcus processes. Bacteriologic examination of the effusion or blood or serodiagnosis may be necessary in some cases.

Hygiea, Stockholm

December, LXXII, No. 12, pp. 1297-1441

- 139 Berzelius. (Betraktelser öfver Berzelii verksamhet inom djurkemien.) K. A. H. Mörner.
140 Experiences with Tuberculin Cutaneous Reaction. (Tuberkulinsympningar enligt v. Pirquets metod utförda å Kronprinsessan Lovisas vårdanstalt.) O. D. Barr.
141 Acute Pancreatitis: Twelve Cases. J. Borelius.
142 *Prognosis of Traumatic Neuroses. J. Billström. Commenced in No. 10.

142. **Traumatic Neuroses.**—Billström gives full summaries of 103 cases of traumatic neuroses, including seven from his own experience. The list is based on the records of several clinics and insurance societies in Sweden. Complete recovery sooner or later was the rule in 90 per cent.; the longer the interval the larger the number of complete cures observed. The local and monosymptomatic forms of hysteric or pure neurasthenic traumatic neuroses give the best prognosis. Suggestion from the physician making the examination, and especially repeated examinations, render the prognosis less favorable, he has found, and he warns that the certificate should never be accessible to the patient. The Swedish insurance societies do not regard traumatic neuroses as entitling to an indemnity and this aids in reducing the tendency to exaggeration of the trouble on the part of the injured. But it is extremely important, Billström emphasizes, to distinguish between the "pure" and the complicated cases of traumatic hysteria. In case of an indemnity, the prognosis is better when it is paid in a lump sum rather than as a pension. Among his seven cases complete recovery followed after a few months or years—the interval being eight years in one case

during which time there had been periods of freedom from the neurosis followed by recurrences under emotional stress. One puzzling case proved to be malingering, the home physician sending in an intentionally misleading certificate. One patient is still unduly nervous but for this his chronic alcohol addiction may be responsible.

Ugeskrift for Læger, Copenhagen

January 19, LXXIII, No. 3, pp. 71-100

- 143 Experiences at Tuberculosis Dispensary. (Erfaringer fra Ribe Amts Tuberkulose-Diagnose Station.) T. Brinch.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

1. SOME KNOWN AND THREE NEW ENDOPARASITIC TREMATODES FROM AMERICAN FRESH-WATER FISH. By Joseph Goldberger. 2. SOME NEW PARASITIC TREMATODE WORMS OF THE GENUS TELORCHIS. By Joseph Goldberger. 3. A NEW SPECIES OF ATHESMIA (A. Foxi) FROM A MONKEY. By Joseph Goldberger and Charles G. Crane. Hyg. Lab. Bull. 71, U. S. P. H. and M.-H. S., Treasury Department, January, 1911. Paper. Pp. 61, with illustrations. Washington: Government Printing Office, 1911.

THE MODERN MATERIA MEDICA. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Antidotes and Incompatibles of All Additions to the Newer Materia Medica That Are Likely to be Called for on Prescriptions, Together with the Name and Address of the Manufacturer or Proprietor, and in the Case of Foreign Articles, of the American Agent. Second Edition. Cloth. Price, \$1.25. Pp. 432. New York: The Druggists Circular, 1911.

HANDBOOK OF TREATMENT FOR DISEASES OF THE EYE (OPHTHALMIC THERAPEUTICS). By Dr. Curt Adam, Assistant-Surgeon in the I. University Clinic for Diseases of the Eye, Berlin. With a Preface by Prof. von Michel, Berlin. Translated from the Second German Edition (1910), by William George Sym, M.D., F.R.C.S.Ed., and E. M. Lithgow, M.B., F.R.C.S.Ed. Cloth. Price, \$2.50. Pp. 264, with 36 illustrations. New York: Rebman Co., (1911).

DISEASES OF CHILDREN FOR NURSES. Including Infant-Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene and Nursing. By Robert S. McCombs, M.D., Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia. Second Edition. Cloth. Price, \$2 net. Pp. 470, with 118 illustrations. Philadelphia: W. B. Saunders Co., 1911.

CASE HISTORIES IN PEDIATRICS. A Collection of Histories of Actual Patients Selected to Illustrate the Diagnosis, Prognosis and Treatment of the Most Important Diseases of Infancy and Childhood. By John L. Morse, A.M., M.D., Assistant Professor of Pediatrics, Harvard Medical School. Cloth. Price, \$3. Pp. 314, with illustrations. Boston: W. M. Leonard, 1911.

DISINFECTANTS, THEIR USE AND APPLICATION IN THE PREVENTION OF COMMUNICABLE DISEASES. By Thomas B. McClintic, Passed Assistant Surgeon, U. S. P. H. and M.-H. S. Prepared by Direction of the Surgeon General. Public Health Bull. 42 U. S. P. H. and M.-H. S., Treasury Department, December, 1910. Paper. Pp. 46. Washington: Government Printing Office, 1911.

ATLAS OF MICROSCOPIC DIAGNOSIS IN GYNECOLOGY. With Preface and Explanatory Text by Dr. Rudolf Jolly, Priv. Doc., Chief Physician of the Gynecologic Clinic, University of Berlin. Only authorized English Translation by P. W. Shedd, M.D., New York. Cloth. Price, \$5.50. Pp. 192, with 54 illustrations. New York: Rebman Co., (1911).

TENTH ANNUAL REPORT OF THE NEW YORK STATE HOSPITAL, WEST HAVERSTRAW, ROCKLAND COUNTY, N. Y., FOR THE CARE OF CRIPPLED AND DEFORMED CHILDREN. For the Year Ending Sept. 30, 1910. Paper. Pp. 48, with illustrations. Newton M. Shaffer, M.D., Superintendent, 28 E. Thirty-Eighth Street, New York, N. Y., 1910.

DIFFERENTIAL DIAGNOSIS. Presented Through an Analysis of 383 Cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School, Boston. Cloth. Price, \$5.50 net. Pp. 753, with 195 illustrations. Philadelphia: W. B. Saunders Co., 1911.

OUTLINES OF PSYCHIATRY. By William A. White, M.D., Washington, D.C. Nervous and Mental Disease Monograph Series No. 1. Third Edition. Paper. Price, \$2.50. Pp. 272, with illustrations. New York: The Journal of Nervous and Mental Disease Publishing Co., 1911.

VORLESUNGEN ÜBER PHYSIOLOGIE. Von Dr. M. von Frey, Professor der Physiologie und Vorstand des physiologischen Instituts an der Universität Würzburg. Second Edition. Cloth. Price, 11 marks. Pp. 397, with 80 illustrations. Berlin: Julius Springer, 1911.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL, MAYO CLINIC, ROCHESTER, MINN., 1905-1909. Cloth. Price, \$5.50 net. Pp. 668, with 228 illustrations. Philadelphia: W. B. Saunders Co., 1911.

STATE OF NEVADA: BIENNIAL REPORT OF THE ORPHANS' HOME. DIRECTIONS AND REPORT OF THE SUPERINTENDENT. 1909-1910. J. E. McKinnon, Superintendent State Orphans' Home. Paper. Pp. 29. 1911.

THE HEALTHFUL ART OF DANCING. By Luther H. Gulick, M.D., Author of "The Efficient Life," etc. Cloth. Price, \$1.40 net. Pp. 273, with illustrations. New York: Doubleday, Page & Co., 1910

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 9

CHICAGO, ILLINOIS

MARCH 4, 1911

PURULENT INFECTIONS OF THE URINARY TRACT IN INFANCY *

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CHICAGO

Purulent infections of the urinary tract are by no means infrequent in infancy and early childhood. They form probably 1 per cent. of all the illnesses that bring these little patients under the physician's care. Roughly speaking, I should estimate them to be about as frequent in my own practice as meningitis. These infections still occupy rather a unique position, in that they are almost never recognized in general practice. This is not because the babies are not sick, or because the diagnosis is difficult. The babies are alarmingly ill, have long-continued high septic fevers and become emaciated and anemic to an extreme degree, and a considerable per cent. die if untreated. The diagnosis, on the other hand, is easy and positive, and can be made by any one who can recognize a pus cell under the microscope. The reason why the diagnosis is not made in these cases is that it has not yet become generally known that pyelitis, or pyelocystitis, manifests itself, *sui generis*, in infancy as a not infrequent, serious, sharply defined, and easily recognizable disease.

Forty years ago Goschler¹ wrote of these infections in association with vulvitis in new-born infants. Twelve years later Hirschsprung,² of Copenhagen, again spoke of them in a paper advocating the free use of diagnostic catheterization in infants. As so frequently happens, but little attention was given to the subject until Escherich³ in 1894 emphasized it in a paper, in which he reported seven cases—and later on, fifty more—that were nearly all due to the colon bacillus. Holt,⁴ Trumpp,⁵ Heubner,⁶ Finkelstein,⁷ and many others, quickly reported further cases that confirmed these findings. In England, Box⁸ and especially the great Edinburgh pediatrician, Thompson,⁹ have contributed notably to our knowledge of the subject. In this country, Holt,⁴ Fischer,¹⁰ Freeman,¹¹ Morse,¹² Zahorsky,¹³ Abt¹⁴ and

others have reported many cases and have added materially to the literature. A series of eighty cases from Finkelstein's clinic has just been reported by Friedenwald,¹⁵ twenty-two cases occurring in the last year, at the Kinderasyl.

A most valuable statistical contribution, because it helps us to realize in some measure the extent of this disease, was given by Goeppert.¹⁶ Two years ago he reported 126 cases that occurred in his private practice in the little town of Kattowitz, in Oberschlesien, in a period of eight years, and estimates that in the limited area of which Kattowitz is the center, some eighty cases occur annually. In the last six years more than 1 per cent. of all of the patients that came to his office were thus afflicted. There is no reason for believing that the disease is less frequent elsewhere.

The clinical picture is in its main features a fairly constant one. A female infant becomes suddenly seriously ill with a high temperature, running commonly to 103 or 104 F., not infrequently to 105 and even 106 F. Vomiting, lack of desire for food, restlessness, etc., occur, as in all high fevers. Convulsions may usher in the attack, as one might expect, though probably no more frequently than in other high fevers. Thompson⁹ has especially emphasized the recurring chills as a characteristic symptom, finding them in eight out of fifteen cases, while others have not found them so frequently. The rareness of a distinct chill in early childhood makes this a valuable symptom. The respiration is often disproportionately increased and a slight cough is common. There is frequently some indigestion that can easily lead to an improper diagnosis. The child is usually rather excitable, wide awake, restless, the eyes are bright, and the face sometimes wears an anxious expression.

A striking symptom that is of considerable diagnostic value is the extreme pallor that comes after the flushed condition of the first few days. The child is either white, as shown so well in the bloodless paper-like whiteness of the ears, or else it is a grayish, ashy white.

These children are commonly very sensitive to handling, and cry when approached, and especially when made to sit up or when lifted by the shoulders. This is probably due to the fact that there is often distinct tenderness over one or both kidneys. If the trouble is unilateral the child may wince or even cry out when the affected side is palpated. Often there is distinct muscular rigidity anteriorly over the kidney. The kidney itself is rarely palpable, partly because of the muscular rigidity and partly because it is rarely enlarged sufficiently. In cases in which the pelvis becomes distended, owing to temporary obstruction of the outlet, a considerable mass may be made out that may lead to a suspi-

* Read before the Englewood Branch of the Chicago Medical Society, Nov. 1, 1910.

1. Goschler: Paper published in 1871; quoted by Finkelstein. See Note 7.

2. Hirschsprung: Jahrb. f. Kinderh., N. F. 1883, new series, xix, 427.

3. Escherich: Ueber Cystitis bei Kindern, hervorgerufen durch Bact. Coli Commune, Mitt. d. Ver. d. Aerzte Steiermark, 1894, No. 5.

4. Holt, L. Emmett: Three Cases of Acute Pyelitis in Infancy, Arch. Pediat., November, 1904.

5. Trumpp: Jahrb. f. Kinderh., new series, xlv.

6. Heubner: Lehrbuch der Kinderheilkunde, 1903.

7. Finkelstein: Jahrb. f. Kinderh., new series, xliii.

8. Box: Lancet, London, 1908, i, No. 2.

9. Thompson (Edinburg): Clinical Examination and Treatment of Sick Children.

10. Fischer: Arch. Pediat., June, 1907.

11. Freeman: Arch. Pediat., March, 1905.

12. Morse: Arch. Pediat., 1902, xix, 461.

13. Zahorsky: Pediatrics, 1908, xx, 543.

14. Abt: Urinary Infection in Children, THE JOURNAL A. M. A., Dec. 14, 1907, p. 1972.

15. Friedenwald: Pyelocystitis in Infancy, Arch. Pediat., November, 1910.

16. Goeppert: Ueber die eitrigen Erkrankungen der Harnwege in Kindesalter, Ergebn. d. inn. Med. u. Kinderh., 1908, ii, 30.

cion of pyonephrosis or even appendiceal abscess. Colicky pains are not uncommon.

The course of the disease if untreated is essentially chronic. The temperature persists as a septic, remittent or even intermittent fever. These cases are often diagnosed as malaria, typhoid, food intoxication, or, if the nervous symptoms are marked, as is frequently the case, as meningitis, and later, when the condition shows no tendency to improvement, as a chronic tuberculosis of uncertain localization. In many cases the disease becomes distinctly intermittent; days, weeks, or even months of normal temperature and general well being, with rapid gain in weight, will separate periods of a week or of several weeks of high fever and all the other symptoms of a fresh acute infection. In one case that occurred early in my practice which I failed to diagnose, I had a favorable opportunity to observe this condition. Four or five distinct relapses or exacerbations occurred during a period of about four months, each lasting from one to three weeks with a general tendency to greater severity, and a more prolonged course in each new attack.

From the clinical course so far, it is evident that these cases do not differ sufficiently from other acute and chronic infections of various kinds so that they can be diagnosed readily from this alone. The positive diagnosis is made when pus is found in the urine. The amount of pus varies much in different cases and in different specimens from the same case. Commonly the urine appears turbid, sometimes even thick and milky. A nearly normal specimen may precede or follow one that is loaded with pus on account of a temporary obstruction of the ureter of the affected side. Microscopically, pus-cells singly and in clusters usually pack the field. Goeppert¹⁶ has suggested an arbitrary minimum diagnostic standard of six to eight leukocytes in each field of an uncentrifuged specimen. Bladder and renal epithelium are present in varying degrees. Albumin is always found if there is enough pus. If it is out of proportion to the amount of pus, it speaks for an involvement of the kidney itself, a pyelonephritis. Casts are not found unless there is a complicating nephritis. The urine is almost invariably acid when first passed always in colon infections, and contains large numbers of long bacilli.

In some cases there is apparently a bacteriuria rather than a pyuria. In these the urine swarms with bacteria; usually colon bacilli and few pus and epithelial cells are found. In some of these, as in ten cases described by Mellin,¹⁷ there were no constitutional symptoms, and one can hardly believe that we have here to deal with an inflammatory process, but rather with a simple multiplication of bacteria in a favorable medium. In others, which present constitutional symptoms, fever, pallor, loss of appetite, etc., as in ordinary pyelocystitis, there is doubtless a true inflammatory process with but little formation of pus. These cases are rare and little is known about them. I have seen one case that apparently came in this category. The child seemed clinically to have a severe case of pyelitis; the acid urine showed almost no pus but teemed with bacilli.

Frequent urination and tenesmus seem to occur in only a small proportion of cases and can hardly be accorded much, if any, diagnostic significance. In one case in which Thiernich found a marked cystitis at autopsy, no history of these symptoms was obtainable during life. When we consider furthermore how fre-

quently mothers tell us that their babies "wet every few minutes" or that they cry before, during, or just after urinating, without any demonstrable lesion, it is evident that these symptoms are peculiarly unreliable in an infant.

When we sum up the clinical picture of this disease we are struck by the fact that the great majority of these infants give no single physical sign or symptom that points positively to the kidney or bladder as the site of the trouble, until we examine the urine.

ETIOLOGY

Pyelocystitis is characteristically a female disorder. I have myself never seen it in a male infant. Goeppert,¹⁶ whose statistics are relatively higher than those of others, but whose larger material has especial value, found 10 per cent. of his cases in boys and 90 per cent. in girls. In Finkelstein's¹⁵ series 27 per cent. were males, showing that males are much more commonly affected than was formerly believed, or else, as seems more probable, that the conditions in a foundling home are different from those of private practice.

The great majority of these cases occur during the first year, with especial predilection for the second and third quarters of the first year (Goeppert¹⁶) or according to Finkelstein's¹⁵ series the first quarter. After the second year they are relatively rare and probably approach the adult type.

This infection takes place more frequently during the summer months. This at once suggests a connection with summer diarrhea, and it is a significant fact, as will be seen later, that many of these cases are preceded by a food disturbance. Social status has less significance than one would expect, and I have been struck with the number of cases that occur in which the babies are under ideal surroundings as to care and cleanliness.

The *Bacillus coli communis* is the direct cause in the great majority of cases, in about 97 per cent. of both Escherich's and Goeppert's series. In the remaining cases one or the other of the common pyogenic bacteria is the cause.

PATHOLOGY

The pathology is still variously interpreted. Escherich³ in his first paper considered the disease purely a cystitis. Finkelstein⁷ and Trumpp⁵ both retained this term but in a limited number of cases were able to demonstrate post mortem that the pelvis of the kidney was likewise involved. Heubner⁶ first distinguished between a cystitis and a pyelitis and retains this classification in his text-book. Goeppert,¹⁶ who has had apparently very few if any autopsies, chooses to call the disease "pyelocystitis with especial emphasis on the first syllables" and thinks that in most cases the pelvis and bladder are involved, but that the pyelitis is the important lesion in the great majority of cases, and that only exceptionally does a cystitis dominate the picture. Thompson⁹ and Still¹⁸ consider the disease a pyelitis. American authors commonly speak of the disease as pyelitis, or pyelocystitis. In twenty autopsies of Finkelstein's series fifteen cases showed involvement of both bladder and pelvis of the kidney; three of the pelvis, and one of the bladder alone.

A most valuable contribution to the subject has just been made by Thiernich¹⁹ of Magdeburg. From a series of autopsies he establishes the fact that in a certain propor-

18. Still: Common Disorders and Diseases of Childhood, 1909.

19. Thiernich: Ueber die eitrigen Erkrankungen der Nieren und Harnwege im Säuglingsalter, Jahrb. f. Kinderh., September, 1910, 72 d. Dritten Folge, xxii, 243.

17. Mellin: Quoted by Langstein in Pfaundler and Schlossmann's Handb. der Kinderh., first German edition, 1906, p. 578.

tion of cases there are found post mortem as the dominating lesion multiple, minute abscesses of the cortex of the kidney, sometimes radiating toward the pelvis as fine lines. He reports three autopsies in boys and three in girls in which this condition was present, and in which the inflammation of the pelvis or bladder was so slight that it was almost unrecognizable. The fact that he has found this condition so frequently post mortem does not establish its relatively frequent occurrence, because it is only in these severer cases that patients die of the disease itself; the others do not come to the post-mortem table. Nearly half of the autopsies reported by Friedenwald¹⁵ in Finkelstein's series belonged to this type, showing miliary abscesses in the cortex, and kidney substances, as well as a catarrhal condition of the pelvis and bladder.

From a pathologic standpoint there are, then, two types of the disease: 1. The great majority of the cases are catarrhal infections of the bladder and pelvis of the kidney; i. e., pyelocystitis. These are of all degrees of severity but are generally benign and occur almost exclusively among girls. This is the type commonly seen.

2. The severe type that affects children of lowered resistance, due to some infection or food disturbance, in which the cortex of the kidney is studded with miliary abscesses, and in which the involvement of the pelvis or bladder is of less importance; i. e., a pyelonephritis.

The pathogenesis offers an interesting field for speculation. The fact that nine out of ten of these cases, perhaps ten out of ten of the ordinary type of pyelocystitis, occur in females demands an explanation. If we combine this with the further facts that 97 per cent. of these cases are due to the colon bacillus, and that 60 per cent. of Goeppert's cases occurred during the first year, 80 per cent. during the first eighteen months, and 90 per cent. during the first two years, and 92.5 per cent. of Finkelstein's cases during the first year, i. e., during the diaper age, an explanation thrusts itself on us. If one bears in mind the extreme shortness of the infantile female urethra, and then sees such a little girl "changed" after she has had a very soft or liquid bowel movement that floods the vulva and is pressed against the urethral outlet, there is little difficulty in believing that colon bacilli are carried through the urethra to the bladder and there set up an inflammation that in turn is carried to the pelvis of the kidney. The frequent association of this disease with diarrhea adds to the plausibility of this view.

While an ascending infection of such an origin has seemed the most reasonable explanation of pyelocystitis, there can be little doubt that the cases of pyelonephritis described by Thiemich¹⁹ and Friedenwald,¹⁵ with cortical abscesses as well as catarrhal involvement, are of hematogenous origin. Whether this mode of origin plays any considerable part in the former type remains to be determined. It would be very instructive to know whether the colon bacillus is as frequent, relatively, in the cases of pyelonephritis as in those of pyelocystitis. A third possible source of infection has been suggested—that of direct migration of the colon bacillus from the intestinal to the bladder wall.

DIAGNOSIS

The diagnosis of pyelocystitis is made when a sufficient amount of pus is found in the urine, at least six to eight leukocytes, to the field of a non-centrifuged specimen. One must always remember that a single specimen may be nearly normal, and in every suspected case repeated examination should be made. The possi-

bility of contamination with vaginal discharge or with feces must be guarded against in an infant. An exact anatomic diagnosis can hardly be made, since ureteral catheterization is not feasible. The milder cases may be a simple cystitis; the severer cases, with high fever and serious constitutional symptoms, are probably nearly all cases of pyelitis or pyelocystitis; the rarer severe cases which complicate other conditions, which do not yield to treatment, and in which a larger amount of albumin is found in the urine than one would expect from the amount of pus, probably belong to the type of pyelonephritis. An examination of the pus and epithelial cells gives but little if any practical assistance in an accurate anatomic diagnosis.

The greater difficulty in procuring a specimen of urine in an infant is one reason why urinalysis is more often neglected than in the adult. And yet this difficulty can always be overcome and is no excuse for a failure to examine the urine. Specific directions must be given to insure success. In the male child a rubber finger cot or condom can be left in place until the child urinates. In both sexes, in older infants, if the child is quickly placed on a chamber, after a long nap it will usually urinate. If this is not successful, the infant can be washed clean and left until it urinates on a clean rubber sheet or oil-cloth, so arranged that the lowest part is in the region of the buttocks. If there is a diarrhea, or if this method cannot be employed for some other reason, then the mother or nurse can watch the exposed baby, cup in hand, until the moment arrives when the urine can be caught. This may be tedious, but it is important. Finally, if these methods fail, or if one wants an uncontaminated specimen for bacteriologic examination, the catheter with proper aseptic precautions can be freely used, as urged by Hirschsprung² thirty years ago. The use of a mass of cotton cannot be recommended, as it is apt to sift out many of the pus-cells, and is otherwise not as serviceable as the other methods.

While a urinalysis is imperative for a positive diagnosis, in many cases after a little experience a fairly certain diagnosis can be made without it. A persistent high temperature in a female infant, sensitiveness, a striking ashy pallor, the occurrence of chills, with practically no physical findings to point to any localization, indicate with a great deal of probability a pyelocystitis. The utter disproportion between the severity of the disease and the physical findings is strongly diagnostic.

PROGNOSIS

In the ordinary type, that of pyelitis or pyelocystitis, which forms the great bulk of these cases, the prognosis is distinctly favorable. In some fifteen cases that I have seen no patient has died.²⁰ In Goeppert's¹⁶ cases, on the other hand, the mortality was 12 per cent., or, if one includes three cases in which the urinary infection was only partially the cause of death, and three others that left treatment in a critical condition, the mortality was even 20 per cent. Such a mortality requires qualification. The prognosis of these cases depends materially on the treatment. If the patients are untreated, the prognosis is bad; if they are properly treated, it is very good. Goeppert's cases were practically all among private office patients, the majority of these among the poorer classes, among whom a rigid, persistent treatment was impossible. His mortality statistics cannot therefore be applied to more favorable conditions.

²⁰ Since writing this I have had a fatal termination in an infant of 3 months.

Friedenwald¹⁵ speaks of twenty autopsies in Finkelstein's series of eighty cases, a mortality of 25 per cent. From the nature of the material probably only a proportion of the patients died of the disease itself. Deductions from the morbidity of a foundling asylum would not apply to private practice. The pyelonephritis cases offer a more gloomy prognosis, partly because of the seriousness of the lesion, partly because of the previous weakened condition of the child. These cases are not hopeless, however, since there is a natural tendency to arrest, resorption, and cicatrization of the little abscesses, and very little tendency to the formation of large abscesses that would require surgical treatment. It is hard to believe that these cases occur in any considerable number, and in general one is justified in saying that the prognosis of the urinary infections in early childhood is distinctly good as to life and cure, though many of them drag along for months.

TREATMENT

There is little that can be offered in the way of prophylaxis, except local cleanliness, the avoiding of diarrheas and infections and the maintaining of the general health at a high level.

After the disease is established the child should be kept quiet, its diet should be watched carefully, and it should be given an abundance of liquids, especially water or alkaline waters, to flush the urinary tract.

The English writers, especially Thompson⁹ and Still,¹⁸ give large doses of alkalis, especially potassium citrate, half a dram to a dram or more a day in divided doses. Thompson's⁹ statement is well worth quoting:

The main and the only essential treatment consists in rendering the urine neutral, when passed, by the administration of alkaline remedies, as speedily as possible, and in keeping it so until all the symptoms have disappeared. When this indication is thoroughly carried out, its good results are very remarkable. The pain and uneasiness rapidly vanish and the temperature falls to normal within three days. The pus cells also disappear. The bacteria, however, may persist for a long time after the pus has gone; but they seem to do no harm. . . . The alkaline treatment must be continued for a week or two at least, in spite of the depressing effect which it has on the child's general condition and the loss of appetite which it is apt to occasion. If it is stopped too soon the symptoms return.

Nearly all German and American clinicians depend on urinary antiseptics, hexamethylenamin (urotropin) and phenyl salicylate (salol), as of first value, and recommend alkaline drinks as of value in diluting and possibly alkalizing the urine. Heubner⁶ warmly recommends hexamethylenamin in doses of 1 to 2 grains three times a day. Finkelstein prefers salol. Goepfert uses salol in all acute cases, in doses of 1 to 3 grains five to eight times a day for ages varying from two months to two years, and finds, "as early as thirty hours after its administration a decided improvement in the general condition." After the acute stage he uses hexamethylenamin and throughout urges the ingestion of large amounts of water, especially alkaline waters, even giving it by gavage and enema if not well taken by mouth. He expects a cessation of fever and of discomfort in the first two or three weeks and a pus-free urine in five weeks, and maintains that many cases get well in five to eight days.

Such rapid improvement has not been the rule in my own experience. Many of the cases drag along for months, often with distinct intermissions, in spite of any treatment. Ultimately the patients are cured clin-

ically, in nearly all cases. My own procedure is to crowd water in every way, to try alkalis first, and if there is not a decided improvement in a few days, to substitute hexamethylenamin, or salol in doses of 1 to 2 grains every three or four hours to an infant 1 year old and to keep this up for a long time to avoid the relapses that are only too common.

The severer cases with cortical abscesses, of course, are influenced but little by any of these remedies. They require also treatment of the underlying condition and general tonic and supportive measures.

In conclusion, permit me to emphasize the one important point in the subject that I have discussed: In every child, and especially in every female infant, that has a continuous or intermittent high temperature, the cause of which is not clinically obvious, an examination of the urine for pus is imperative.

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THE ESOPHAGOSCOPE IN REMOVING SHARP FOREIGN BODIES FROM THE ESOPHAGUS

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The impaction of sharp foreign bodies in the esophagus is of comparatively frequent occurrence, but the rational treatment thereof—the extraction by esophagoscopy—has apparently not received the attention that it deserves.

The esophagus at times seems remarkably tolerant to the presence of foreign bodies; in some instances such bodies have remained in the organ for years. On the other hand, cases are on record in which death has followed in twenty-four hours after the accident.

Any foreign body lodged in the esophagus should be promptly removed, but I wish particularly to call attention to the danger of procrastination when we have a sharp foreign body to deal with.

It has been my fortune to relieve a number of patients who have accidentally had foreign bodies impacted in the esophagus. Those which I have extracted have been of various kinds, but pieces of bone have impressed me as being particularly dangerous.

SYMPTOMS AND TREATMENT

Pain and difficulty in deglutition and tenderness of the neck, with rise in temperature, are the main symptoms of a sharp foreign body in the cervical part of the esophagus. If a perforation of the esophageal wall has taken place in the cervical part there will be an emphysematous condition of the neck. When the foreign body has become impacted in the thoracic part of the esophagus there may be pain and difficulty in deglutition, but it must be kept in mind that there may be no symptoms whatever until perforation takes place.

As the first step in treatment, the pharynx, the pyriform sinus and the inlet of the esophagus is anesthetized with a 10 per cent. solution of cocaine, and the esophagoscope, without the obturator, is introduced under the guidance of the eye. When the foreign body comes into view its position is noted, and with a special forceps it is carefully dislodged and extracted. Esophagoscopy generally ought to be done without the aid of an obturator, in order to enable the operator to inspect the entire tract through which the instrument passes, but that is a matter of choice. In case of sharp foreign

bodies, however, the obturator must never be used, because damage may be done to the wall of the esophagus by pushing on the sharp foreign body. For the same reason the bougie, the probang, and similar instruments must be condemned. It will readily be seen that additional injury might be done in a case like my Case 2, reported below, the actual condition of which is pictured in Figure 6, if an instrument is introduced blindly. The use of a sound or bougie for diagnostic purposes may be deceiving, as these instruments, in several instances, have failed to demonstrate the presence of even a large foreign body. The forceps used for the extraction of foreign bodies belongs to a set of instruments, which I have

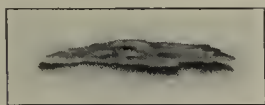


Fig. 1.—Piece of mutton-bone (actual size) removed from patient's throat (Case 1).

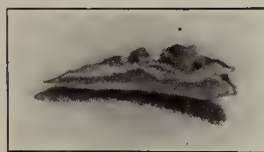


Fig. 2.—Beef-bone (actual size) removed from patient's throat (Case 2).

devised for esophagoscopy and bronchoscopy work.¹ When the foreign body has been caught in the forceps the instrument can be locked.

It may be necessary to cut or break the foreign body before it can be extracted, and for that purpose Kahler's forceps is useful. Thus a tooth-plate impacted in the esophagus can be reduced in size by cutting with Kahler's forceps, or it can be burnt through by a specially made galvanocautery point or snare.

The accidental swallowing of an open safety-pin is not infrequent. The pin enters the esophagus with the point upward, and traction on the pin in the latter direction would naturally force the point into the esophageal wall. For the purpose of closing the open safety-pin *in situ* and extracting it through the esophagoscope I have devised an instrument shown in Figure 7. The instrument is introduced with the wire loop C withdrawn. When the latter is below the safety-pin the wire loop is pushed out by pressing the lever on the handle and pulled up on the open pin. The steel wire B with the hook D on the distal end is now pushed down and turned on to the pin, after which the loop is closed, locking the pin. The steel wire with the hook prevents the safety-pin from slipping up when the loop closes in on it.

If the foreign body has perforated the wall of the esophagus and caused a periesophageal abscess in the

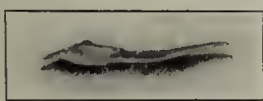


Fig. 3.—Fish-bone (actual size) removed from patient's throat (Case 3).

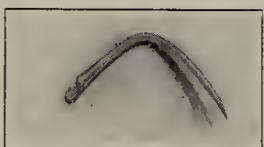


Fig. 4.—Fish-bone (actual size) removed from patient's throat (Case 4).

cervical part, the use of the esophagoscope is contraindicated. Such an abscess must be dealt with from without, and as early as possible in order to prevent the burrowing of pus into the posterior mediastinum. If the foreign body has perforated the thoracic part of the esophagus and caused a mediastinal abscess, the use of the esophagoscope is imperative before opening the mediastinum in order to determine on which side the abscess is located. A case illustrating this point is

reported in recent German literature, in which the posterior mediastinum was entered without finding the abscess. Post mortem the abscess was found to be in the mediastinum on the opposite side. It was shown that this could have been determined by esophagoscopy before the operation.

To perform esophagotomy in case of impacted foreign body, before extraction by the esophagoscope has been tried, is not justifiable for the reason that esophagotomy for the removal of foreign bodies has considerable mortality. In 326 cases of external cervical esophagotomy for the removal of foreign bodies collected by Balacescu and Kohn,² the mortality was as follows:

In the pre-antiseptic era (prior to 1880).....	26.5 per cent.
In the transitional stage (1880-1890).....	27.8 per cent.
In the antiseptic era (1890-1900).....	17.8 per cent.
In the aseptic era (1900-1903).....	12.6 per cent.

Nauman³ has later collected forty additional cases with a mortality of 17.5 per cent.

REPORT OF AUTHOR'S CASES

CASE 1.—Mrs. F. T., aged 45, had swallowed a piece of mutton-bone which lodged in the throat forty-eight hours previous to consultation. Swallowing had been very painful since. Esophagotomy had been advised before the patient was referred to me. The neck was very tender on palpation, especially on the left side. No emphysema of the neck. Temperature was 102 F. After cocaineizing the throat the esophagoscope was introduced and the bone found in a slanting position in the middle of the cervical part of the esophagus, the lower end being embedded in the mucosa. The bone was

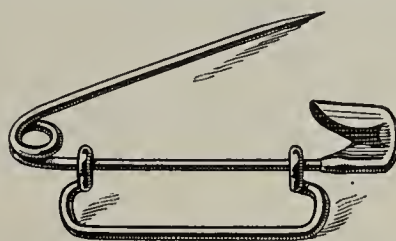


Fig. 5.—Safety-pin (actual size) removed from patient's throat (Case 5).

grasped by the forceps and quickly extracted. It was 2 cm. in length and very sharp at both ends (Fig. 1). Recovery ensued.

CASE 2.—Mrs. L. A., aged 58, while taking her evening meal three days previously to consultation, had swallowed a piece of beef-bone, which stuck in her throat. The neck was very tender to touch, more so on the right side, and the patient suffered great pain on swallowing. There was no emphysema of the neck. The temperature was 103 F. Through the esophagoscope the bone was seen crossways in the lower cervical part of the esophagus, with both ends buried in the wall (Fig. 6). When it was extracted foul-smelling pus welled up from the right wall. The piece of bone measured 18 mm. in length, was rough and sharp at both ends (Fig. 2). Pus discharged through the mouth for some time. On esophagoscopy a few weeks later the abscess cavity, which evidently had been in the submucosa, had closed. Recovery ensued.

CASE 3.—A. J., aged 65, had had a fish-bone lodged in his throat eight hours previous to consultation. Some blood came up shortly after the accident. Deglutition was painful. No emphysema of the neck existed. Esophagoscopy disclosed the fish-bone in the lower cervical part of the esophagus. It was removed by forceps. The lower end of the bone was engaged in the mucosa. It was quite stout, sharp, and 16 mm. long (Fig. 3). Recovery occurred.

CASE 4.—C. D., aged 25. A fish-bone lodged in the patient's throat seven hours previous to consultation. Deglutition was quite painful. There was no emphysema of the neck. Esoph-

1. Illustrations of these instruments appeared in my article, Contribution to the Surgery of the Esophagus, Surg., Gynec. and Obst., October, 1910.

2. Balacescu and Kohn: Arch. f. klin. Chir., 1904, lxxii, 408.

3. Nauman: Deutsch. Ztschr. f. Chir., 1906, lxxxiii, 479.

agoscopy revealed a bent fish-bone, with the convexity upward, in the cervical part of the esophagus. The bone was easily extracted (Fig. 4). Recovery.

CASE 5.—A girl, aged 2, swallowed an open garter safety-pin four hours previous to consultation. The child was crying constantly. Respiration was normal. The esophagoscope was introduced without the administration of an anesthetic, and the lock end of the pin was seen at the inlet to the esophagus with the point imbedded in the anterior wall. The point was dislodged and the pin extracted (Fig. 5). Recovery.

In the first four of these cases the foreign bodies were removed quite readily. Case 5, on the other hand, was very difficult, because the safety-pin was a large one with a strong spring; furthermore, the point was well

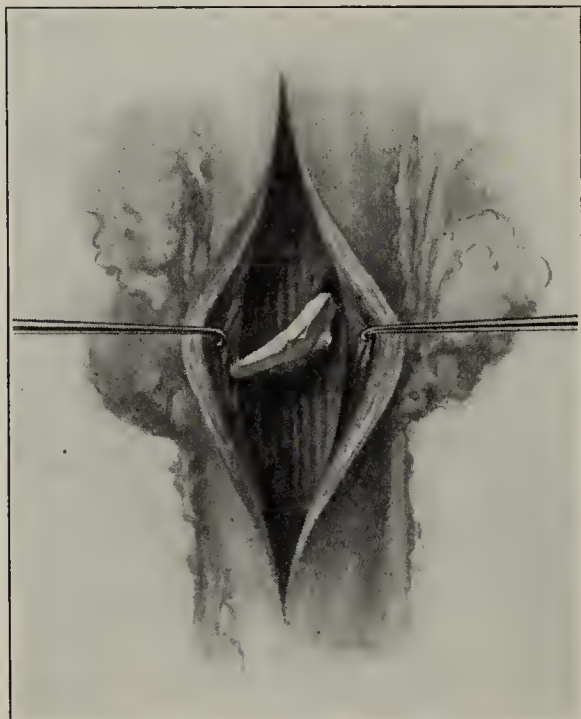


Fig. 6.—Piece of beef-bone, 18 mm. in length (shown in Fig. 2), lodged in patient's throat (Case 2).

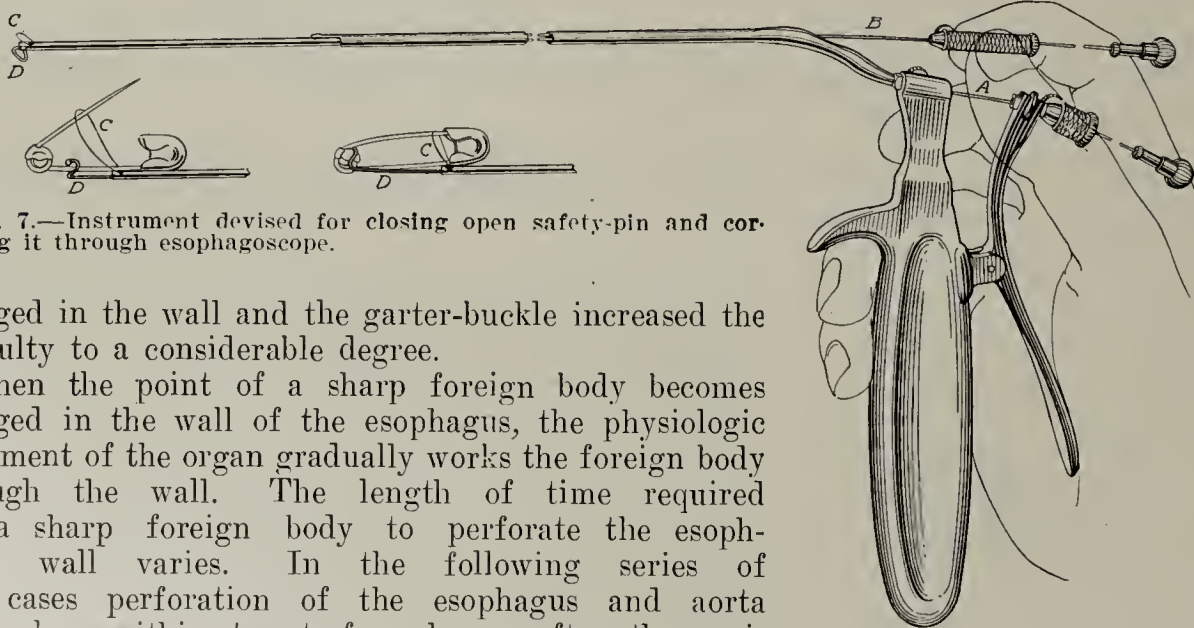


Fig. 7.—Instrument devised for closing open safety-pin and correcting it through esophagoscope.

engaged in the wall and the garter-buckle increased the difficulty to a considerable degree.

When the point of a sharp foreign body becomes engaged in the wall of the esophagus, the physiologic movement of the organ gradually works the foreign body through the wall. The length of time required for a sharp foreign body to perforate the esophageal wall varies. In the following series of 200 cases perforation of the esophagus and aorta took place within twenty-four hours after the accident in two cases; in eight cases the esophagus and the aorta became perforated in from five to ten days after the accident. There have been no deaths among the patients whom I have treated.

CASES FROM THE LITERATURE

In order to ascertain the fate of swallowed foreign bodies in a larger number of cases, I have collected reports of 200 cases from literature since the year 1900. In these my own cases are not included.

The mortality in the 200 cases was 12.5 per cent (twenty-five deaths), of which twenty-three deaths, or 11.5 per cent, were due to perforation of the esophagus with its consequences.

The seat of perforation was:

Upper thoracic part in.....	15 cases
Cervical part in	5 cases
Lower thoracic part in.....	1 case
Location not mentioned in.....	2 cases
(The aorta was perforated in twelve cases, and the common carotid artery in one case.)	

The foreign bodies causing perforation and death were:

Piece of bone in.....	10 cases
Pins and needles in.....	4 cases
Coin in	3 cases
Fish-bone in	2 cases
Tooth-plate in	2 cases
Iron-washer in	1 case
Brooch in	1 case

Splinters of bone caused the highest mortality in the cases collected by me, and in the series of Balacescu and Kohn, above referred to, twenty-two patients out of seventy-nine who had splinters of bone impacted, died after esophagotomy.

There were no deaths in the forty-seven cases in which the foreign body was removed by esophagoscopy except one, in which previous attempts had been made to extract the bone with the coin-catcher. These attempts had caused a long rent in the wall of the esophagus followed by mediastinitis and death.

There were forty-one different kinds of foreign bodies, of which the following were the most frequent:

Tooth-plate in	41 cases
Piece of bone in.....	34 cases
Coin in	26 cases
Pins and needles (common pins, scarf-pins, hat-pins, darning-needles, etc.)	22 cases
Open safety-pin in.....	18 cases
Fish-bone in	4 cases
Metal whistle in.....	7 cases
Metal button in.....	5 cases
Piece of wood in.....	4 cases

The location of the foreign body in the esophagus was mentioned in 118 cases as follows:

Cervical part in.....	58 cases
Upper thoracic part in	33 cases
Lower thoracic part in	27 cases

Tooth-plates were the most frequent foreign body impacted in these series. Nine tooth-plates were passed per rectum, thirteen were removed by esophagotomy, eleven by esophagoscopy, five by gastrotomy, etc.

In several of these cases the plate had remained in the esophagus for many months, which illustrates what a remarkable tolerance the organ occasionally will exhibit. In one case a tooth-plate remained above the cardia for several months without symptoms, then distress and pain occurred. Death followed operation. In another case the plate remained in the esophagus for eighteen months before it perforated the bronchus; after operation, death occurred. Another patient was relieved of an impacted tooth-plate eleven months after by combined gastrotomy and esophagotomy. One case is reported in which a tooth-plate remained in the upper thoracic part of the esophagus for four months, causing a perforation into the trachea. The plate was then extracted and gastrotomy performed.

The tracheo-esophageal fistula subsequently healed. Recovery.

The methods of treatment used in these cases collected by me were:

Esophagoscopy in	47 cases
Esophagotomy in	27 cases
Gastrotomy in	10 cases
Esophagotomy and gastrotomy in.....	2 cases
Esophagotomy and esophagoscopy in....	1 case
Coin catcher in	12 cases
Probang in	5 cases

The longest time a foreign body remained in the esophagus before being successfully extracted was four years. In one case a coin remained four and one-half years in the esophagus; then it caused perforation and death.

The youngest patient on whom esophagoscopy was performed was 4 days old (extraction of a rubber nipple). The oldest patient on whom I personally have performed esophagoscopy was 86 years old.

Besides the twenty-three cases of perforation of the esophagus in these series, there were eighteen cases of perforation of the abdominal or pelvic viscera, with two deaths.

CONCLUSIONS

1. Esophagoscopy is not a difficult procedure, and it gives the best results in the treatment in these cases, with the least discomfort to the patient.

2. The use of instruments in the esophagus, except through the esophagoscope, in case of sharp foreign body, should be abandoned.

3. In every case in which the swallowed foreign body is not recovered, an esophagoscopy examination of the esophagus should be made.

4. Even if the foreign body is successfully pushed into the stomach, the patient is not entirely beyond danger.

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GRAVES' DISEASE

A NEW PRINCIPLE OF OPERATING BASED ON A STUDY OF 352 OPERATIONS *

G. W. CRILE, M.D.
CLEVELAND

Among 219 operations for colloid goiter and benign tumors I had two deaths, one from suppression of urine, the other from myocarditis after healing had occurred. I shall not allude to the malignant and infection cases. My study is of 121 operative cases of exophthalmic goiter, particularly an inquiry into the cause of operative hyperthyroidism, and into the development of a safer technic.

CHANGES IN THE BRAIN CELLS IN A CASE OF GRAVES' DISEASE

In a case of Graves' disease, the patient being unoperated on and free from infection, which ran a natural course to its termination in death, a pathologic examination of the brain and cord was made by Dr. J. B. Austin. The following is his summary:

In the cord but slight changes were seen; in the medulla there was considerable chromatolysis, the Nissl granules were in moderately fine division, and the nucleus plasma relation was changed; in the cerebellum approximately 30

per cent. of the Purkinje cells were seriously altered and many were destroyed; in the cortex there was marked chromatolysis, the nucleus plasma relation was disturbed and many cells were destroyed. A detailed report will be made elsewhere.

THE CAUSE OF THE SPECIFIC REACTION—HYPER- THYROIDISM—FOLLOWING OPERATION FOR GRAVES' DISEASE

In operations in exophthalmic goiter, the principal risk is an acute exacerbation of the disease, usually called hyperthyroidism, the most conspicuous symptoms being tachycardia, high fever, restlessness, tremor, and finally delirium. Against this risk there is at present no known specific remedy. Were it not for this uncontrollable outburst, the operative risk would be but slight. Surgeons agree that there is a group of cases so severe that an adequate operation cannot by any method be performed safely. It is the purpose of this paper to present a new principle of operating whereby this group of cases may, I hope, be reclaimed. If we are to operate safely we must change our method. To this end we shall first inquire into the cause of the acute hyperthyroidism produced by the operation itself. Resolving the operation into its principal component parts, we have the rôle played by (1) hemorrhage; (2) infection; (3) manipulating and cutting the thyroid; (4) the anesthetic; (5) the psychic disturbances; and (6) the operative trauma to tissue other than that of the thyroid, as factors in the consideration of hyperthyroidism.

HEMORRHAGE AND INFECTION

I have seen acute outbursts of Graves' exacerbation follow a bloodless technic in lobectomy and in simple ligation. Hemorrhage is not, then, an adequate cause.

Infection almost never occurs; Graves' exacerbation frequently occurs. Infection may be excluded.

ABSORPTION OF THYROID SECRETION FROM HANDLING OR CUTTING THE THYROID TISSUE

Patients with exophthalmic goiter are abnormally susceptible to thyroid extract. Serious exacerbation and death have followed a single therapeutic dose of the extract. May there not be an increased absorption of thyroid secretion produced by cutting or handling the thyroid? If so, the secretion must be liberated either by manipulation of the gland or by its discharge from the cut surface. In a serious case I have known the patient to be repeatedly and thoroughly massaged by an osteopath without producing a marked increase in the symptoms. I have never observed an exacerbation follow the physical examination of the gland. In the first instance—the massage—at least, there was certainly more mechanical disturbance than was caused by the very gentle manipulation of the gland in the ligation of a single superior thyroid artery in one emaciated patient, when there followed a fatal outburst of hyperthyroidism. Moreover, Kocher, the creator of the surgery of the thyroid, as a routine measure crushes with a heavy forceps a zone of the gland prior to its ligation and division. He notes no increased hyperthyroidism resulting. In several excisions, in which other factors were excluded and in which there was a certain amount of handling, but trifling reaction followed. At least gentle handling must therefore be but a minor factor.

Is there an increased discharge and absorption of the thyroid secretion from the cut surface of the gland? I

* Read in the Section on Surgery of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

have seen no diminution of reaction when the cut surface was immediately treated with pure phenol and alcohol; when immediately seared over with the actual cautery; when the division was made between ligatures; and when the wound was left open and the raw surface was covered with a large gauze pack. On the other hand, I have seen the usual reaction when there was no raw surface left in any part of the wound; and finally I have seen no more reaction when the presumably preventive measures were all omitted. It would appear, then, that the "raw surface" and "squeezed juice" hypothesis do not adequately explain operative hyperthyroidism.

THE ANESTHETIC

Kocher and his school operate under local anesthesia, believing that despite the ordeal there is less reaction following. Mayo and many other Americans use general anesthesia. At first glance it might seem that one or the other method should be the better and should be the method of choice. It can be shown later, I believe, that each has its own field, and that neither can supplant the other.

In several desperate cases, in which the margin of safety of the patients was tested by anesthetizing, without the patients' knowledge, with ether or with nitrous oxid, there was a moderate though short exacerbation of Graves' symptoms following both modes of anesthesia, though more marked in the case of ether. In all cases there is, during the transit from primary to surgical anesthesia, a stage of unpreventable subconscious excitement during which the heart-beat is quickened, respiration is accelerated and in which muscular disturbances may occur. Test doses of morphin and scopolamin, though in certain respects unfavorable, have produced no corresponding exacerbation of symptoms. In severe cases, on the other hand, ligation of the upper poles under local anesthesia, with exclusion of the psychic factor, caused no appreciable reaction. Hence I conclude that general anesthesia, *per se*, contributes a minor factor, and local anesthesia, *per se*, no factor in the production of the specific reaction in Graves' disease.

PSYCHIC FACTOR

Fear may temporarily paralyze normal animals and men. Even death has been caused by fear. It occurred to me that the brain-cells of an animal in intense fear might show physical changes. Accordingly Dr. J. B. Austin and Dr. H. G. Sloan made such observations for me on frightened rabbits. A study of the central nervous system showed the following:

The cells of the brains that were secured in the midst of fright showed marked hyperchromatism; those that were taken several hours later showed marked chromatolysis, a disturbance of the nucleus plasma relation, and some broken-down cells. The spinal cord showed but slight changes, the medulla more and the cerebellum and cerebral cortex most. These experiments will be elsewhere reported in detail.

The potent influence of the psychic factor in exophthalmic goiter is admitted. This factor alone has caused death in serious cases under both medical and surgical auspices. However, if the surgeon has permission to use his discretion as to the fact as well as to the time of operation, the dangerous psychic factor may be eliminated. The employment of the technic, which will be elsewhere described, by which the exclusion of the psychic factor is effected, enables the surgeon to operate with less reaction in the "fair risks" and to undertake successfully more

serious risks, but serious reactions are often seen despite the total exclusion of the psychic factor.

Recapitulating, then, it may be stated that the specific reaction or hyperthyroidism following operation is not due to hemorrhage, to infection, or to an excessive absorption of thyroid secretion from cutting or at least gentle handling of the gland; that it is somewhat influenced by the general anesthetic and markedly influenced by the psychic factor. There still remains the occurrence of specific Graves reaction not accounted for by the factors thus far considered. The only other factor left is the operative trauma of the tissue of the thyroid, and all other tissue as well.

Is the reaction in Graves' disease in cases of trauma of other parts of the body different from that of the normal organism? Barton Cooke Hirst collected and studied reports of 71 operations on various parts of the body other than the thyroid gland in patients suffering from Graves' disease. Many were minor operations, and on the whole the operative risk, had the patients not had Graves' disease, could not have been over 1 per cent. The mortality rate was over 15 per cent. The cause of death in every instance was hyperthyroidism. This table shows that the surgical risk in Graves' disease is as great in operations on other parts of the body as on the thyroid itself, and that the cause of the so-called hyperthyroidism must be found outside of the thyroid gland. My personal cases show a remarkable reaction to trauma. In one patient—a seriously sick one, it is true—a simple hypodermic injection of salt solution, given as a test, caused a psychic storm attended by a leap of the pulse from 140 to 186, with acute cardiac dilatation, trembling, sobbing, rise in temperature, almost overwhelming the patient and lasting over four hours. This is typical though extreme. An analysis of the phenomena will disclose the remarkable fact that the reaction from the mere prick of a sharp needle was perhaps greater than that following a hysterectomy or an amputation in the normal individual, perhaps a thousandfold greater reaction than normal. This is another way of saying that patients with exophthalmic goiter are hypersensitive to trauma just as they are hypersensitive to fear; and fear and trauma are phylogenetically close akin. Possibly this is the master key to our problem.

Arguing from the foregoing hypothesis, I then devised a technic for simple ligation and for excision. A careful inventory is first made of the pathologic physiology of each case. This usually requires several days. During this time a concerted effort is made by nurses and staff to instil hope and confidence into the patient. After such study of the case the type of operation—simple ligation or excision—is decided on.

If excision is to be the procedure the following routine is approximately followed:

The patient's reaction to small doses of morphin and scopolamin is ascertained. Daily inhalations, which are presumably for some medicinal purpose, but which are precise rehearsals of ether anesthesia, are practiced by the anesthetist, Miss Hodgins. Ether is tentatively dropped on the inhaler along with the volatile oils, and the patient is cautiously, without her knowledge, tried out as to ether anesthesia—sometimes is completely anesthetized—all this in her own bed. The results are then studied and if the patient seems unsuited for the operation of excision, ligation is done as later described. If the central nervous system and heart take the practice march well, the entire operation is then performed as follows: Long previous consent to an operation having been obtained, the patient is given morphin and scopolamin on the appointed morning, is kept absolutely quiet, is then gently



Fig. 1.—Experiment 87. From a case of exophthalmic goiter. The cell has lost almost all its chromatin. The nuclear membrane is ruptured and the nucleolus is breaking down.

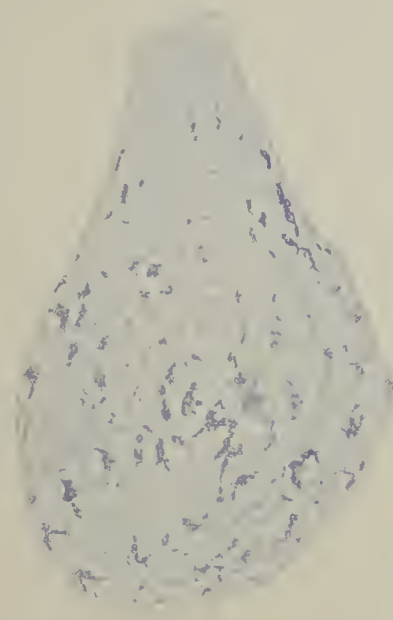


Fig. 2.—Experiment 87. Completely exhausted Purkinje cell. Nucleolus is broken down and the cell is greatly increased in size. From a case of exophthalmic goiter.

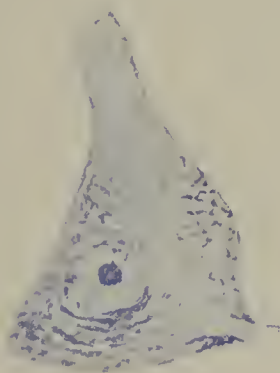


Fig. 3.—Experiment 87. Pyramidal cell from the motor cortex in a case of exophthalmic goiter. Marked loss of chromatin; ruptured nuclear membrane, and a nucleolus which is beginning to break down.



Fig. 4.—Experiment 87. From a case of exophthalmic goiter. Pyramidal cells from the motor cortex. A completely exhausted cell; no chromatin present. The nucleus and the nucleolus have entirely broken down and disappeared.

anesthetized to the second stage, in bed as before, and is at once taken to the operating-room, where nitrous oxid is substituted for ether. The operative field is as completely cocainized as if no general anesthesia were being given. First the skin and fascia of the opposite side, are incised about one inch. Through this incision, by means of a full curved needle, the upper pole of the gland (Stamm) and all of the overlying tissue inclusive are firmly ligated. Then in the gentlest possible manner the opposite lobe is excised bloodlessly, absolutely avoiding traction on any uncocainized sensitive tissue—precisely as if the patient were awake. After the operation the utmost care is exercised to keep down to a minimum psychic and painful stimuli.

If simple ligation is to be done quite another technic is followed, namely:

After the patient is easy and comfortable under morphin and scopolamin, and not before, I tell her all that she will probably experience. Everything being in readiness—skin, fascia, and muscles—a transverse distance of an inch overlying the upper poles of each thyroid is carefully cocainized. An incision is then made through the skin and fascia, a full curved needle is swept from without inward in such a manner as to include the upper pole of the thyroid, as well as all other structures lying between the bottom of the incision and the larynx. This ligature is then tied and a superficial stitch or two closes the skin. A similar procedure repeated on the opposite side completes the double ligation. It is helpful to chat with the patient meanwhile. The operation is performed on the patient in bed.

The twelve operations performed on this principle are in a class by themselves as to the operative reaction. Even in a case in which the patient's entire body was edematous and the terminal stage of the disease had been reached, the reaction was slight. The technic as a whole is difficult to carry out perfectly. In the strict surgical sense every case by this method is operable at least to the extent of a ligation, though the lesion of the heart and brain may be so extensive as to preclude a final cure.

Granted we have mastered the operation, have we thereby mastered the disease itself? The disease, I believe, may be cured in one or more ways: (1) if the brain cells are sufficiently repaired by absolute rest; (2) if the nerve connection between the brain and the thyroid be interrupted in part by tying the upper thyroid poles, which include half or more of the nerve supply; or (3) if the secreting structure of the thyroid be diminished by partial excision or by cytolytic serum (Beebe's).

Of these three methods excision is the most effective. The immediate relief to the patient following excision is one of the most striking clinical phenomena in surgery.

I therefore conclude that in exophthalmic goiter a pathologic reciprocal interaction between the brain and the thyroid gland exists, and that this reciprocal interaction can be maintained through a nerve connection only. How else could a psychic or a traumatic impulse reach the thyroid and influence its secretion than through a nerve connection or possibly by a hormone action? Many glands of the body respond to adequate psychic and mechanical stimuli. A familiar example is the salivary gland, whose secretion may be excited by the thought of palatable food (psychic), or by the presence of a neutral foreign body—a piece of wood, a pebble, or dental instrument (mechanical). It is generally believed, as opposed to the preceding statement, that the benefit following ligation of the superior thyroid artery is due to the diminution of the blood-supply. In Graves' disease the thyroid, like the placenta in an abdominal pregnancy, builds up a great mass of blood-vessels from the neighboring tissue,

especially from the trachea and larynx, so that the superior thyroid not only constitutes a minor part of the blood-supply, but the rich anastomosis revascularizes, probably within a few days, the anemic zone produced by ligation. Then, too, how slightly, as observed in the course of operation, is the hemorrhage diminished by ligation of the superior thyroid artery alone? Simple ligation of the superior thyroid, as it seems to me, is an inadequate explanation of the vast clinical transformation, sometimes lasting months, or even years, following ligation, especially when we take into account the fact that much of the nerve-supply to the thyroid gland enters along the walls of the blood-vessels, and that in ligating the vessels the nerve-supply must be included. May it not well be that the entire mechanism—the cause, the exacerbation and hence the cure—will prove to have a nervous setting and that the thyroid hypersecretion is no more the cause of the disease than is saliva the cause of the psychic phenomena attending the thought of food? Whatever may be the explanation, I draw no conclusion at present.

SUMMARY

The principal points presented in this paper may be summarized as follows:

In one fatal case of simple exophthalmic goiter the brain-cells were found to be widely and extensively affected. Pure fear caused physical lesions in the cells of the rabbit's brain. The principal cause of so-called hyperthyroidism incident to operations on cases of Graves' disease is the adequate psychic and traumatic stimuli, both of which are phylogenetically closely akin; the psychic stimuli may be excluded by special orienting and the traumatic stimuli by an absolute cocainization of the operative field. By a combination of both local and general anesthesia, ligation and excision may be safely done. The value of ligation probably lies mainly in its breaking part of the nerve connection with the brain. The value of excision is the diminution of the total quantity of the gland secreting structure and the breaking of the nerve supply as well.

Between the brain and the thyroid gland in Graves' disease a pathologic reciprocal interaction seems to exist. Patients in Graves' disease are specifically hypersensitive to trauma, to psychic stimuli and to thyroid secretion. When operated on and then immediately returned to the environment that originally produced the disease they frequently relapse. Patients operated on and then given a prolonged rest-cure, which alone can repair the damage to the brain-cells, are nearly all cured. It requires approximately the same length of time to recover from exophthalmic goiter as it does to recover from a nervous breakdown from other causes. A combination of surgery and an adequate rest-cure is, as I believe, the method of choice and will cure most patients.

My thesis is that the explosive exacerbation after operation is not due to the commonly accepted cause, such as escape of thyroid secretion into the circulation, but is due to injury to tissue and to fear, and that it may be prevented by excluding the psychic factor and by blocking the nerve-supply of the field with local anesthesia so that no impulse arising from injury of the operation can reach the brain. By this method even patients with advanced and otherwise hopeless cases of Graves' disease, abandoned by both the internist and the surgeon, may be operated on with safety and prepared for the maximum benefit from a rest-cure.

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ABSTRACT OF DISCUSSION

DR. A. J. OCHSNER, Chicago: The work which Dr. Crile has done in connection with exophthalmic goiter, and the particular points he has mentioned this morning, are of sufficient importance to be borne in mind by all who deal with this condition. Especially is it important for us to remember that many of the conditions, which we formerly considered of most importance as causes of postoperative hyperthyroidism, are really of no special importance. In exophthalmic goiter we have a very severe destructive condition, which is due to the hyperthyroidism to which the patient has been exposed. Undoubtedly, most human beings are capable of neutralizing a certain amount of hyperthyroidism without having the tissues of the nervous and circulatory systems materially affected. In our normal bodies there is a condition of balance, so that the destructive effect of hyperthyroidism is not apparent. On the other hand, let one of us become exposed to an unusual strain of the nervous or physical system and immediately this balance may be destroyed and we may show the effects of this hyperthyroidism, particularly in the heart and nervous system. Tachycardia and the other well-known symptoms may appear. When we come to operate on these patients suffering from exophthalmic goiter, we deal with a condition of poisoning of these important structures, and by the addition of a very slight amount of further poisoning the balance is entirely overthrown. Whether in any given case this can be occasioned by the mental condition, or by a slight physical trauma, or by expressing into the tissues in the region of operation a certain amount of thyroid fluid, we do not know, but we do know that when the patient is overburdened with one or several of these conditions hyperthyroidism results. Any one of these conditions may produce an additional amount of hyperthyroidism, which makes the operation a dangerous one. It is only by eliminating, so far as possible, all the additional burdens placed on the patient that we avoid danger, and unless we do so we are bound to get the effect of excessive hyperthyroidism. I have discarded the operation under local anesthesia entirely except for the ligation operation. Möbius claims that the mental strain of local anesthesia is greater than the physical strain of general anesthesia, which seems reasonable, and in my work I have actually found that general anesthesia is harmless to the patient. The manner in which we accomplish this is to anesthetize the patient absolutely with ether given by the drop method; then we place her in the inverted Trendelenburg position, so as to produce an anemia of the brain, and perform the operation without giving any further anesthetic. The patient does not complain of any pain or discomfort afterward. In this way we protect the patient against two of the sources of physical and mental depression, and I believe that we have succeeded in that way in eliminating hyperthyroidism to the greatest possible extent.

There is one other point which Kocher brought out, namely, that of local absorption, and in two instances in which I did not provide for free drainage, there was hyperthyroidism. The thing I wish to impress on you particularly is that we must not try to eliminate this, or that, or the other cause, but that we must eliminate every possible cause that might do harm to anyone.

DR. ARCHIBALD MACLAREN, St. Paul: Dr. Crile is correct in his statement that the element of fear enters very markedly into the dangers of the operation for exophthalmic goiter. Whether other causes, such as hyperthyroidism, may or may not play a rôle, fear is a very decided element, and without doubt increases the mortality of the operation cases. I have employed Dr. Crile's suggestion of putting the patient to sleep without her knowledge, and since then I have not seen any hyperthyroidism. By not letting the patient know when the operation is to be performed, and by giving a volatile oil preliminary to the anesthetic as a "treatment," say the day before, and gradually coming to the administration of ether, the patient is anesthetized without her knowledge and, I am sure, does much better.

DR. MARTIN B. TINKER, Ithaca, N. Y.: Dr. Crile manipulates the gland very carefully and skilfully, and this undoubtedly has been a factor, and an important one, in his results. I

would like to bring up one or two points in this connection: Dr. Crile states that he has not seen hyperthyroidism resulting from handling of the gland. I have in my records several cases of hyperthyroidism from handling during examination; in one patient in particular the temperature went up to 103 F. after examination only, and I believe with no other factor than the handling to account for it. A second point brought out by Dr. Ochsner is the importance of drainage. I do not know any man who does much of this work who does not provide for proper drainage. If the dangerous symptoms after operation are from psychic causes only, why should we drain?

Another point which deserves extra emphasis is the preliminary careful examination of the patient. Success in the severe forms of exophthalmic goiter depends very largely on our ability to estimate what the patient can stand. I have been accustomed not only to do the preliminary ligation, but to divide the operation, if necessary, into several stages. In certain cases I have operated in as many as five stages, first ligating the superior thyroid, then exposing the gland, next removing the gland, then closing the wound, and in certain cases I have added another step, that of ligating the inferior thyroid vessels before removing the gland. Since attempting this stage operation I have done over one hundred consecutive thyroidectomies in bad cases of exophthalmic goiter without loss of life. I believe that this factor, the careful estimation of the condition of the patients, doing just what they can stand and no more, is extremely important.

Dr. Crile implies that general anesthesia is used by Dr. Mayo, but all who have seen him operate know that Mayo now uses local anesthesia in many of his ligations. I believe that local anesthesia is a very important factor in eliminating shock, and that with efficient local anesthesia it is unnecessary to use general anesthesia, at least in the majority of the cases. My experience since trying to estimate the severity of my cases more carefully and doing the operation in stages leads me to believe that these with local anesthesia are the most important factors in the results.

DR. WILLIAM R. CUBBINS, Chicago: We ought to consider this thing from another standpoint, remembering its close association with the islands of Langerhans, the suprarenal capsule, the sympathetic system, and the hypophysis. The removal of the gland must be carefully considered, along with the mental effect produced on these very excitable patients. In addition to the Von Graefe sign, the tremor, rapid pulse and enlarged gland, I have observed that there has been a marked increase in the blood pressure, varying from 185 to 210 Hg. Immediately following an operation, the patients have uniformly stated that they were markedly improved, and complain of few, if any, of the original symptoms, while on examination we find the original symptomatology present with only a slight reduction in the blood pressure, say from 157 to 170. The pulse is still rapid, the eye prominent and the tremor marked. After eight or nine months there may be noticed a marked improvement of these symptoms, but I do not believe it is right to allow an inference to go out that in these patients operation is followed by immediate complete cure.

DR. C. H. MAYO, Rochester, Minn.: Within the last few years I have written a number of papers on the treatment of exophthalmic goiter, and in nearly all, as I reviewed them later, I was reminded of a deformed child. I seem always to have attributed my success to some particular part of the technic which I do not now use at all. Once I used the Paquelin cautery to prevent absorption from the raw surface and the exudation of the serum. Next I used phenol and then Harrington's solution. Now I do not use anything on the gland, and in 800 cases my results have been just as good as they were when using the cautery and solutions named. In the early days the patients coming to the surgeon were in bad condition, often on the verge of death. Surgeons have come to recognize these cases and do not operate when the condition is hopeless. There are several types of goiter, and we should be able to recognize them.

In Rochester we operate on the gland itself by removing or ligating its blood-supply. We treat patients by cystolysis with

a serum. By ligation we secure a change in the blood supply, and this change may come through other influences. There may be a tendency to recover in one-fourth of all cases. We ligate when we think that the patient cannot survive a radical operation for removal of all of the gland. This puts the fatal cases over into the ligation series. We have reduced our mortality greatly by exercising judgment in selecting the operative cases. If the patients are not in a suitable condition to be operated on, they are put under medical treatment until we feel that something can be done for them. We ligate, say, one artery to-day, another in a week or two weeks, and so on.

The choice of an anesthetic is not so important. I often use local anesthesia. I have had two deaths following the ligation of the thyroid artery, one under general and the other under local anesthesia. As Dr. Crile has stated, the psychic factor plays a great part in these cases. Patients with marked psychic disturbances are not suitable for any kind of an operation and they should be left in the medical class. We cannot always select the cases or make an exact diagnosis of conditions, but by carefully studying the patients and giving suitable treatment, we certainly can diminish the mortality very materially and also get much better results.

DR. G. W. CRILE, Cleveland: In Kocher's clinic there are certain patients with advanced exophthalmic goiter on whom he does not undertake to operate. He, like Mayo, found that if he operated in such cases the patient died, and the cause of surgery and the interests of the patient are not conserved.

I wish to suggest a method that will permit the surgeon to do a ligation on every patient who is still alive. The operation can be done in bed, in a minute or two, without pain and without reaction. The field can be cocaineized without frightening the patient to death, as many patients with exophthalmic goiter have been. If fear is eliminated, and it can be done perfectly well, there will not be any trouble. When the brain is marooned, it does not appreciate that an operation is going on. Therefore, the patient must be kept psychically and physically in a negative phase. There is no reaction, and I believe, from what we have now discussed, that it is quite evident that we can do a ligation in any case. I do not say that all patients can be cured, because some of these cases are far advanced. I have operated on patients who have been on the verge of delirium. I have operated on them in bed without any reaction. It is not in the mild, recent cases, but in all cases, that the patients are benefited by ligations.

Knowing, as we do, that in exophthalmic goiter changes in the brain cells take place, how can we expect merely to operate on the glands and then submerge the patients again in an environment from which they received the disease and expect them to recover promptly? My idea is that the operation serves to break the pathologic chain that is enthralling the patient; that once broken, the patient may be cured by being compelled to take the rest cure. Operation is only one phase of the treatment. The rest cure and after-care are other phases, and it takes from two months to a year, or even more, before these patients can be said to be cured, and unless they are completely cured at the first trial they are more difficult to treat when a relapse has occurred. I have often seen cases which bear out this statement. Surgery should try so to perfect its technic that in every case, no matter how bad, the patient may be speedily operated on and benefited. Surgical treatment is only one step in a cure. A long rest cure must follow. This is as necessary in goiter as it is in a nervous breakdown from any other cause.

Fatigue in Neurasthenia.—Under normal conditions the sense of fatigue is not unpleasant, and if followed by timely rest may be a positive pleasure. If, however, effort is pushed to the point of complete exhaustion, symptoms are apt to arise which closely resemble those of neurasthenia. The individual becomes mentally depressed and indifferent to all other considerations but himself; effort of all kinds, physical or mental, is painful, he suffers from headaches, backaches, etc., and is irritable and sleepless. All these and similar symptoms, whether the result of physical or mental labor, depressing emotions, prostrating illness, etc., sooner or later yield to appropriate rest and régime.—D. Ferrier, in the *Practitioner*.

SODIUM CACODYLATE IN SYPHILIS

A SECOND NOTE

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I recently published¹ a report of a case in which a typical chancre was successfully treated with sodium cacodylate. Dr. L. L. Michel² questions the results. I therefore submit the accompanying portrait of the patient, taken Jan. 10, 1911. The dark part on the lip shows the location of a bleb-like elevation that was caused by the patient's drawing the lip under the upper teeth, to hide it when he was on the street, because he was ashamed of the chancre. The patient is well and healthy, has gained weight, and his kidneys are acting normally. He has no ocular signs of poisoning, and no return of the secondaries. He is apparently cured.



Patient treated with sodium cacodylate for chancre on lip.

I have been using the sodium cacodylate side by side with 606 and while I am glad to say that I have had good results with 606, I have had just as good with sodium cacodylate. Dr. Michel, in his letter² to *THE JOURNAL*, tells of chancres on the lip and elsewhere healing under the influence of the soluble salts of mercury in two weeks, or thereabouts. I do not doubt this, as I have had the same result myself with mercury, but mercury is just what we are trying to get away from. I find that patients tolerate sodium cacodylate well and its toxic effect does not show until after very strenuous treatment. Dawes and Jackson³ found that it required 0.8 gm. injected to kill a rabbit; in the case reported I have given in all, over a period of one month, 46 grains.

600 Grand Avenue.

1. *THE JOURNAL A. M. A.*, Dec. 24, 1910, p. 2211.

2. *THE JOURNAL A. M. A.*, Jan. 21, 1911, p. 211.

3. Dawes, S. L., and Jackson, H. C.: The Physiologic Action, Elimination, and Therapeutic Application of Sodium Cacodylate. Used Hypodermatically, *THE JOURNAL A. M. A.*, June 22, 1907, p. 2090.

A PLEA FOR GREATER CARE IN ARRANGING PATIENTS ON THE OPERATING-TABLE FOR THE PREVENTION OF THE COMMON POSTOPERATIVE WEAK BACK

THE PRESENTATION OF AN APPARATUS FOR HOLDING THE LITHOTOMY POSITION WITHOUT STRAIN

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In a previous paper¹ I called attention to the importance of considering the positions in which patients are placed during the performance of operations so that the sacro-iliac joints and the lumbar spine cannot be strained.



Fig. 1.—Faulty position without support for the back and with the thighs hyperextended. Strain of the lumbar spine and sacro-iliac joint must result.

The facts that such strains do often occur and that many patients are harmed because of these unnecessary strains in connection with operation cannot be questioned; but only those who have to do with the treatment of weak or painful backs or with chronic joint diseases in adults can appreciate how frequently such conditions occur.

In the article referred to the position in which the patient should be placed, if the operation requires the horizontal position on the back, or the Trendelenburg position, was shown, as well as the undesirable position in which strain of the lumbar spine and sacro-iliac joint are possible, and because of the apparent importance of the subject, this section of the previous paper is quoted:

"We must remember that, when lying on the back, if the bed or supporting structure is hard so that the buttocks cannot settle into it, the lumbar spine must sag downward, and if the buttocks are large or the waist small, the amount of this sag may be enough to cause painful strain on the interspinous ligaments or on the sacro-iliac joints. . . .

"This means that in planning operations we have responsibilities other than those which have to do with the purely local lesion. At such times, if the whole body is considered, the strained sacro-iliac joints with the distressing backaches and with the not infrequent disability which results from this will not occur. The patient will not be put on the table as shown in Figure 1, since in this position the thighs are hyperextended, the axis of the pelvis must be drawn forward, thereby raising the upper part of the sacrum and the lumbar spine. There being no support for the spine, however, it must sag back again, and with this the sacrum must be dragged downward, the two influences necessarily resulting in definite strain of the sacro-iliac joints, with subsequent backache. Not only this, but as the result of the hyperextension of the thighs and the tilting

downward of the anterior part of the pelvis the abdominal muscles must be stretched, making unnecessarily difficult the separation of these muscles during abdominal operations. With the slight support under the back to prevent the sag of the spine and also under the knees so that hyperextension is prevented (Fig. 2), all of these undesirable features can be overcome without in any way interfering with the important elements of the position."

In regard to the protection of the patient when the operation calls for the lithotomy position, while the desirable position as well as the common undesirable position was shown, it was quickly realized that the maintenance of the desirable position was practically impossible with any of the resources at our command. Because of this the apparatus



Fig. 2.—Correct position, with lumbar spine supported and with pillow under knees to prevent the hyperextension. No strain of the lumbar spine or sacro-iliac joint can result under these conditions.

which is here described was designed, and it is the presentation of this that has seemed to me a sufficient justification for the communication.

In studying the subject I have been impressed by the fact that not only do the patients often receive harmful strains of the back by being placed in these positions, but the assistants at such operations are often severely

1. The Relation of Posture to Human Efficiency and the Influence of Poise on the Support and Function of the Viscera, Boston Med. and Surg. Jour., Dec. 9, 1909.

strained and unnecessarily exhausted because of the positions which they are forced to assume—positions which no human being can maintain for long without harm. The frequent giving out of the assistants at such operations while the operator himself remains

place, interferes with the usefulness of the assistant, and when the coverings are in place unnecessarily obscures the field. In the next place, to hold the leg in this position for the length of time of the usual operation is absolutely impossible, since the weight of a

leg is no small thing and since no muscle even under favorable conditions (and this would be decidedly unfavorable) can maintain its contraction for more than a very few minutes without becoming wearied and relaxing. This must result if the assistant attempt to hold the leg, and it not only allows ultimate drag of the leg, but represents a source of unnecessary strain for the assistant.

To overcome this the leg-rest that is shown in Figure 3 has been constructed by the Kny-Scheerer Company and can be secured through them for attachment to any table. It consists of the flat rest on which the lower leg is placed, and the adjustment of the position of this is made by raising or lowering the upright, for the height, or by rotating the upright so that the double angle moves the rest farther away or nearer to the patient. When the leg is once placed in the desired position (Fig. 4), the position cannot be changed except as the operator may wish, and not only this, but the assistant has a definite rest on which he can lean without harm to the patient. In this way the extreme weariness of the assistant, which must come when the body is used in the flexed and partially rotated position with only the muscle supports to protect it, is entirely eliminated.

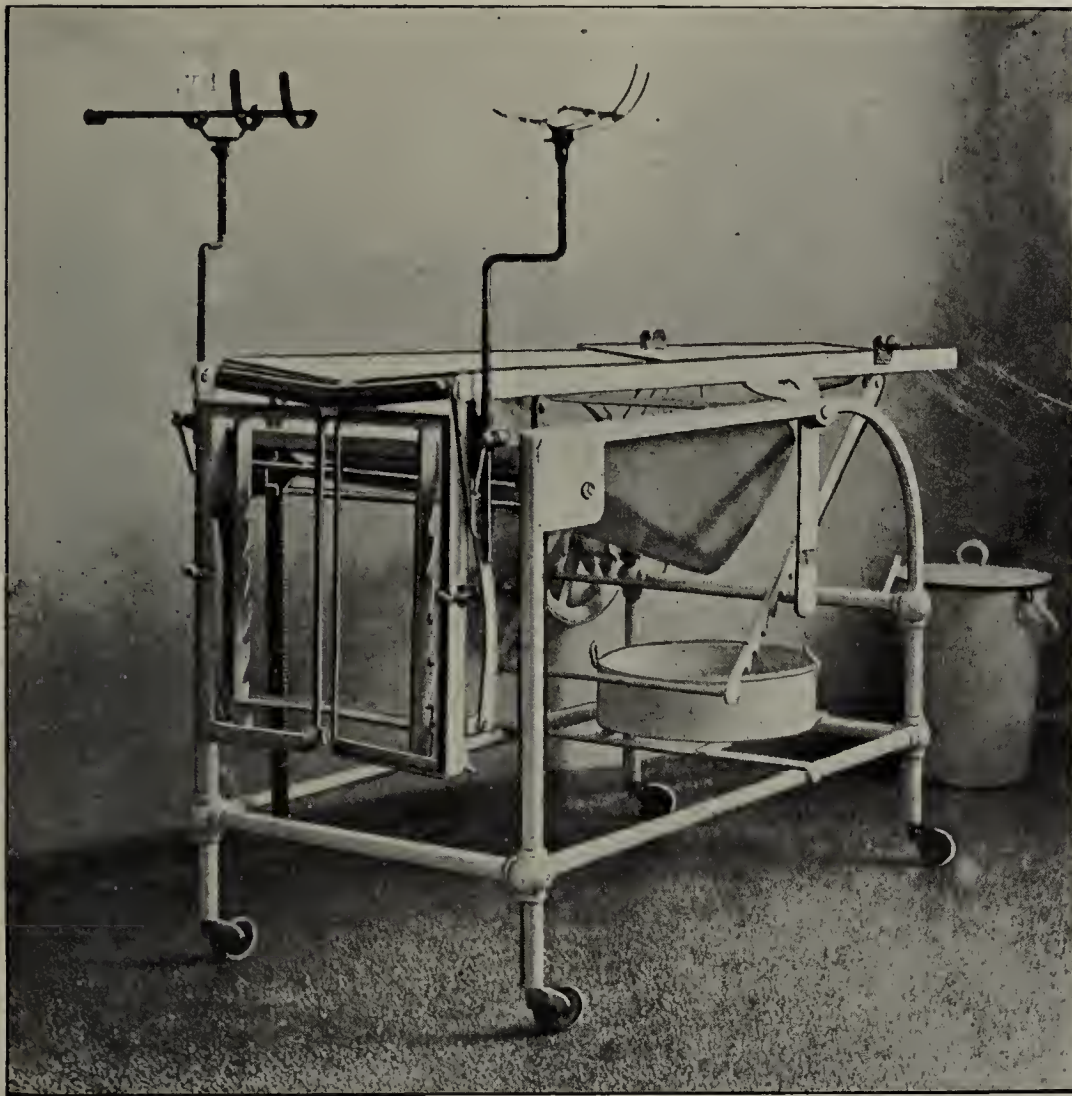


Fig. 3.—Table with adjustable leg supports.

fresh, in my studies has made me try to devise something that would not only protect the patient, but would protect the assistant also.

To quote again from the article above mentioned: "With the lithotomy position, also, there is a right and a wrong way of obtaining this. If the thigh is sharply flexed and at the same time abducted, and if, as is so commonly seen with this, the assistant rests on the leg as he reaches over to assist the operator, the ilium must be strained downward and backward, with resulting sacro-iliac strain and weakness." If, however, the thigh is flexed less sharply and if a bandage or strap is attached about the knees to prevent the marked separation of the knees, "the position can be maintained indefinitely without harm and without sacrificing the essential features of the position."

The same opinion is held to-day in the present comment as at the time of the presentation of the earlier paper, but I now realize fully that, while the position last mentioned is the desirable one, it cannot be maintained without definite mechanical aid. The strap about the knees to prevent the extreme abduction of the thighs in the first



Fig. 4.—Lithotomy position, with legs supported on the rests shown in Fig. 3. Once arranged, the position cannot change except as the surgeon may wish.

The effect on the position of the thigh which results from trying to support the leg on the upright commonly attached to operating-tables, in which the leg hangs by a noose around the ankle, is shown in the left leg of

Figure 5. This must result in the sag of the legs apart, with at the same time the outward rotation of the thighs, both positions meaning strain to the pelvic joints, which must be greatly increased if the weight of the assistant is added. The contrast to the position of the right leg in this illustration is at once apparent.

In the experiments which were made in planning the leg rest I myself took the positions in which the patients are commonly placed, and if anyone has any question as to where the strain is received I would suggest that that person make the same experiment on himself.

In conclusion I wish simply to call attention to the fact that the position in which the patients are placed at the time of operation has much to do with the presence or absence of postoperative backaches and the sub-

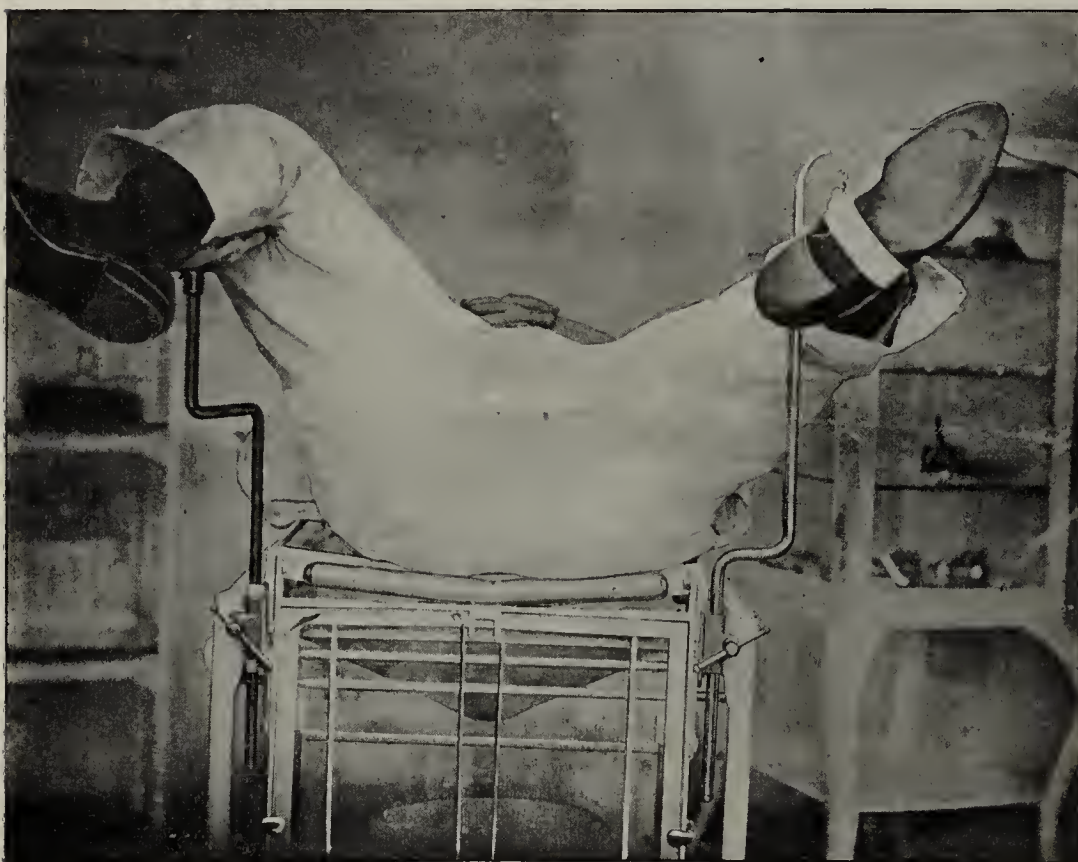


Fig. 5.—The right leg correctly supported, the left supported by the ankle noose which must allow sag and joint strain.

sequent weakening of the sacro-iliac joints. The positions in which strain will not take place are so easily obtained that there is no possible excuse for such harmful conditions occurring. An apparatus is shown in which the lithotomy position can be maintained indefinitely without strain either to the patient or the assistant.

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Plague Eradication and Rats in India.—In one house in Belgaum 197 rats were caught in the course of a year; this was a grocer's shop in the city market. It was a small house of three rooms, occupied by six people, Mahomedans, and it is a curious fact that the house possessed two cats. There were seventeen houses in which more than fifty and less than a hundred rats were caught; nine of these were ordinary dwelling houses, two were grocers' shops, one a grain godown, two liquor shops, one butcher shop, one stable, and one weaver's house. Two hundred and thirty-seven houses yielded a catch of more than twenty but less than fifty rats. Twenty-four of these were grocers' shops, sweetmeat sellers or grain stores, nineteen were weavers, eight were tailors' shops. No other trade seems to possess any influence especially favorable to rat infestation. The Indian cat is not a particularly good rat catcher.—Reports on plague investigations in India.—*Journal of Hygiene*.

INTRACRANIAL SURGICAL LESIONS IN CHILDREN *

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I wish to present a series of cases consisting of different cranial and intracranial lesions, giving brief history, the operation performed and the indications for surgical interference, as well as the results obtained. Although in this series the results have not been so flattering as one would wish, I hold the long existence of the lesion responsible for producing destruction irreparable by surgery.

The best results in surgery are achieved by prompt action, and the surgery of the brain is no exception. When once areas of the brain are destroyed we can hope but little for repair. Many of my patients are brought to me when all hope for improvement has been abandoned months and even years after.

Most of the patients have been given potassium iodid for long periods, and perhaps several periods, no results having been obtained. Physicians have been changed and another course of potassium iodid given, when three and at most six weeks should have given positive proof that the treatment was of no avail.

If a child had a broken arm, what physician would wait twelve weeks to reduce it or wait until an abscess had formed, as was done in the skull fracture in Case 12? This also should remind us of the disasters that may happen weeks after an apparently slight head injury.

Early surgical interference in fracture of the skull, with intracranial hemorrhage, will be rewarded by almost certain recovery (Case 2), while delay for months or years hoping against hope that the focal symptoms if present will disappear, can lead only to discouragement and disappointment after operation (Cases 3 and 4). Much improvement may, however, be obtained in children after several years' delay (Case 5). Constant localized headaches should demand our most serious attention and our greatest efforts to determine the cause, as they may mean localized diseased areas within the skull (Case 6). Severe headaches following chronic otitis media associated with dizziness, rapid rise and fall of temperature, nausea and vomiting, frequently demand prompt surgical interference (Cases 7 and 8) to prevent extension into the cranial cavity.

I have studied carefully a number of children with impaired mental development, endeavoring to learn what was the cause of the mental defect and what benefit could be derived from medical and surgical treatment in these cases. Many children, soon after birth, suffer from malnutrition, probably from some unknown hereditary cause. Many of these cases improve under medical

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

treatment while others seem to be benefited but little, or not at all. It is the latter class that I wish to report.

These children frequently have convulsions from twenty-four hours to a week after birth, associated with slight rise in temperature and apparent unconsciousness. After the attack they fall asleep for several hours, the attack being repeated at indefinite periods. These attacks may be associated with involuntary movement of the extremities or face. Home treatment is resorted to. The parents discover later, however, that the children are not so bright as other members of the family,



Fig. 1.—Patient 4, just before operation. Decompressed fracture, duration fifteen years.



Fig. 2.—Patient 10, before operation.

or children of the same age in other families, and it is then that the family physician is told of the symptoms the child presents. Frequently there is a tuberculous tendency in the family, but more frequently there is a syphilitic taint. Many of these children improve under antisyphilitic treatment, but if the improvement is temporary it is not conclusive evidence that the underlying cause is not syphilitic, for many of these children will not tolerate antisyphilitic treatment, nor will they be benefited if it can be tolerated. I have found in these

cases, capillary arteriosclerosis as early as the sixteenth month, the findings and symptoms of these children indicating intracranial pressure. Not until the pressure has been relieved will the administration of mercury or potassium iodid prove beneficial; but many of these patients seem to make marked improvement after decompression, followed by antisyphilitic treatment.

In cases of chronic tuberculous meningitis the children have not improved after operative interference, while in chronic syphilitic meningitis every patient has apparently improved under antisyphilitic treatment after decompression.

It is my rule to make a Wassermann test in all cases, and if it is found positive or questionable to repeat the test, and also make a test on both father and the mother. I have not failed in a single instance, when I secured the positive test in the baby, to find either the father or mother giving a like test.



Fig. 3.—Patient 10, two months after right and left temporal decompression, showing bulging in temporal region.

Cases 9, 10, 11, 12 and 13 are selected from a series representing the above class of cases. In all cases of suspected brain tumors, if the tumor can be located, operation should be done with the hope of removing the tumor or relieving intracranial pressure, trusting that the tumor can later be removed. The decompression must be done before the patient has advanced ocular or mental disturbance (Case 14).

Children presenting, soon after birth, paralysis of a hand or leg should be closely watched and if the paralysis progresses and there are signs of intracranial pressure or rapid extension producing progressive paralysis, much, I think, may be done in the way of benefiting and saving the lives of these babies. If a large opening is made in the skull and intracranial pressure relieved (Case 15).

Following is a brief history of the cases referred to above:

CASE 1.—History.—R., a girl aged 6, American, entered hospital Oct. 28, 1906, at which time she had been sick six weeks with headache and some fever; diagnosis, typhoid fever. The patient improved slowly only to relapse again to her former condition. Family history negative; the patient had had usual diseases of childhood; measles at age of 4; father living and well, aged 50; mother living and well, aged 50; has four brothers and four sisters. On the afternoon of Oct. 28, 1906, the patient's headache became severe and she became stupid and then unconscious. At this time her condition was so grave that she was taken to Willard Hospital, arriving there about 3 a. m., where I first saw her. Six weeks before becoming ill she had slipped on the deck of a boat while returning from England, striking her head against a bolt-head, but little thought was given this and no medical aid sought. She complained of headache a few days; then was apparently as well as usual.

Examination.—At the hospital, pulse was 60, respiration 10, temperature 98.5. Blood-count showed hemoglobin 78, reds 3,400,000, leukocytes 26,000, polymorphonuclears 80. A diagnosis of intracranial pressure was made.



Fig. 4.—Patient 11, before operation, showing crossed and spastic condition of lower extremities.

Operation and Result.—Under chloroform anesthesia, a large subdural abscess was drained. The time consumed was forty minutes. The patient improved until the tenth day when she had a chill, rapid rise of temperature and died on the twelfth day following the operation. Temperature per rectum was 106.6, pulse 138, respiration 60. The post-mortem findings were diffuse meningitis, and double pneumonia.

CASE 2.—History.—F., a boy aged 7, American, entered Willard Hospital July 6, 1908. Family history negative; had had measles and scarlet fever. July 6, 1908, patient fell from a stairway to a cement floor, a distance of about eight feet. He was unconscious when picked up but remained so only a few minutes. After regaining consciousness he appeared perfectly well for about forty-five minutes; then gradually relapsed into unconsciousness and remained so. This was accompanied by vomiting and muscular twitching, followed by violent involuntary muscular contractions of the entire body. The pupils were widely dilated; there was a large swelling in left parieto-occipital region. Dr. W. J. Butler first saw the patient and brought him to the hospital at 8 p. m., two hours after the injury. I first saw him at 5:30. Diagnosis was fracture of the skull with hemorrhage.

Operation and Result.—Patient was taken to the operating-room at once. A large bone flap was reflected; there was no extradural hemorrhage, but a large intradural hemorrhage filling the subdural space; the dura was opened and a large flap turned up. Bleeding points were ligated with fine catgut. The wound was closed without drainage. Time of operation and preparation was forty minutes; anesthetic, chloroform. Patient awoke from the anesthetic conscious, made an uninterrupted recovery and left the hospital on the tenth day cured.



Fig. 5.—Patient 11, two months after operation. Able to sit up and hold head erect. The head is not leaning against the back of the chair.



Fig. 6.—Patient 16. Baby 2 weeks old. Infected cephalematoma, drained and cured.

CASE 3.—History.—Miss P., Polish girl aged 15, entered Willard Hospital Nov. 5, 1908. Family history negative; patient had had usual diseases of childhood. Two years before while watching a parade patient jumped off the back porch to a cement sidewalk, a distance of about 15 feet. She fell on her side, striking the right side of the head against the walk. She was unconscious for a short time. On regaining consciousness she had a paralysis of the left leg and arm which grad-

ually improved for about six months, after which there was no improvement. At time of admission she could not walk and could not use the left arm or hand. Examination revealed a depressed fracture in the right parietal region.

Operation and Result.—A large bone flap was raised; dura was found adherent to other coverings of brain and the brain itself; the bone flap was replaced without drainage. The anesthetic used was chloroform; time of operation, one hour. Patient has improved enough to walk with a cane, but the left arm is little benefited.

CASE 4.—History.—W., a man aged 21, American, family history negative, was kicked by a horse in left frontal region at the age of 7. The physician at this time removed a number of pieces of bone, and some brain tissue was lost. Wound healed, leaving a large pulsating wound. At the age of 14 the patient developed epilepsy and had frequent and severe attacks. On entering the hospital the attacks were as frequent as several a day.

Operation and Result.—Large skin flap made and a large amount of depressed skull removed. Wound was closed without drainage. The time of operation was about one hour. Anesthetic, chloroform. Patient developed pneumonia and died on the fifth day following the operation.

CASE 5.—History.—C., a boy aged 4, entered Willard Hospital March 15, 1909. Mother says he was a large baby, labor long and difficult. She was finally delivered with instruments. Baby seemed well and the physician noticed nothing wrong, but the child cried a great deal and did not move his arms and legs as did her other two babies when they were young. The mother said that the child never made any attempt to use his left hand. The physician informed her that in time the arm would be used. At 6 months the mother discovered that the left arm and leg were paralyzed. The baby always lay on his back, never attempting to sit up. He cried nearly all the time he was awake. At the age of one year he still made no attempt to sit up. At this time a physician was consulted and the mother was informed that the baby was paralyzed on the left side and the paralysis would be permanent. At the age of 16 months the mother laid him face downward and he learned to pull himself along with his right hand, pushing with his right leg and foot. He first sat up when he was 2½ years old and would hop about, using his right leg and arm. This was his mode of travel when I saw him in the hospital. He could stand on his right foot if supported, or could get hold of some object, as a chair, table, etc. He had never talked, nor could he be taught. His temper was violent and he at times would beat his head against the floor.

Examination.—The left arm showed nothing abnormal except atrophy. The left leg was atrophied and the patient had a marked talipes varus.

Many physicians had been consulted and none gave the mother any hope, but the mother consented to the request of Dr. Rominger (to whom I am indebted for the case) to allow us to operate and see if there was pressure that could be relieved.

Operation and Result.—March 16, in my clinic at the Willard Hospital I turned back a large bone flap on the right side and found extradurally several large deposits of lime salts. These were peeled off like fish scales. The dura was then opened but nothing pathologic found. The bone flap was replaced and in about one week the child began to use the arm a little. He left the hospital at the end of the third week able to stand with the aid of a stick used as a support. A letter from his mother recently says that he is talking a little and can walk well without any assistance. His great difficulty now is the club-foot. This case was undoubtedly one of extradural hemorrhage following injury by the forceps. The clot was partially absorbed; the rest calcified. Had this patient been operated on when a few weeks old there is no doubt that the result would have been more satisfactory than at so late a date—four years after the injury.

CASE 6.—History.—An American girl aged 18, family history negative, six years ago at the age of 12, complained of pain in the knee and hip; six months later she developed a sinus at the hip.

Treatment and Result.—The head of the femur was resected, but the sinus did not close. One year later I amputated the left lower extremity at the hip, as the x-ray showed necrosis of the femur and there were multiple discharging sinuses in the thigh. The wound healed nicely but soon the left elbow became swollen and painful and a sinus developed, communicating with the lower end of the humerus. This was curetted and the external condyle chiseled away. This healed and in a few weeks the patient developed a temperature of 106, respiration 60, with rigidity of the neck, and head drawn back. A diagnosis of tuberculous meningitis was made. She improved, temperature reaching normal in six weeks, but with a rise in the evening around 102. All this time there was severe occipital headache. As the pain was constant and localized I trephined and removed a necrosed plate of skull 2 inches by 2½ inches from the parieto-occipital region. Before this was healed, a mastoiditis developed on the right side and later a mastoiditis on the left side. Both were operated on and healed. The patient has had in all thirteen operations and has had tuberculin injections for eighteen months. In June, 1910, she was in better health than at any time since I first began to treat her, five years ago.

This patient has had right and left mastoiditis, with an extradural abscess in the parieto-occipital region.

CASE 7.—History.—P., a French boy aged 9, family history negative, entered the Willard Hospital, Dec. 13, 1909. Six weeks previously he complained of pain in the left ear, which was treated, and after a paracentesis of the tympanum he improved rapidly and the physician was discharged. A few days later the boy complained of frontal headache. This was accompanied by vomiting and dizziness. The following day the headache was more severe and the dizziness and vomiting worse, but the patient complained less, appearing stupid. About 4 a. m. December 13, the parents could not arouse the patient to give him his medicine. He was brought at once to the Willard Hospital, when I first saw him, with his attending physician, Dr. Stoll. A diagnosis of intracranial abscess was made.

Operation and Result.—The mastoid antrum was opened and the skull trephined just above the mastoid. About a dram of pus escaped; a gauze drain was inserted and the usual dressings applied. The patient soon regained consciousness and made an uninterrupted recovery, leaving the hospital in two weeks.

CASE 8.—History.—M., boy aged 9, American, family history negative, two months previous to entering the Robert Burns Hospital, Feb. 20, 1910, had acute otitis media. His physician, Dr. Brode, went South for a rest and the patient received no medical care until the evening of February 20, when Dr. Stewart was called and found the patient suffering excruciating pain, terrific occipital headache and at times apparent delirium.

Operation and Result.—At the hospital the mastoid antrum was opened and found full of pus. The lateral sinus was exposed and a few drops of pus could be seen oozing from the skull along the sinus. A probe was passed along the sinus and pressure made against the sinus when a large quantity of pus was liberated. A plate of the skull was now removed just above the sinus and a large extradural abscess drained. Patient made a good recovery and left the hospital in ten days.

Cases 7 and 8 will, I am sure commend to all of us the advisability of removing large plates of skull in draining abscesses, either intradural or extradural.

CASE 9.—History.—Infant A, aged 3, American, family history questionable, had a normal rapid delivery; a few hours after birth the nurse noticed that the baby acted strangely and thought that it was having a spasm. The physician was informed and the next day the baby developed a high temperature and became unconscious, remaining so for five days. It then improved but had some paralysis of the left upper and lower extremities. This improved but the baby frequently had apparent convulsions. Soon the lower limbs became crossed, the left anterior to the right and the legs and arms were very rigid. The baby never sat up, never talked, would not chew food and was fed on liquids. At the age of 3 when I first saw it the above condition still existed. Wassermann reac-

tion was positive in the baby and the mother, but negative in the father.

Operation and Result.—A large bone flap was reflected, and brought into view many yellow areas of calcareous material as well as a diffuse capillary sclerosis. A temporal decompression was done and the flap replaced, but the baby never rallied and died from shock six hours after leaving the operating-room.

CASE 10.—*History.*—Edwin K., aged 16 months, had been ill since six weeks old; mother showed a positive Wassermann reaction. The child was born in normal labor. When about six weeks old it was noticed that the child could not control the movements of head; head would fall backward. When stood up it crossed the feet, the left one over the right. There was no paralysis in either arms or legs but the child used the left hand almost entirely. The Wassermann reaction was positive in the patient.

Examination.—There was a spastic condition of both legs and arms; chest well developed; heart negative; moist râles over both lungs; fontanelle closed; eyes reacted to light; arch of palate was high. The anterior cervical glands were enlarged slightly. Patella, Achilles and triceps reflexes were increased. Babinski sign was present in both feet. Wassermann reaction was positive. Measurements: Circumference Reed's base line 17 inches; symphysis mentis around vertex 19 inches.

CASE 11.—*History.*—The patient, Francis K., aged 6, gave a positive Wassermann reaction, as did his mother. The father and mother were living and well. The child was born

from time to time since birth, and some days from 15 to 20. Child seldom cries; sits alone, cannot talk, does not recognize strangers, head in almost constant motion from side to side; sees and picks out bright objects from dull-colored ones; nurses from a bottle the same as a baby; does not hold the bottle herself; lower extremities spastic.

Operation and Result.—Large bone flap was made March 24, 1910. The child made an uneventful recovery following the operation. There was no improvement except that no spasms occurred since the operation and the spasticity of lower extremities is improved. Calcareous deposits were observed along the course of all the arachnoid vessels.

CASE 13.—*History.*—Infant DeP., a girl aged 5, has had pneumonia. Father and mother are living and well. One brother, 4 months old, is well. Labor lasted twenty hours after the first pain, according to the mother's statement. Present trouble began when the child was 3 months old, at which time the parents noticed that her arms and legs began to twitch. The next day she began to have convulsions. She had a high temperature and a diagnosis of meningitis was made. After these convulsions she would lie back with her head drawn backward and the neck rigid. She had been having these convulsions ever since; had had as many as 38 in one day; had had periods of a month or more when she had no convulsions; had none for the previous six months till June, 1910, when she had one, and several since. She never recognized persons nor objects, and was never able to talk. Other-

TABLE OF CASES OF INTRACRANIAL

No.	Name.	Age.	Nationality.	Family History.	Injury.	Duration.	Mental State.	Headache.	Vomited.	Epilepsy.	Pulse.	Respiration.	Temperature.
1	Miss R.	6 yrs.....	American...	Neg...	Yes.....	6 wks...	Unconscious....	?	Yes.	No.	Slow....	Slow.....	Normal...
2	Mr. F..	7 yrs.....	American...	Neg...	Yes.....	None...	Unconscious....	?	Yes.	No.	Slow....	Slow.....	Normal...
3	Miss P.	15 yrs.....	Polish.....	Neg...	Yes.....	2 yrs....	Negative.....	Yes.	Yes.	No.	Normal.	Normal.....	Normal...
4	Mr. W.	21 yrs.....	American...	Neg...	Yes.....	15 yrs...	Negative.....	Yes.	Yes.	Yes.	Normal.	Normal.....	Normal...
5	Mr. C..	4 yrs.....	American...	Neg...	Forceps delivery.	4 yrs....	Never talked....	?	Yes.	No.	Normal.	Normal.....	Normal...
6	Miss B.	14 yrs.....	American...	Neg...	No.....	2 yrs....	Negative.....	Yes.	Yes.	No.	Normal.	Normal.....	Normal...
7	Mr. P..	9 yrs.....	French.....	Neg...	No.....	6 wks...	Unconscious....	?	Yes.	No.	Slow....	Slow.....	100-102+
8	Mr. M.	10 yrs.....	American...	Neg...	No.....	2 mos...	Semiconscious...	Yes.	Yes.	No.	Slow....	Slow.....	103+
9	Miss A.	3 yrs.....	American...	?	Forceps delivery.	3 yrs....	Imbecile.....	?	Yes.	Yes.	Normal.	Normal.....	Normal...
10	Mr. K..	1½ yrs....	American...	?	No.....	1½ yrs..	Imbecile.....	?	Yes.	Yes.	Normal.	Normal.....	Normal...
11	Mr. K..	5½ yrs....	American...	?	No.....	5½ yrs..	Imbecile.....	?	Yes.	Yes.	Normal.	Normal.....	Normal...
12	Miss P.	3½ yrs....	American...	?	No.....	3½ yrs..	Imbecile.....	?	Yes.	Yes.	Normal.	Normal.....	Normal...
13	Miss De P.	3 yrs.....	French.....	Neg...	No.....	3 yrs....	Imbecile.....	?	Yes.	Yes.	Normal.	Normal.....	Normal...
14	Mr. B..	14 yrs.....	German....	Neg..	No.....	6 mos...	Conscious.....	Yes.	Yes.	Yes.	Slow...:	Slow.....	Normal...
15	Infant C.	36 hrs.....	Jewish.....	Neg..	Yes.....	36 hrs...	?	?	No.	No.	.....	Deep, slow...	.....
16	Baby W.	2 weeks..	Jewish.....	Neg...	Yes.....	2 wks...	?	?	No.	No.	Rapid..	Rapid.....	104°

after prolonged labor; had had whooping cough and pneumonia. When 6 weeks old it was noticed that the child could not hold his head up and would not nurse. When 2 years old he had a convulsion which only lasted a short time. He seemed to choke when the attack came on; had high fever at one time. When stood up the child crossed the legs, the left one over the right. Most of the weight is put on the right leg. The child never was able to stand alone or sit up. When put in a chair he had to be tied; he had no control over his body; he was constantly constipated. Child has never been able to talk; he was unable to use his arms until about two years ago; used left hand until a short time prior to June, 1910, when he began to use the right hand; he swallows with difficulty; has had adenoids removed.

Physical Examination.—Heart, negative; moist râles throughout chest; head not symmetrical; right side enlarged; eyes react to light; teeth decayed; hard palate arch is high; cannot control saliva; thyroid gland enlarged. Child has undescended testicles. Skin reflexes normal; disturbance of sensibility; increased triceps reflex; increased patellar reflex; Babinski in both feet; increased Achilles reflex; has been nauseated but did not vomit.

CASE 12.—*History.*—M. P., aged 3½. American, whose father gave a positive Wassermann reaction, has had convulsions

wise she was healthy and developed about as any child of five years.

Examination.—Heart and lungs negative. Achilles tendon reflex present on both sides; more lively on left; no ankle-clonus; Babinski present on both sides. Arm and leg on left side twitched both when patient is asleep and when awake; mouth twitched and drew toward the left; no paralysis of any kind was present but child was unable to stand, although she would sit up and seemed reasonably strong. She seemed to have an appreciation of light and of loud sounds, and was sensible to the touch. When she had the convulsion her right arm and leg twitched, while the left leg lay quiet. (I observed one convulsion.) Wassermann reaction was negative.

The child died thirty-six hours after operation, not reviving from shock. Autopsy showed chronic tuberculous meningitis with the dura and arachnoid adherent to the brain substance.

CASE 14.—*History.*—B., a boy aged 14. German, family history negative, about six months before entering the Willard Hospital, April 6, 1910, complained of feeling dizzy and his parents noticed that he staggered when he walked, especially in the morning. Soon he began to have impairment of vision and projectile vomiting as well as diffuse excruciating headache, at times almost unbearable. There were no local symptoms. A diagnosis of cerebellar tumor was made. Wasser-

mann negative. Blood-count showed no change in number of leukocytes.

Operation and Result.—April 9, 1910, a large occipital bone flap was reflected and the cerebellum exposed, but no tumor could be located. A plate of bone two inches square was removed and the headache entirely disappeared; also the nausea; but both have returned and there has been no permanent relief from the operation; a second operation has been refused.

CASE 15.—Infant G., aged 36 hours, Jewish, born after thirty-six hours' labor (instrumental delivery), was resuscitated with difficulty; scalp lacerated in right parietal region; left arm paralyzed; child in a stupor; later left leg became paralyzed. I advised operation which was refused. Baby died thirty-six hours after birth.

Autopsy showed depressed skull fracture with edema of the brain and membranes in the right motor area.

What might have been accomplished by operation in this and similar cases experience only can enlighten us.

CASE 16.—A baby 2 weeks old developed soon after birth a large fluctuating tumor on left occipital parietal region diagnosed as cephalematoma. On the tenth day the baby developed a temperature of 104 F., which continued until the contents of the tumor (an infected hematoma) were evacuated, after which the temperature dropped to normal and remained normal.

72 Madison Street.

child made a temporary recovery. Then there developed paralysis of one side of the body, but the child developed beautifully mentally up to ten years of age. The result of the operation was remarkable considering the work that had been undertaken. The boy had a fairly good arm and a fairly good leg on the paralyzed side, and was in excellent mental condition until, at 10 years of age, he developed epilepsy. I have advised a second operation. This case has impressed on me the indefiniteness of results in these cases, for the epilepsy may develop years after an apparently successful operation. Our results in removing so-called pressure in cases of spastic paralysis several years ago were universal failures.

DR. CASSIUS C. ROGERS, Chicago: I would like to ask the last speaker if in the decompression operation the dura mater was opened. In children the dura mater has the power of forming skull and unless that is opened the decompression is temporary. In the cases I have reported the results have been encouraging. The patients are as well off since the operation as before, and in most of the cases there is improvement. In every case of intracranial hemorrhage, if operation is done in time, there should be a good result. We would not delay, if the hemorrhage were in the abdominal cavity, to open and tie the vessels, so why should we wait when the condition is in the cranial cavity? Epilepsy may develop twenty or forty years after an injury to the head. I have been operating on such patients for about ten years

SURGICAL LESIONS IN CHILDREN

Wassermann Test.	Paralysis.	Operation.	Findings.	Anesthetic.	Result.	Died After Operation.	Cause of Death.
Not made...	No.....	Yes.....	Brain abcess.....	Chloroform...	Died.....	12 days.	Meningitis.
Negative...	No.....	Yes.....	Fractured skull, subdural hemorrhage.	Chloroform...	Cured.....		
Negative...	Left arm and leg.	Yes.....	Depressed fracture of skull.....	Chloroform...	Improved...		
Negative...	No.....	Yes.....	Depressed fracture of skull.....	Chloroform...	Died.....	4 days..	Pneumonia.
Negative...	Left arm and leg.	Yes.....	Calcified blood clot.....	Chloroform...	Cured.....		
Not made...	No.....	Yes.....	T. B. necroses of skull.....	Chloroform...	Cured.....		
None.....	No.....	Yes.....	Extradural abscess.....	Chloroform...	Cured.....		
+	Limb spastic...	Temporal decompression.	Extradural abscess.....	Chloroform...	Cured.....		
+	Limb spastic...	Temporal decompression.	Capillary arterio-sclerosis.....	Chloroform...	Died.....	6 hrs....	Shock.
+	Limb spastic...	Temporal decompression.	Capillary arterio-sclerosis.....	Chloroform...	Improved..		
+	Limb spastic...	Temporal decompression.	Capillary arterio-sclerosis.....	Chloroform...	Improved..		
Negative...	Limb spastic...	Temporal decompression.	Capillary arterio-sclerosis.....	Chloroform...	?.....		
	Limb spastic...	Yes.....	Chronic T. B. meningitis.....	Chloroform...	Died.....	1 day...	Shock.
Negative...	No.....	Occipital decompression.	Tumor of cerebellum.....	Chloroform...	Died.....	3½ mo.	Cerebellar tumor.
Not made...	Yes.....	No.....			Died.....		Edema of brain.
Not made...	No.....	Yes.....	Cephalematoma.....	None.....	Cured.....		

ABSTRACT OF DISCUSSION

DR. E. H. ABBOTT, Elgin, Ill.: Of four patients referred to Dr. Rogers by myself and operated on this year, one died of surgical shock; two have shown more improvement than he has given them credit for; one showed no improvement, but the younger child on whom he did a double decompression had very little vision before the operation and sight has improved to such an extent in this short time that it can recognize food across the room. The older child, four years old, this child's brother, has an asymmetrically developed skull due to a unilateral hydrocephalus. Dr. Rogers aspirated the lateral ventricle in this case, as well as doing a decompression operation. The time has been insufficient since that operation for us to judge the amount of improvement, but two of the four operated on show decided improvement.

DR. C. G. KERLEY, New York: One feature of these cases of operation on the brain in children that I have observed is the indefiniteness in determining the ultimate results. I had that illustrated in one case, in which a baby was injured by the baby carriage falling down a series of steps and turning over, throwing the child on the stone walk on its head. That child's skull was trephined and the bleeding vessel was ligated. The paralysis was relieved and the

and I have had no epilepsy follow the operative procedure if the patient did not have epilepsy before the operation, and I have operated in cases in which the patient had had repeated attacks of epilepsy before the operation and have been free from these attacks for seven years. The case sent me by Dr. Abbott, in which I introduced a trocar and drained the lateral ventricle, I forgot to mention. We do not know what the end-results will be in any of these cases. Undoubtedly there are many children in insane asylums and homes for feeble-minded children, whom an operation in time would have benefited; it would have kept them out of these institutions. There are many individuals in penal institutions who are there because they have had head injuries followed by abscess, etc. A year or two ago I operated on a man who had served two periods in an asylum and I found an abscess the size of a hen's egg. These extradural abscesses are not uncommon. To diagnose lesions in children the only thing to do is to watch these children, sit by the bedside and watch them for hours; if necessary, spend nearly all of your time with them, perhaps for two or three days, until you have made your diagnosis and decided just what must be done. If you are in a hurry, let them alone.

EXPERIENCE WITH SALVARSAN

EHRlich-HATA'S 606 IN THE NEW YORK SKIN AND
CANCER HOSPITALHOWARD FOX, M.D., AND WILLIAM B. TRIMBLE, M.D.
NEW YORK

Through the kindness of Dr. Flexner of the Rockefeller Institute we received in October twenty tubes of Ehrlich's 606 for experimental use in the Skin and Cancer Hospital. The twenty tubes have been used for the treatment of eighteen patients, a second injection having been given in two of the cases in which relapses occurred. All of the patients remained in bed at least three days after treatment and then continued under observation at the hospital or returned to the dispensary at weekly intervals. All except two of the patients have remained under observation up to the present time.

With the exception of a patient with nodular leprosy to whom the new remedy was experimentally given, the patients selected for treatment were those who presented active syphilitic manifestations and (except in Case 8) a positive Wassermann reaction. The choice of patients was limited to those in whom ophthalmoscopic examination of the fundus and examination of the heart and urine showed no deviation from the normal condition.

The injections¹ of salvarsan were given either in suspension or in solution in doses varying from 40 to 60 centigrams. In the first nine cases the drug was given in a neutral suspension in the subcutaneous tissue of the interscapular region. In one case (10) the injection was made in the quadratus lumborum muscle. In the last ten cases, soluble injections were given in the gluteal muscles, according to the method of Lesser.

Examinations for *Spirochæta pallida* were made with the dark-field illuminator in five of the cases and showed a rapid disappearance of the organisms after injection. In no case could any spirochetes be found at the end of seventy-two hours after treatment, as seen in Table 1.

The Wassermann reaction was performed in every case before the injection was given and was afterward repeated at weekly or somewhat less frequent intervals. It was found to be positive in all except one case (9) in which mercury had been previously administered for several months. The original Wassermann method was performed by us, using two antigens for every case, one of the antigens being an alcoholic extract of syphilitic liver that had been found reliable in testing several hundred cases. Active serum from every case was also sent to Dr. Noguchi of the Rockefeller Institute, who

employed his own antihuman system in determining the reaction. The final results obtained by the two methods were approximately the same with the exception of Case 3, in which the Noguchi method showed a negative result on the fiftieth day, while the Wassermann method continued to show a positive reaction at the time of writing. In five of the cases (1, 6, 7, 11, 12) the reaction has become entirely negative at the end of eighty-five, forty-six, seventy, thirty-three and fifty-four days respectively. In one case it became weakly positive with the Wassermann method (negative with Noguchi) at the end of a month and again changed to a strongly positive reaction coincident with a bad relapse of the clinical manifestations.

In observing the general action of salvarsan we were impressed by the remarkable tonic effect of the drug in a number of our patients. From three to five days after treatment a decided improvement in appetite, color and general appearance was noted, especially in Cases 1, 2, 7. In Case 13, however, in which the result of the injection was most favorable, the general condition of the patient seemed decidedly worse for about two weeks after treatment.

In all of the cases a rise of temperature occurred during the first few days after the injection. As a rule, it appeared at the end of twenty-four hours and continued for two or three days with morning remissions. The

TABLE 1.—RESULT OF EXAMINATIONS FOR SPIROCHÆTA
PALLIDA

Case No.	Lesions Examined	Spirochetes Present Before Treatment	End 24 Hours	Hours 48	72 Hours
1	Papules..	Large numbers.	Few.....	None.....	.....
2	Ulcers...	Few.....	Few.....	None.....	.....
5	Chancres..	Large numbers.	Moderate numbers.	Few.....	None.....
8	Papules..	Moderate numbers.	Few.....	None.....	.....
13	Mucous patches	Enormous numbers.	Moderate numbers.	None.....	.....

highest temperature recorded was 102.6 F.; while in the majority of cases it did not exceed 101. In one case the temperature curve was of an intermittent character. In no case was it accompanied by chills. In the case of leprosy the temperature rose to normal, having been subnormal for several weeks previous to the injection.

While the general febrile symptoms were slight and the cause of little or no disturbance to the patient, the same cannot be said of the local effects of treatment. In almost every case there was considerable pain for the first twenty-four hours following the injections, and as a rule the use of morphin became necessary. In a few cases it was very intense and lasted for about three days. The insoluble injections in the subcutaneous tissue appeared to be more painful than those given in solution in the gluteal muscles. In spite of the unavoidable pain, two of the patients cheerfully submitted to a second injection when relapses occurred.

The induration following the insoluble injections varied considerably in the different cases. It was generally well marked for the first week. In no case has it absolutely disappeared at the time of writing. In three cases (3, 5, 6) it was very severe, accompanied by redness and was the cause of considerable discomfort for about two weeks. No abscesses occurred, although in one case (6) there was a slight necrosis of tissue, followed by a serosanguinolent discharge for three weeks. The induration resulting from the soluble injections in

1. In four of the cases (1, 3, 7, 9) the insoluble injections were given according to the method of Wechselmann. This consisted in grinding up the salvarsan in a mortar with 2 c.c. of a 10 per cent. solution of sodium hydroxid. Glacial acetic acid was then added, drop by drop, until precipitation occurred, after which 2 c.c. of sterile water were added. The mixture was then made neutral to litmus by the further addition of either 2 per cent. acetic acid or of sodium hydroxid, according to necessity. When completely neutral the suspension was centrifuged, the supernatant fluid poured or pipetted off, the residue mixed with 10 c.c. of physiologic salt solution and thoroughly shaken. It was then ready for subcutaneous injection. In six of the cases (2, 4, 5, 6, 8, 10) a neutral suspension was made by simply grinding up the salvarsan in a mortar with a 10 per cent. solution of sodium hydroxid. The latter solution was added in the proportion of 1.33 c.c. for each decigram of salvarsan, the mixture being brought up to 10 c.c. in volume by the addition of physiologic salt solution. The salvarsan was prepared for the soluble injections as follows: The drug was added to 15 c.c. of hot sterile water in a graduated glass cylinder containing a few glass beads, and dissolved at once on shaking. Two c.c. of a normal sodium hydroxid solution were then added, causing a precipitation of the salvarsan, which was redissolved by the further addition, drop by drop, of the sodium hydroxid solution. The mixture was brought up to 20 c.c. in volume by the addition of sterile water and an intramuscular injection of 10 c.c. given in each buttock.

TABLE 2.—RESULTS OF TWENTY INJECTIONS OF SALVARSAN

Case No., Sex, Age and Stage	Lesions	Duration of Lesions	Previous Treatment	Date, Dosage and Method of Injection	Local Effect of Injection	Wassermann Reaction	Result of Treatment
1—F.—47—II	Papular syphilid	5 weeks.	None	10/13/10.— Gm. 0.5 in suspension.	Pain rather severe for 12 hours; induration moderate.	Negative at end of 85 days.	Eruption almost disappeared at end of three months; improvement in general health one week after injection.
2—M.—19—II	Pustulo-erustaceous syphilid of nose, ears and legs.	8 months.	Continuous Hg. treatment by mouth eight months; grew worse under treatment.	10/15/10.— Gm. 0.4 in suspension.	Pain moderate, lasting 12 hours; induration slight.	Weakly positive end of month; then became strongly positive.	Marked improvement for three weeks, when relapse occurred. (See text.)
3—F.—32—III	Tuberculo-ulcerative syphilid of face.	2 years.	Hg. at irregular intervals by mouth and injection for two years; disease not controlled.	10/22/10.— Gm. 0.5 in suspension.	Pain severe; induration, redness and tenderness marked; slightly red end 2½ months.	Positive at end of 87 days.	Improvement began on second day; nasal discharge stopped at end of one week; crusted and ulcerated lesions healed in ten weeks.
4—F.—20—II	Chancre of lip; macular syphilid; mucous patches.	Eruption 6 days.	None	10/22/10.— Gm. 0.45 in suspension.	Pain and induration moderate and well borne.	Positive at end of 73 days; reaction weaker than at beginning.	Chancre healed in 3 weeks; eruption disappeared at end of 4 weeks; mucous patches healed in 4 days; severe relapse 6½ weeks from time of injection, consisting of mucous patches of mouth and vulva and macular and military papular syphilid.
5—F.—27—III	Gumma of clavicle; tubercular syphilid of lip.	Gumma 4 months; lip lesion 12 years.	Hg. at irregular intervals for many years; improved but never cured.	10/22/10.— Gm. 0.45 in suspension.	Pain moderate; induration and redness very marked at first; persisted 2 months.	Positive at end of 80 days.	Gumma nearly cured end one month (see text); lip lesion disappeared in ten days.
6—M.—32—II	Papulo-squamous syphilid; extensive mucous patches.	3 months.	Hg. by mouth for one month.	10/28/10.— Gm. 0.5 in suspension.	Pain and induration marked & persistent; slight tissue necrosis.	Negative at end of 46 days.	Disappearance of mucous patches in ten days; eruption disappeared end of 2½ months.
7—F.—20—II	Papular syphilid	3 weeks.	None	10/28/10.— Gm. 0.4 in suspension.	Pain and induration slight.	Negative at end of 70 days.	Marked improvement in general health at end of five days; gained 10 lbs. in weight since injection; eruption practically disappeared.
8—M.—37—II	Pustular syphilid	4 months.	Hg. by mouth for four months without effect on eruption.	10/29/10.— Gm. 0.5 in suspension.	Pain severe; induration slight.	Negative before and during entire treatment.	Moderate improvement at end of one week; patient failed to return to hospital.
9—M.—21—II	Maculo-papular syphilid	5 weeks.	None	10/29/10.— Gm. 0.45 in suspension.	Pain severe first 12 hrs.; induration moderate.	Positive at end of 16 days.	Slight improvement during three weeks, when patient failed to return to hospital.
10—M.—34—III	Tuberculo-ulcerative syphilid of arm, shoulder and abdomen; ulceration of palate	4 months.	Hg. by mouth 2 weeks	11/3/10.— Gm. 0.5 in suspension.	Pain severe second day; induration slight.	Positive at end of 3 weeks.	Lesion healed in three weeks.
11—M.—38—III	Gummatous ulceration of hard and soft palate and ear.	6 months.	Hg. by mouth, injections and injections; irregularly one year; Hg. very badly borne.	11/10/10.— Gm. 0.5 in solution.	Pain severe for 12 hours; induration lasted 3 weeks.	Negative during entire treatment. (See text.)	Astonishing improvement at first; ulceration of palate reduced to half its size at end of one week; marked improvement in general health and appearance; lesions practically healed in 12 days, when relapse occurred. (See text.)
12—M.—24—II	Mucous patches; laryngitis.	10 months.	None	11/10/10.— Gm. 0.45 in solution.	Severe pain; marked induration of buttocks 2 weeks.	Negative end of 54 days.	Mucous patches disappeared three days after injection; hoarseness began to improve on second day, and by fifth day voice was normal.
13—F.—46—III	Tuberculo-erustaceous serpiginous syphilid.	1 year.	None	11/15/10.— Gm. 0.5 in solution.	Severe pain for 2 days; marked induration of buttocks 3 weeks.	Weakly positive at end of 63 days.	Eruption almost disappeared at end of three weeks; entirely well at end of one month; general condition worse for two weeks as result of treatment, anemia, loss of appetite and weight.
14—F.—35—III	Gumma of soft palate and pharynx; gummatous infiltration of access. sinuses; deafness.	3 years.	Hg. and KI by mouth irregularly one year.	12/3/10.— Gm. 0.45 in solution.	Pain and induration moderate.	Positive at end of 46 days.	Gumma nearly healed at end of six weeks.
15—M.—43—III	Tuberculo-ulcerative syphilid of thigh.	7 months.	None	12/5/10.— Gm. 0.45 in solution.	Pain severe 5 days; induration marked and lasted 3 weeks.	Strongly positive at end of 43 days.	Lesions entirely healed at end of 3½ weeks.
16—M.—38—III	See Case 11. Second injection.	.....	.....	12/15/10.— Gm. 0.6 in solution.	Practically no pain or induration.	Continued to be negative.	Improvement of ulceration marked at end of first week; process then remained about stationary and relapsed slightly at end of third week.
17—M.—19—II	See Case 2. Second injection.	.....	.....	12/22/10.— Gm. 0.45 in sol.	Pain and induration slight.	Positive at end of 26 days.	Continued slow improvement for a month.
18—M.—40—...	Nodular leprosy	6 years.	Chaulmoogra oil, strychnin and mercury.	1/5/11.—Gm. 0.4 in solution.	Pain severe; induration severe.	No examination made after treatment.	Absolutely no effect on lesions; since treatment has been confined to bed, his general condition having become markedly worse.
19—F.—23—III	Gummatous ulceration of leg.	6 months.	None	1/12/11.—Gm. 0.6 in solution.	Pain severe; induration moderate.	Positive at end of 1 week.	Marked improvement in lesions at end of a week.
20—F.—22—III	Gumma of nose	9 months.	Practically none	1/12/11.—Gm. 0.6 in solution.	Pain 24 hours; no induration.	Positive at end of 1 week.	Improvement at end of one week.

the buttocks was extremely variable in the different cases. It was greatest, as a rule, on the third day after treatment. In some of the cases it was slight and occasioned very little inconvenience. Two of the patients, however, complained of considerable lameness for about two weeks. While the pain and induration were by no means unbearable they were severe enough to make it very desirable to continue our experiments with other methods of injection, concerning which we hope to report in a later communication.

The result of the twenty injections from a clinical standpoint were in some respects encouraging, in other disappointing. The most brilliant symptomatic result was obtained in Case 13, in which a superficial tuberculo-crustaceous syphilid disappeared at the end of a month. Even in this case it is not impossible that a single injection of calomel or one or two injections of salicylate of mercury might not have accomplished the same results. An excellent result was also obtained in Case 5, in which a mild tubercular syphilid of the lip that had existed for twelve years (according to the patient's statement) disappeared at the end of ten days. A gumma at the sternoclavicular point occurring in the same patient was also healed at the end of a month. In three of the cases (1, 6, 7) presenting early papular syphilids, the results were apparently not so good as those that might have been obtained from mercury. The lesions, however, finally disappeared in each case, and the Wassermann reaction became negative.

In three tuberculo-ulcerative cases (3, 10, 15) and in a case of gumma of the pharynx and palate (14), the results were satisfactory from a clinical standpoint, although the Wassermann reaction has not as yet become negative. The result of treatment in Case 3 was especially gratifying, as it had been very difficult to control the disease with mercury. In three cases in which mucous patches were present (4, 6, 12) there was a most rapid disappearance of the lesions after injection. The result of treatment in the case of leprosy was most unsatisfactory. No change whatever occurred in the lesions and the patient's general condition has become decidedly worse.

Relapses occurred in three cases, in two of which we thought at first that splendid results had been obtained. One of these cases (2) presented a pustulo-crustaceous syphilid of somewhat malignant type that had grown worse under internal administration of mercury. The patient improved rapidly for a month, the Wassermann reaction becoming nearly negative and the ulcerated lesions of the nose, ear, arms and legs healing almost completely. He then suffered a severe relapse, his condition becoming nearly as bad as at the outset. He was given a second injection and the manifestations have again almost disappeared.

A disappointing relapse was also shown by a patient (Case 11) with extensive gummatous ulceration of the hard and soft palate. The improvement was most striking at first, the ulcerated area being reduced to half its original size at the end of a week. A relapse then occurred and the patient was given a second injection which was again followed by a relapse. As it is almost impossible to administer mercury to this patient it is our intention to give him one or two more injections of salvarsan in the near future.

It would be unwarranted to draw any general conclusions from our limited material. It must be admitted, however, that the effect of the new remedy, in causing lesions to disappear rapidly, has been striking in several of our cases. In other cases, however, the

lesions have disappeared rather slowly. In comparison with what might have been expected from a vigorous mercurial treatment, the results do not appear to be especially brilliant. In several of the cases the disease had not been controlled by mercury and responded very favorably to salvarsan. Indeed in one case (11) the patient had found it practically impossible to take mercury in spite of persistent attempts to administer the drug by mouth, inunctions and injections.

In the limited number of cases in which we have used salvarsan it has seemed to us that the lesions of the mucous membranes have yielded more quickly than those of the cutaneous surface. As has been said, the brilliant results in some cases have been only temporary and the relapses that have occurred have followed the improvement with discouraging rapidity. Our results are favorable enough to make us willing to continue our experiments with salvarsan in a larger and more varied number of cases than the ones that are here reported.

In conclusion we wish to thank Dr. George Henry Fox for much of the material and for the privilege of treating the cases at the Skin and Cancer Hospital; to Dr. Udo J. Wile for the spirochete examinations, and to Dr. Robert G. Reese for the ophthalmoscopic examinations.

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GENERAL CHEMICAL ASPECT OF INTERNAL SECRETION

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Anyone who has watched the recent development of knowledge concerning the internal secretions cannot help being impressed with the significance of the results in their bearing on the chemical processes of the body. Not only have we learned that certain of the ductless glands, which hitherto were considered of little importance for the welfare of the organism, manufacture specific internal secretions all-powerful for the maintenance of health, but it has also been shown that these secretions owe their power to definite chemical substances, produced through the metabolic activity of the gland cells. The ductless glands become, then, miniature laboratories charged with the function of elaborating specific chemical products which are needed for maintaining the normal rhythm of nutrition. Let these glands cease their functional activity and the lack of their specific products entails disease and possible death. On the other hand, increased activity may be attended with equally disturbing results.

THE ADRENALS

A study of the product formed in the adrenals, for example, shows us that we have here a powerful substance, which in undue amount acts as a violent poison (0.2 mg. per kilo of body weight being a lethal dose for rabbits when given by intravenous injection), and in smaller amount exerts a striking influence on blood-pressure. This blood-pressure-raising constituent of the adrenals is a well-defined chemical substance, crystalline, basic in character and readily prone to undergo oxidation. Chemically it is a ketone-like body, having the structure of methylaminoacetopyrocatechol, and it is now made synthetically. To-day we fully recognize that the unique action of the internal secretion from this particular gland is due mainly, if not solely, to epinephrin, which fulfils a specific function both in

health and in disease. Further, the marked vasoconstrictor action of this substance has led to its widespread use as a therapeutic agent, so that we now have the natural base and the synthetic product available for use in the treatment of diseased conditions. We understand, further, that the marked and sudden rise in blood-pressure that attends the introduction of epinephrin¹ is due to two causes, viz., an accelerated and more energetic heart's action, together with a contraction of the smaller arteries and arterioles, especially those of the skin and in the region of the splanchnics. Section of the nerves is without visible effect on the blood volume, thereby indicating that epinephrin acts directly on the periphery, on the blood-vessels themselves.

Especially significant are the observations recorded bearing on a comparison of the natural base and the synthetic product, sometimes termed "suprarenin." The epinephrin prepared from the gland substance is optically active with a specific rotation of -51° . In other words, it is a levo-rotary body. The synthetic base, on the other hand, is optically inactive. Moreover, it has been demonstrated that the latter body has a far less powerful physiologic action than the natural base. Cushny, from his experiments, has concluded that natural epinephrin acts twice as strongly on blood-pressure as the synthetic or racemic epinephrin, and presumably also on the other organs affected by this substance. From this, the assumption is fair that dextro-epinephrin is without action as a vaso-constrictor. Finally, Flächer² has succeeded in splitting the optically inactive, synthetic epinephrin into its two optically active halves, and finds that the synthetic dextro-epinephrin and the natural dextro-epinephrin are physiologically identical.

Broadly speaking, the important point to be emphasized here is that the animal body in its special laboratory, the cell, follows a well-defined line of action producing compounds that are optically active; compounds in which the asymmetric carbon atom is conspicuous. The illustration of epinephrin is in harmony with many of the metabolic processes of the body in which an asymmetric carbon atom is a determining factor in the physiologic character of the substance. Nature makes use of optically active products, while the corresponding products turned out by the hand of man, though identical structurally, exhibit differences in stereoisomerism.

The internal secretion from the adrenals may be taken as illustrating a form of chemical control, by means of which many of the processes of the body are capable of being modified. Variations in blood-volume and blood-pressure are conspicuous causes of modification in glandular activity, and we may well conjecture that variations in the amount of epinephrin produced and thrown into the blood-current may be responsible for many quantitative changes in function. Aside from this, we see in the marked glycosuria produced by epinephrin an illustration of specific action, the significance of which cannot be overlooked. Subcutaneous administration of epinephrin is followed by the appearance of dextrose in the urine, coupled with a true condition of hyperglycemia. As Elliott³ has pointed out, the striking characteristic of epinephrin is its tendency to stimulate plain muscle and

gland cells that are or have been in functional union with sympathetic nerve fibers. In harmony with this fact, Underhill and Closson⁴ suggest that the glycosuria produced by epinephrin is due to a stimulation of the sympathetic nerves leading to the liver or to other store-houses of carbohydrate, causing these organs to throw out their stored-up material in the form of dextrose. At the same time there may be a diminished storage of dextrose owing to stimulation of the hepatic cells by the epinephrin, thus causing these cells to reject the dextrose brought to them. However this may be, small quantities of epinephrin injected lead to a marked glycosuria, and apparently by an action on the nervous system through the intermediation of the sympathetic.

We thus have suggested the picture of a miniature gland endowed with the function of producing a powerful chemical substance which may serve to control and modify many of the processes of the body. Its importance to the organism is fully apparent from the results that follow complete extirpation of the adrenals, while its physiologic strength is equally manifest from the effects of subcutaneous injections of epinephrin.

THYROIDS AND PARATHYROIDS

Equally striking are the data that can be presented in connection with the thyroids and parathyroids. Ignoring all matters of detail, there stands out prominently one fundamental fact that in these tissues there is produced a peculiar chemical complex—characterized by containing iodine—known as iodothyrim. The chemical nature of this substance is not as fully understood as that of epinephrin, but it is apparently a cleavage product of a still larger protein complex. However this may be, the active principle is endowed with marked physiologic power. Extirpation of the thyroid tissues is followed by profound changes leading to myxedema, tetany, retardation of skeletal growth, etc., conditions which can be prevented or obviated in greater or less degree by administration of thyroidal tissue. Similarly, diseases which are associated with functional disturbance of the thyroids can be made to show great improvement by feeding sheep's thyroids or by administering iodothyrim. There are many interesting facts that might be cited regarding the relative significance of the thyroids and parathyroids, but the point to be emphasized here is that the thyroidal tissues manufacture one or more specific chemical substances which are essential for normal growth and development; substances which either directly or indirectly control certain nutritive processes on which good health and life itself depends.

Physiologic experiment shows us that iodothyrim fed to healthy animals tends to accelerate in small degree nitrogen metabolism. It likewise causes an increased excretion of phosphorus as phosphoric acid through the urine and also appears to stimulate the combustion of fatty material. There is thus apparent a certain ground for the assumption that normally the thyroid glands are essential factors in the regulation of body metabolism. Further, experiments seem to show that if all thyroidal tissue is removed from a healthy animal there is a diminished utilization of dextrose by the body, dextrose appearing in the urine if this sugar is injected in any quantity, the inference being that the thyroids normally influence the utilization of sugar in the body.

Again, in the pituitary there is accumulating evidence that the pars intermedia of this body produces, in the

1. In the original text of this article the term "adrenalin" was used, but in a general sense, and not with reference to any particular firm's make.

2. Flächer: *Ztschr. f. physiol. Chem.*, lviii, 189.

3. Elliott: *Jour. Physiol.*, 1905, xxxii, 401.

4. Underhill and Closson: *Am. Jour. Physiol.*, 1906, xvii, 42.

words of Professor Schäfer,⁵ "a 'colloid' material which contains active principles or hormones acting on the heart, blood-vessels and kidneys. Probably there are several such hormones acting on the blood-vessels and kidneys independently, and also acting antagonistically; so that according to circumstances either a rise or a fall of blood-pressure, an increased or a diminished secretion of urine may be produced, and the effects on the kidneys may be independent of those on the blood-vessels."

CORRELATION OF INTERNAL SECRETIONS

These brief statements and suggestions may be taken as emphasizing the specific action of definite chemical substances which constitute the basis of certain internal secretions. It is becoming apparent, further, that these ductless glands in their physiologic activity also exercise a regulating action on each other; that they are in some manner correlated. Clinicians have frequently called attention to the fact that a disturbance or impairment of function of one ductless gland quite commonly leads to a disturbance in the functional activity of some other ductless gland. Evidence at present available, for example, tends to indicate that the pancreas and the thyroid mutually retard the action of each other. The same is believed to be true of the pancreas and the chromaffin system, while the thyroid and the chromaffin system mutually increase the action of one another.⁶ As to the explanation of these phenomena we can at present only conjecture, but there is a strong suggestion that chemical reactions are involved here, the full meaning of which can hardly be hoped for until we know more concerning the chemical composition of the secretion concerned.

My object, however, in referring to these unsettled questions is merely to emphasize the many ways in which these internal secretions probably act in the body, and the consequent importance of the chemical regulation they exercise in controlling metabolic processes. But it is to be remembered that in touching on the ductless glands we are only at the threshold of the subject. The pioneer work of Baumann in 1895 with the thyroid gland, accompanied by the discovery of iodothylin, led to a fuller realization of the significance of internal secretion in general. Physiologists soon came to appreciate the far-reaching influence of the continual exchange of matter between all the living cells of the organism and the surrounding blood, lymph and tissue juices. In other words, there has come about a fuller realization of the fact that, broadly speaking, internal secretions may be considered as common to every group of specialized cells and that their chemical nature and physiologic action merit consideration. The ductless glands serve to illustrate special forms of internal secretion, the active substances of which are of the utmost importance to the organism. To-day, however, we recognize that the cells of every organ and tissue of the body are continually forming intermediate products and end-products, which are absorbed by blood and lymph, and which may serve as stimulants to other tissue cells, or in some manner exercise an influence on the metabolic processes of other organs or tissues. These forms of internal secretion are, many of them at least, of great importance, and merit as much consideration as the secretions that originate in the ductless glands.

Here, to my mind, lies the fundamental point to be emphasized in considering the chemical aspects of inter-

nal secretion. Chemical correlation, chemical control, stand out with startling distinctness, and this in a general way is equally true of every active gland and tissue of the body. It is as true of a gland like the pancreas, which has for one of its functions the manufacture of a specific digestive fluid, as it is of the thyroid, which apparently produces only an internal secretion. Even the excretory organs, like the kidneys, which seemingly are concerned solely in draining from the blood certain so-called waste-products, are plainly susceptible to the physiologic action of some of the substances they elaborate; the epithelial cells of the glomeruli and tubuli, for example, being noticeably sensitive to the action of purins, uric acid, etc.

Look also at the process of respiration, in which the waste product carbon dioxide, resulting from the metabolism of every tissue cell, acts as a stimulant to the mechanism in the central nervous system, by which regulation of the respiratory movements is accomplished. Equally suggestive, though more specific in character, are the other "hormones" so thoroughly studied by Bayliss and Starling, emphasizing as they do the important part played by many internal secretions emanating from particular groups of cells in starting or controlling processes taking place in other glands or tissues. In the secretion of the pancreatic juice, the hypothetic nerve-control so long sought for gives place to a chemical control through the prosecretin manufactured in the epithelial cells of the upper part of the intestine. This substance, under the influence of the hydrochloric acid of the gastric juice, undergoes conversion into secretin, and then brought to the pancreas by the blood sets up a voluminous secretion of pancreatic juice. Again, in the intestine we find a specific substance elaborated, enterokinase, which, reacting with the trypsinogen of the pancreatic secretion, converts it into an active proteolytic enzyme. In the mammary gland we have another equally striking suggestion of chemical stimulation resulting from a substance or substances produced in a remote structure, by which the process of lactation is made possible. As the experiments of Claydon and Starling⁷ indicate, the growth of the mammary glands during pregnancy is apparently due to the action of a specific chemical stimulus which has its origin in the fertilized ovum. The amount of this substance increases with the growth of the fetus and is therefore largest during the latter half of pregnancy. Lactation is supposed to be due to the removal of this particular substance, or hormone, which is therefore to be regarded as exerting an inhibitory influence on the mammary gland cells, hindering their secretory activity and furthering their growth. To quote more fully from Claydon and Starling:

During sexual life, therefore, the ovaries are continually producing a substance which exerts an influence on both glands and uterus. With the occurrence of conception there is at once a great growth of what we may call germinal material. With the growth of the fertilized ovum the amount of hormone produced in the ovum must also increase in proportion. In the early stages of pregnancy the chief source of this hormone may perhaps be located in the chorionic villi, but with the growth of the body of the fetus this latter must take a preponderating share in the preparation of the hormone. We have no reason to suppose that fetal elements of the placenta entirely lose this function of the germinal cells, but the negative results of injection of placenta in our experiments show that it is impossible to ascribe to the placenta, as is done by Halban, a preponderating part in the preparation of this hormone.

⁵ Schäfer: Croonian Lecture, 1909. Proc. Roy. Soc. B., xxxi, 442.

⁶ King: Jour. Exper. Med., xi, 666.

⁷ Claydon and Starling: Proc. Roy. Soc., B., lxxvii, 505.

CONCLUSION

Facts such as these, like the data gradually collecting regarding the internal secretions from the ductless glands, emphasize the part which specific chemical products play in the regulation of body metabolism; they serve to call attention to the importance and the general application of the methods of chemical control which the organism makes use of in regulating its affairs. Further, products of tissue metabolism in general, whether classified as intermediate or as end-products, in their passage through the circulation have abundant opportunity to exercise an influence on the activity of other tissues or organs. They are true internal secretions, as much so as the more specific products which are apparently formed for some special purpose, and as such they illustrate the truth of the general hypothesis that the products of all tissue cells are efficacious in greater or less degree as forms of chemical control in the processes of the body.

THE INTERNAL SECRETION OF THE
PANCREAS

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Ever since the early experiments which culminated in those of von Mering and Minkowski, showing that removal of the pancreas causes the most profound and extraordinary disturbances in the general metabolism, and more especially in the metabolism of carbohydrates, the search for an explanation has been most active. Notwithstanding the fact that the literature on this subject is enormous and that many side-lights have been cast on the problem, it is still impossible for us to say with any certainty just what we have done in extirpating the pancreas to cause all these changes, and the further the matter is studied the more complex seem the possible relations which exist, not only between this organ and the tissues which are especially concerned in the assimilation and metabolism of the foodstuffs of the body, but also the relations which it bears to the nervous system and to other organs or groups of organs which are important to the economy in a somewhat similar way.

The pancreas has a complicated structure and it seems clear that its functions are manifold, for on the one hand by its secretions, which are poured into the intestine, it plays an extremely prominent rôle in the preparation of all classes of food for absorption, while on the other hand there still remain the functions which we can see so obscurely in their relation to general metabolism and which are apparently quite independent of this external or intestinal secretion. The nature of these latter functions must form our subject for discussion to the exclusion of the former.

Nearly everyone in these days of ferments thinks of this influence of the pancreas as being carried out by the aid of some chemical material which is secreted into the blood-stream, and only Pflüger has maintained that there is no such internal secretion, but that the results of extirpation are due to injuries to the nervous system at one point or other. The idea of a chemical internal secretion is suggested and supported by the observations on other organs whose influence over metabolism is great, and for some of which an extract can be obtained which will practically take the place of the organ if it be destroyed. Such direct proof can hardly be brought

for the pancreas, but still the evidence which I shall recount is so strong that we can hardly escape from the conclusion that there is an internal secretion even though we may not say exactly how and where it acts.

The simplest case in which we can study the functions of an organ is perhaps that in which these functions are abolished. There are many conditions in which we suspect an insufficiency of the pancreas and many others in which similar symptoms are due to other things, and although these two throw light on the function of the pancreas, it is perhaps best to base our considerations chiefly on the results of extirpation of the gland. This is promptly followed in all animals by the appearance in the circulating blood of an excessive amount of sugar, much of which passes into the urine, causing glycosuria. The organs lose their power to store up glycogen, there is a very great increase in the breaking down of proteins and of fats, the animal becomes emaciated and in some cases, owing probably to the abnormal decomposition of the fat, there appear in the blood and urine various acid substances, beta-oxybutyric and diacetic acids and acetone, which are very poisonous and often cause death in human beings the subject of diabetes by producing the so-called diabetic coma.

All of this is obviated by the presence of the pancreas, and not necessarily the whole pancreas; a portion of it is sufficient to maintain the animal in health, as was shown by Minkowski, who transplanted a part, with its blood-vessels, into the abdominal wall and removed the rest.

This being so, the question at once arises as to what part of the pancreas is responsible for this function and what is the mechanism of its action. I shall pass over here with but brief mention the experiments of Pflüger in which he contends that the separation of the pancreas from the duodenum and the tearing of nerves is responsible for glycosuria, for, as we shall see, much greater injury can be done with no such effect. The whole subject of the relation of the pancreas from an anatomic point of view, and especially of the relation of the islands of Langerhans to glycosuria and diabetes, has been so well reviewed by Sauerbeck that there is but little to add to what he brings forward. Briefly, the dispute hangs on whether the islands of Langerhans alone possess this all-important function or whether the pancreatic glandular substance in general is concerned; and it is well known that basing their opinions on pathologic cases, Opie, Ssobolew and many others hold to the view that the prevention of glycosuria, etc., is a specific function of the islands, while Hansemann, Herxheimer and others find the evidence for this inclusive and maintain that diabetes is due in each case to an inadequate functioning of the whole pancreas. The theory as to the special relation of the islands of Langerhans to diabetes was suggested to Opie by the discovery of a case of diabetes mellitus in which while the pancreas in general was practically normal the great majority of the islands of Langerhans had undergone a hyaline metamorphosis and were thus thrown out of function. On the other hand, it is possible to ligate the pancreatic ducts and thus to cause the atrophy of all the acini of the gland without affecting the islands of Langerhans, which have no connection with the ducts, and in this condition no glycosuria results. Even clearer are the results of an experiment which I described in a recent publication in which a portion of the pancreas was ligated off from the rest and allowed to undergo atrophy for a year. At the end of that time its place in the

mesentery, marked out by a black ligature, showed only a thin film of opalescent tissue composed practically entirely of islands of Langerhans. At this time the remainder of the pancreas was extirpated and after a transient glycosuria the dog recovered completely and was able to take by mouth nearly 40 gm. of glucose at one dose without showing any glycosuria. The subsequent extirpation of the film of tissue which had been left behind caused the development of the most intense and persistent glycosuria. The inference seems justified that the islands of Langerhans alone are able to maintain carbohydrate metabolism.

Interesting results which bear on the nature of the pancreatic function are brought forward by Forschbach, who produced the condition of parabiosis in two animals. The effect of the extirpation of the pancreas in one was annulled by its connection with the other. Since this was a vascular connection only, nervous influences could be ruled out and the symptoms must have been prevented by some substance passing from one animal to the other. In spite of this apparently conclusive evidence of the existence of some internal secretion of the pancreas we have not been able to demonstrate it satisfactorily by positive methods as in the case of the thyroid, although Zuelzer claims to be able with a deproteinized extract of the pancreas to annul the glycosuria which follows pancreatectomy. Indeed, we are not even informed as to where such a secretion must exert its function.

It has been shown that in most cases after extirpation of the pancreas, the liver and other normal depots are extremely poor in glycogen, and Ivar Bang makes the statement that the function of the internal secretion of the pancreas is to control the storage of sugar in this form—without it there must be an excess of soluble sugar in the blood and consequently glycosuria. A moment's reflection will make clear, however, that this could not in itself explain the phenomena of pancreatic diabetes, for when the pancreas is extirpated in hungering and glycogen-free animals there suddenly appears, without the intake of any carbohydrates, a great excess of circulatory sugar and glycosuria. The disturbance is far deeper than the mere inability to polymerize and store sugar. There is actually a new formation of sugar from proteins and from fats; even the tissues are consumed, and that portion of their molecules which will form sugar is set free as such in the circulating blood. Nor can we find a satisfactory explanation in disturbances in the activity of diastatic ferments which set free the sugar from its polymerized form. It seems quite possible that the pancreas may control this in some way, allowing only so much as is necessary to be turned into the circulation, so that when its influence is lost, mobilization of the sugar is too rapid. In this sense it is actually found (Zuelzer, Falta and others) that the addition of pancreatic extract to adrenalin will prevent the production of glycosuria by that substance, and that the stimulation of the pancreas by pilocarpin will in some cases also prevent the production of adrenalin¹ glycosuria. Still it is obvious as before that this cannot be the reason for the changes in pancreas diabetes, for as we have said, they appear in hungering animals in which there is no glycogen to saccharify so that the injury must be still deeper.

When sugar is carried to the tissues by the blood and set free in the tissues it is oxidized to furnish warmth

and energy, but it appears that this oxidation is not easy unless the sugar be first split into somewhat simpler substances, a process which may be spoken of as glycolysis and conceived of as being carried out by a glycolytic ferment. The most earnest efforts have been made to determine the existence of such ferments in the body and if possible to ascertain the relation they bear to the pancreas. The results have been roughly as follows:

Lepine and others have declared the existence of glycolytic ferments in all tissues—not merely in the pancreatic secretion—and have regarded them as the universal agents promoting the oxidation of sugars. Stoklasa and his pupils find in all organs a ferment which decomposes carbohydrates with the formation of alcohol and carbon dioxide, and Feinschmidt, too, speaks of glycolysis as an independent process not even necessarily bound to the living cell. On the other hand attention has been called more recently to the possible part played by the pancreas in this process. Schade thinks of the whole process of decomposition of sugar as probably a catalytic process for which there are many analogies, and suggests that the internal secretion of the pancreas may be a catalyzer. Rahel Hirsch has found that there is a "proferment" in the pancreas which aids glycolysis in the liver; and about the same time Cohnheim announced in several papers that he had demonstrated that an extract of the pancreas was actually necessary to glycolysis in the muscles. By studying a mixture of glucose and muscle juice he showed that very little glycolysis (evidenced by the disappearance of the sugar) occurred, but that if an extract of pancreas were added the sugar disappeared very rapidly. This extract, he states, can be boiled and is soluble in alcohol; it is therefore not a ferment, but behaves as an activator to the enzymes normally present in the muscle. When added in excess it inhibits the action of the enzymes, possibly by deviating it from its relations with the sugar. This forms a very tempting explanation of the hyperglycemia in pancreatic diabetes, and it is just at this point that we feel it most likely that the internal secretion of the pancreas should act. Arnheim, Rosenbaum, Hall, De Witt and others have supported him, but Claus and Embden have repeated his experiments as exactly as they could and have found no effect from the pancreatic extract on the disappearance of sugar. With all possible modifications they have repeated their work, but the result is the same and they offer no explanation unless it be the obvious possibility that bacteria may have played a part, an objection which may be made to all these complicated experiments in which nutritive solutions must be kept for hours in a thermostat. Cohnheim replies that their results depend on neglect of the inhibition by excess produced by the activator or perhaps on the use of salt solution in their extracts, but admits that unless special care be taken to get the muscle free from blood its juices alone are active to a certain degree. All these experiments were performed with admixture of antiseptics, and Stoklasa rather hotly objects that this removes them far from physiologic conditions. It seems true that they would be crude and not entirely satisfactory even if the results were in unison, but with such contradictions among competent workers it is difficult to estimate precisely the standing of the pancreatic activator. In these experiments, further, no attention is paid to the end-results of the reaction—the first splitting of the sugar which renders it incapable of reducing copper is as far as they go.

If, however, we could feel sure that without the pancreatic secretion no glycolysis or oxidation of sugar

1. In this article the term "adrenalin" is used in quoting the work of European and American authors without reference to any particular firm's make.

could occur, would that explain all the features of pancreatic diabetes? It is known that the general oxidation is maintained at about the normal level and it seems evident that the lack of carbohydrate metabolism merely requires the intensification of protein and fat metabolism with the results mentioned above.

From all this it appears that the direct demonstration of the nature and mechanism of the influence of the pancreas on metabolism is in no very satisfactory state. Its extirpation produces profound disturbances which are far more intense than can be produced in any other way, while we are as yet practically unable to annul these effects with any extract from the gland.

That it does not act quite independently of the other organs of internal secretion is evident, however, from a whole series of observations on the effects of hypersecretion or hyposecretion of these organs on the supposed field of activity of the pancreas. In nearly every instance the occurrence or non-occurrence of glycosuria has been adopted as the test and a complicated network of effects has been woven about this test. In itself glycosuria can be produced by a great variety of measures, some of which act by way of the nervous system; others, such as cantharidin, the salts of many metals and phloridzin, seem so to affect the kidneys that they become permeable for sugar and allow of a glycosuria even when there is little or no hyperglycemia. This latter group we may set aside at once, but the others seem to bear a closer relation to the activities of the pancreas itself, or, at any rate, to the structures which it influences. Thus the diabetic puncture of Claude Bernard which consists in puncturing a certain point in the floor of the fourth ventricle of the brain, the stimulation of sensory nerves which acts reflexly, the direct stimulation of the splanchnic sympathetics or their chemical stimulation by asphyxia or asphyxiating agents such as ether, morphin, etc., or by drugs such as caffein, diuretin, etc., all produce glycosuria with hyperglycemia. Some of them act on the more sensitive central nervous elements, while others, such as caffein and adrenalin can stimulate the peripheral terminations of the nerves. In accordance with this the effects of some are annulled by cutting the splanchnics, while others are not.

Nishi, in studying diuretin glycosuria, cut the sympathetic nerves one after another and found that the glycosuria depended on the transmission of impulses, not to the liver, but to the adrenals; hence he thinks that the action of the sympathetics is through the mechanism of epinephrin secretion. Extirpation of the adrenals removes their influence in the way of producing glycosuria, and as Zuelzer, Dohrn and Marx, Frouin and Mayer have shown, this operation annuls the glycosuric effect even of extirpation of the pancreas. It is evident then that the adrenals are extremely important as a link in the production of glycosuria by any of these insults to the nervous system. It is difficult to conceive of the exact mechanism of its action, but we have the following evidence. Injections of adrenalin produce hyperglycemia and glycosuria and greatly intensify the glycosuria already existing in depancreatized dogs. Efforts have been made to explain this as a direct action on the pancreas (Herter, Edmunds and others), and Edmunds regards it as not specific but merely a vasoconstrictor action which incapacitates the pancreas by rendering it aremic; but this position seems to be rendered untenable by the observations of Eppinger, Falta and Rudinger and others that in the absence of the pancreas the glycosuria is intensified by adrenalin. On the other hand Zuelzer, Embden and others have found that when it is

added to the blood used in perfusing an excised liver it causes the liver to liberate sugar into the hepatic vein in far greater amount than when normal blood is used. No observations seem to have been made on the isolated action of the adrenal on the muscles with regard to the liberation of sugar. Taking all these things into account it seems that the weight of evidence is in favor of the idea that the adrenal secretion is the instrument of the nervous effects on the sugar depots of the body; that it by itself can in some way stir up the tissues to set free sugar into the circulation or mobilize the carbohydrate. The exact nature of this process, which seems to be a chemical one, is not clear to us. The experiments which are made by injecting adrenalin are very violent and crude and the dose must be enormous as compared with the amount of adrenal secretion normally poured into the veins. Ritzman has found that if one use a sufficiently dilute solution (1 to 2,000,000) it can be allowed to flow into the vein at the rate of 2 c.c. per minute and never produce glycosuria. If a more concentrated solution be used or this solution run in faster glycosuria does result. Evidently the pancreas is able to overcome and oxidize any excess of sugar set free by so small an amount, but is overtaxed by the results of the larger dose, and this gives us a hint as to the extraordinarily delicate balance maintained by the organs with regard to the circulating sugar. If, now, as Zuelzer has shown, we introduce the lymph from the thoracic duct, which may be supposed to contain much of the pancreatic secretion, with the adrenalin the balance is restored and no glycosuria results. One may perhaps regard the whole picture as being made up, not of the antagonism of two organs, but rather of the exercise of two separate functions—metabolism of sugar and glycolysis—the balance between which it is not easy to maintain in such rough experiments, so that when sugar mobilization predominates, glycosuria ensues.

Another phase of the question is brought to light when we consider the relation of the thyroid to these functions. The introduction of an excess of the thyroid secretion often leads to glycosuria. This is the explanation generally given of the glycosuria in Graves' disease. On the contrary, the extirpation of the thyroid (preserving the parathyroid intact) has quite the opposite effect. Then it is difficult to produce alimentary glycosuria (McCurdy, Falta, and others); the injection of adrenalin no longer produces glycosuria in the strength of solution formerly used (R. Hirsch, Falta, and others); and the glycosuria following the administration of ether is no longer obtainable (Grey and de Sautelle). When tetany is produced by simultaneous removal of the parathyroids the results are quite different, and the glycosuria is even accentuated (Falta). Even the glycosuria following pancreatectomy is diminished by extirpation of the thyroid.

In all these experiments, too, the criterion by which the results have been judged is the occurrence of glycosuria, but it seems that a deeper insight into the nature of the processes might have been gained if they had been considered with regard rather to the steps which precede glycosuria.

Thus King, who carried out his work in my division of the Hunterian Laboratory, found that the addition of thyroid juice to the Cohnheim mixture of pancreatic and muscle juice with sugar, markedly inhibited the glycolysis. This seems to give a simple explanation of the significance of the thyroid in this connection, and we have the balance of the adrenal function of mobilizing sugar and the pancreatic function of glycolysis

affected by a chemical substance. It is as though, as Schade suggests, the glycolytic ferment were a sort of catalyzer which might be thought of as affected by the thyroid secretion as catalase may be affected by cyanids. This seems to me much simpler than the hypothesis that the activity of the pancreas itself is in some way inhibited by the activity of the thyroid.

We know so little about the action of the hypophysis that it is difficult to discuss it here; but it may be recalled that glycosuria sometimes occurs in disease of the hypophysis, and Borchardt has been able to produce it by injections of hypophyseal extract.

Eppinger, Falta, and Rudinger have made a great many of these experiments, and have added much to the knowledge of the interrelation of the organs of internal secretion. These interrelations they attempt to express in the form of a scheme in which the thyroid, pancreas, and chromaffin system are shown in their relation to one another. In this triangle the thyroid and pancreas are represented as mutually inhibiting one another's activities; so, too, the pancreas and chromaffin system; while the thyroid and chromaffin system promote the activities of one another. On this basis they can explain, without too much forcing, all or nearly all of the phenomena. It must be said, however, that this seems to be merely stating in rather vague phraseology the results, of which we know so little, of the mechanism, and there can be no doubt, in spite of the possible value of this scheme in suggesting further experiments, that a satisfactory explanation can rest only on definite chemical studies.

To me it seems more probable that the chromaffin system is concerned, not with the activity of the pancreas, but with the mobilization of sugar; that the pancreas is similarly concerned, not with inhibiting the activity of the adrenals, but with causing the glycolysis of the free sugar; while the secretion of the thyroid, if in excess, interferes with this glycolytic action of the pancreatic ferment. How far the other organs of internal secretion are concerned in this usually smoothly working mechanism remains to be discovered.

The literature on any other internal secretion of the pancreas is relatively meager, and most investigators take it for granted that the appearance of fat in the stools in depancreatized animals is merely the effect of the loss of the fat-splitting ferment of the external secretion. The lipemia which sometimes occurs even in human cases of diabetes can not be explained thus, however, and Lombroso has shown that more fat appears in the stools than is taken in with the food, and that it has different characters and a higher melting point than that fed. It must be reexcreted into the intestine. The ligation of the pancreatic duct seems not to produce any such extreme disturbance in the fat metabolism, and on that account the suggestion is made that there may be an internal secretion governing this. Further investigations of this point are necessary.

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PRESENT KNOWLEDGE OF THYROID FUNCTION

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At the present time we know that the thyroid gland fills a very important function in the animal body. We do not know the precise details as to how this function is fulfilled, and because of our lack of knowledge on this point we may more readily turn the discussion to the consideration of theories than is the case in regard to the other tissues which have been more thoroughly studied and concerning which we have more definite information.

One of these theories is deserving of recognition merely for the purpose of rejection. I refer to the ideas sponsored by Blum, Notkin and others—the so-called neutralization theory. These investigators have stated that the function of the thyroid is to detoxicate certain metabolic products which arise in the animal body, and this action they conceive to take place in the thyroid itself and to be accomplished by the union of iodine with the metabolic product. By such a means the toxic, deleterious effects of these products are prevented, and one of the strongest arguments in support of their theory has been the experiment of Blum who showed that if the secretion from the thyroid gland was artificially combined with iodine, it no longer had characteristic thyroid effects. The more completely these proteins are saturated with iodine the less harmful they are.

Such being the case, it follows that if the extracts of the gland contain little iodine, we should expect very active toxic effects from it since the metabolic toxins have been only partially rendered innocuous. Second, it must follow that if the action takes place only within the thyroid gland, removal of the thyroid must render it impossible for thyroid function to be subserved in such an animal. We know that both of these propositions are incorrect. We know that if thyroid protein is administered to animals and patients in whom the gland is entirely lacking, or pathologically so damaged as to be incapable of function, it causes such physiologic changes as to make the animal in most respects normal. The proper functioning of the extract does not require the presence of the gland.

It must be evident, therefore, that the physiologic action of this secretion is exerted on other tissues than the thyroid. We know, likewise, that thyroids containing little iodine show comparatively little of the characteristic thyroid effect, while those containing much iodine are much more active physiologically. There is absolutely no reason whatsoever for supposing that the artificial addition of iodine to the thyroid protein *in vitro* is in any way comparable to the action which is accomplished by the epithelial cell of the gland. No artificially prepared iodine-containing substance has an effect similar to that of thyroid secretion, or can be used as a substitute for thyroid secretion. Both of these conclusions are well established and they are sufficient to controvert successfully the belief that the thyroid function is entirely accomplished within the gland itself. The function of the gland is to produce a substance which is absorbed into the circulating fluids of the body to act on some of the distant tissues, and it probably is not of benefit to the animal for physiologic purposes except as reserve material while it remains in the gland. Except for the fact that the gland does not have a definite duct,

Fear.—Fear as an emotion is based on the instinct fundamental to all organisms, that of self-preservation, and so serves an important purpose in safeguarding the individual. In the presence of danger the emotion of fear spurs one on either to flight or to resistance against the threatened danger. When one knows that his life is threatened, his consciously felt emotion of fear is easily explained as a result of that danger. Man's reasoned or rational fears are the fear of death, the fear of pain, and the dread of disesteem. "To the fear of death are ultimately referable all emotions of fear, whether conscious or not; and pain is a motive for dread even when it is not mortal."—W. K. Walker, in *Pennsylvania Medical Journal*.

there is no reason why it should be classed with the glands of internal secretion.

We know that the physiologically active portion of the gland secretion is a protein substance containing iodine in a specific organic combination. The iodine is probably combined with some aromatic group in the molecule. Precisely what its structure is, we do not know. No substance having similar properties has ever been prepared in the laboratory. It does not seem probable that there is only one kind of protein substance which contains iodine. There is a very wide variation in the size of the normal thyroid gland and likewise in the iodine content of the protein taken from glands of individuals who have no apparent thyroid abnormality, as regards either structure or function.

If one attempts to separate the proteins from the thyroid gland into various groups, one finds it possible to obtain a number of different fractions, all of which are true proteins and all of which contain iodine, though the iodine content varies widely. I have never been able to obtain a definite protein or proteose from the thyroid absolutely free of iodine. This is contrary to the findings of many other investigators. The protein which in my experience answers all the physiologic requirements is readily prepared from normal thyroid glands by extracting the pulverized tissue with physiologic salt solution, filtering through gauze and paper pulp and from this clear filtrate obtaining a precipitate by acidifying with acetic acid and heating to 44 C. This protein corresponds to the thyroglobulin described by Oswald. From the clear filtrate other proteins and proteoses may be separated by heating to a higher temperature, and by the addition of various salts. As previously stated, all these protein fragments contain iodine, but the protein first separated contains a much larger percentage of iodine than any of the others. In extracts of beef and pig glands, acetic acid gives an abundant precipitate before heating, but in human and sheep glands, the heating is necessary to cause a separation of protein.

It seems probable that the thyroid function is dependent on the presence of iodine in the molecule and most investigators are agreed that the physiologic activity of the secretion is at least roughly proportional to the iodine content. I believe that we do not yet have convincing evidence that iodine-free thyroid has characteristic function. Hunt has devised a quantitative method for measuring thyroid activity depending on the protection of mice to aceto-nitrile poisoning. In his hands this method has yielded most remarkable results. In my judgment the iodine value is quite as accurate and much simpler in application.

We have yet no evidence to show that differing qualitative effects are produced by thyroid from different types of glands with different iodine values. The normal thyroid contains alveoli filled with the colloid substance which is largely made up of the particular globulin having characteristic thyroid activity. The quantity of this particular protein varies widely in different glands. No structure in the body shows such marked changes in its histologic characteristics as the thyroid.

The facilities for the absorption of this material are apparently not such as to provide for taking up a large quantity in a short space of time, and the question arises as to how large an amount of this material must enter the circulation in a unit of time in order to satisfactorily carry on the thyroid function. As far as we can judge from experimental conditions, the sensitiveness of different animals and different individuals to thyroid shows wide variations. In some instances I have produced

noticeable effect in a human adult by the hypodermic administration of 5 mg. of protein prepared as above from normal glands containing between 0.32 and 0.36 mg. of iodine per gram of fresh gland. In other cases, 0.01 gm. has shown decided activity, while 0.06 gm. usually shows quite pronounced effects even in normal individuals. In several cases of cretinism I have found 0.01 gm. of this protein has been effective in completely ameliorating symptoms. In myxedema, 0.03 gm. of these proteins taken each day has kept the symptoms completely under control. On the other hand, I have had individuals taking 0.5 gm. daily for considerable periods without producing any other effect, as far as could be determined, than that of general well-being. There is then a very wide variation between the limits of the amount required to maintain health and the amount which an individual may take without causing marked physiologic disturbance. Furthermore, if so small a quantity of protein as that mentioned is sufficient to satisfy the needs of the average individual for thyroid function, we need not suppose that the venous blood or the lymph coming from a thyroid should contain very much of this secretion. Three-hundredths of a gram of this protein put into the blood which flows through a normal gland in one day (and this has been estimated by Kraus to be fourteen times the total volume of blood in the body) would not give an appreciable addition in iodine. It furthermore indicates what a large factor of safety there is in a normal thyroid gland. Such a gland would average about 20 gm. in weight from which there might be obtained 3 gm. of the protein above used or one hundred times the quantity sufficient to fill the demand for this secretion in the case of a myxedematous patient.

Since the isolation of iodothyron by Baumann it has been believed that the thyroid function might be served by the use of this small fragment of the protein, but it is my belief that the thyroid function is not in all respects to be filled by this fragment. The physiologic as well as the most effective method of administering thyroid secretion to an animal is to give the same biologic sort of secretion by hypodermic injection. I have in many instances been unable to get the same quality of effect or to produce the same change in the metabolism of an animal by administering thyroid by mouth as could be obtained when giving it directly into the circulation. We do not know on what tissue or set of tissues the thyroid secretion acts. It does not seem to me probable that it is to be compared to the exclusive action of secretin, but rather that most of the tissues in the body are in some way affected by this substance, perhaps in part through the medium of the nervous system. We know that it is connected in some way with the function of oxidation in the body. By the administration of thyroid to a cretin or patient with myxedema it is possible to increase the absorption of oxygen from 20 to 75 per cent. There is a corresponding increase in the amount of heat given off from the body. The removal of the thyroid in an animal will cause diminution in the absorption of oxygen which may be again increased by thyroid feeding. Administration of thyroid to a normal animal will cause an increase of from 10 to 40 per cent. in the oxygen demand. In comparing myxedema with Graves' disease, we find a very marked contrast in this respect. With the former the absorption of oxygen, the food requirement, the energy exchange is often not more than 40 to 50 per cent. of the normal, while in the latter we see these factors very much increased, occasionally to nearly double the normal. We are again confronted by our

lack of knowledge when we find that these changes do not always follow thyroid administration.

On the same diet the nitrogen excretion is less when the animal is deprived of the thyroid and markedly increased when thyroid is again given. Such a result is probably merely secondary to the question of oxidation in the different tissues. We do not know why this increased oxidation and nitrogen loss follows administration of thyroid, but Schryver has found that the liver of animals that have been fed on thyroid show during the first twenty-four hours more rapid autolysis than controls. Wells has found that the addition of thyroid to the autolyzing liver has no effect in this respect, but such an experiment is not exactly comparable to Schryver's and does not controvert the accuracy of his results. It seems probable some change has been effected in the liver cell making it more susceptible to autolytic destruction. But a point of great interest is that if the animal is fed for some time on thyroid the rapid autolysis is not seen. A somewhat similar phenomenon is seen in some cases of thyroid feeding to obese persons. A small quantity of thyroid will in the beginning cause a comparatively rapid loss in weight from 10 to 30 pounds, but then a refractory period is reached when a large quantity will cause little or no changes. The character of the nitrogenous metabolism, that is, the distribution of various nitrogenous constituents in the urine, is not markedly different in cases of myxedema and Graves' disease, but I have recently observed instances in which toxic symptoms of somewhat varying type have been associated with high ammonia and high rest nitrogen fractions in the urine and in which complete symptomatic relief and normal nitrogen divisions in the urine followed the administration of thyroid. It is not possible to say that these individuals were suffering primarily from a lack of thyroid function since there was no other evidence than the facts which I have stated.

The nitrogen requirement to maintain equilibrium is increased by the addition of thyroid. It has been observed that the protein-sparing power of carbohydrate is less rapidly manifested in the metabolism experiments on animals being fed with thyroid. We may compare such experiments to conditions found in patients suffering from exophthalmic goiter. We find during certain of the acute phases of the disease that the nitrogen requirements are very high indeed. I have seen a patient in the toxic phases lose weight and show a marked nitrogen loss when she was receiving a diet so rich in carbohydrate that she had an alimentary glycosuria; and with a nitrogen intake of 22 gm. the nitrogen loss at the same time was 4.5 gm. It is not possible to feed such persons a sufficient quantity of any form of diet to entirely prevent nitrogen loss. Such patients may show an elevation of temperature, 1 to 1.5 degrees. They are usually very nervous, although physically weak, and it is evident that we are not dealing here with physiologic conditions in metabolism in which the usual procedures for preventing nitrogen loss are available, but rather that the excessive quantity of thyroid secretion has so altered the metabolic processes that we have a toxic destruction corresponding to what takes place in some of the infections. Such a phase of the disease does not usually last long.

The thyroid function is in some way concerned with carbohydrate metabolism. Repeated observations have been made showing that the administration of thyroid renders the assimilation or retention of carbohydrate more difficult. Certain facts in regard to this matter have been observed clinically. In severe Graves' disease

an alimentary glycosuria is not rare and occasionally a severe and rapidly fatal diabetes develops after this disease when all the other symptoms have been relieved or have abated. In myxedema, on the contrary, the limits of assimilation for carbohydrate are much above those observed normally. In relation to this matter, I will mention an instance of severe fatal diabetes occurring in a woman of 53 after recovery from Graves' disease. In this case, the administration of thyroid to the patient caused a marked increase amounting to 90 per cent. in the quantity of sugar excreted as well as marked increase in the excretion of diacetic acid, oxybutyric acid and acetone. The patient at this time had no symptoms of Graves' disease. There was no reason to suppose that the diabetes was in any way concerned with the hyperfunction of the patient's own gland.

One can scarcely discuss this question without referring to the theories which have been advanced by Falta and his co-workers. The supposed interrelations between the thyroid, pancreas and adrenal, which they have worked out, are suggestive and possibly point to a future explanation of some of these matters. The experimental results which they have used thus far to substantiate their theory are only suggestive, and in my judgment they have proved nothing more than that further investigation along those lines is necessary.

The reaction on the pupil of the enucleated frog's eye has been used to show an antagonistic action between the adrenal and the thyroid. Such a reaction indicates that we may get some antagonistic action between these two glands, but although we must suspect that the thyroid is closely related with other glands in the body, and we may say that we know that such interrelations probably exist, the majority of these theories regarding these interrelations are based on pathologic and clinical observations and not on accurate experimentation.

Attempts have been made to demonstrate that the thyroid gland serves a particularly valuable function in combating infections in the body. The expressed juices of the thyroid have been allowed to act directly on bacteria with apparent bactericidal effect, but not in any respect more than was obtained from extracts of the liver and kidney. The quantity of the alexin in the blood has been found to be increased in those animals to which thyroid has been given, and it is a commonly observed fact that cretinous and myxedematous patients do not bear infections well, while on the other hand certain observers believe that every infection stimulates the thyroid to additional activity. It is certainly open to question whether a specific effect in infections is to be ascribed to the thyroid. It rather appears that the effect is a general one and it seems improbable that the thyroid function is one of the specific means by which the body protects itself from infectious diseases.

From the evidence which is now obtainable I think we must conclude that the thyroid gland furnishes a hormone which may be present in the blood within wide limits in the condition which we call health, and which stimulates a variety of tissues to a physiologic, and at times a pathologic, degree of activity.

Occupation in Treatment of Neurasthenia.—Healthy occupation of body and mind, says D. Ferrier in the *Practitioner*, never does any harm to the most pronounced neurasthenic, but the reverse. If work at first is hard, it becomes easier by degrees, and patients who find the régime a hard one should be told that it is better to be ill at work than ill in idleness. The misfortune is that so many neurasthenics have neither the determination nor the courage to submit to the necessary training of their morals, and thus go to swell the crowd of able-bodied valetudinarians.

REPORT OF A CASE OF EPIDEMIC ANTERIOR POLIOMYELITIS

DIAGNOSIS IN PREPARALYTIC STAGE BY LUMBAR
PUNCTURE

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The patient, a young man of 21, was a member of the freshman class at Princeton, where he had been in attendance for five weeks before the onset of symptoms. At his home in Bernardsville, N. J., no cases of poliomyelitis were known to have occurred. At Princeton during the summer there had been several cases of the disease and in the college three cases, all in the freshman class, two of them fatal. The patients had all come from infected localities, though the disease did not appear until those attacked had been from two to five weeks in Princeton. The men did not know each other or room in the same dormitory, the only point of contact being in commons or recitation room. The patient had been under my care for a number of years. The only significant thing in his past history was pneumonia four years ago, and a rather run-down condition a year ago, at which time tuberculosis was suspected. He had had a slight cold the week before from which he had practically recovered. Three weeks before the onset of symptoms he had attended the

kocytes, 12,000; small lymphocytes, 30.2 per cent.; large lymphocytes, 4.8; polymorphonuclear, 64.6; eosinophils, 0.2; basophils, 0.2; plasmodia of malaria, none. The Widal test was negative in dilution of 1 to 20. The urine was acid clear; albumin, faint trace; sugar, none; indican, trace; specific gravity, 1.028. Microscopic examination showed few leukocytes. In view of the negative finding on physical examination, and in the blood and urine, it was resolved to wait for the result of the blood-culture, which might be expected to show *Bacillus typhosus*, were it present, and in the absence of this, if symptoms persisted, to introduce a needle into the spinal canal.

On November 1 the patient was more comfortable, though there was some pain in the lumbar region. High temperature persisted. The bowels, which had not moved since the 29th, were finally moved by calomel salts and rectal irritation. The results were foul-smelling.

On November 2 fever persisted. The second blood examination shows a slight fall in polymorphonuclear cells and increase in the small lymphocytes. Polymorphonuclears were 59 per cent, lymphocytes 34 per cent. The physical examination was still negative, but all the reflexes were less active and the ankle-clonus had disappeared. Rigidity of the neck as before. The diagnosis at this point was still obscure. The patient might have typhoid fever, gastro-intestinal toxemia, one of the more slowly developing cases of meningitis, or poliomyelitis. As the blood culture was reported sterile, lumbar puncture was performed. There was a rapid drop flow and 10 c.c. of fluid obtained. The fluid was practically clear; only a slight shimmering appearance was noticed

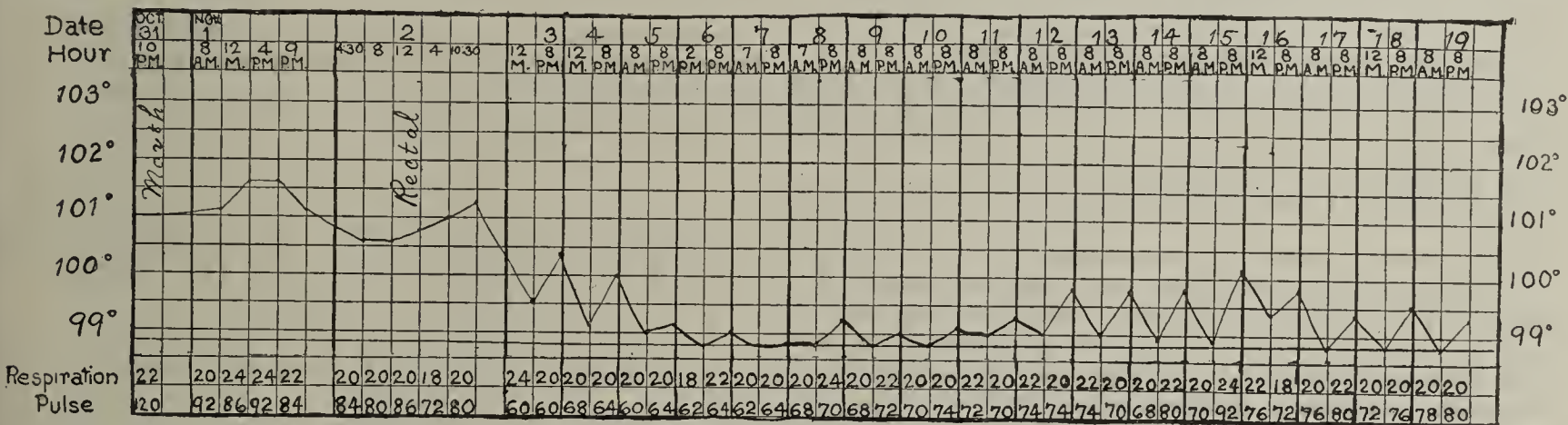


Chart of case of poliomyelitis.

funeral of one of the men who died of the disease. On October 29 he suffered from malaise, headache and chilly sensation, but felt well enough to take the train for Washington. On the next day, however, as the symptoms continued and became more severe, he returned to college and, as his bowels had not moved since the 29th, on the evening of the 30th he took a dose of salts and vomited immediately; the vomiting was repeated several times during the night, but there was no movement of the bowels. The following day, October 31, there was slight pain in the back of the neck and sense of fatigue in the gluteal region.

The patient was first seen by me on the evening of October 31, fifty-six hours after the onset of symptoms. At this time his temperature was 101 F., his pulse 90, respiration 22. The pharynx was slightly reddened, the tongue coated, eyes normal, heart and lungs normal. The abdomen was soft, a trifle distended and tympanitic; there was no enlargement of the spleen and no rose spots. The reflexes were exaggerated, patella, Achilles tendon, wrist and elbow. An ankle-clonus was obtained on both sides. Kernig's and Babinski's signs were not obtained. There were no paralyses or even muscle weakness. The neck seemed a trifle stiff, but only in a strained position when the patient sat upright in bed. In the dorsal decubitus the chin was readily brought forward to the chest. As a positive diagnosis was impossible, the patient was brought to New York where he was seen in consultation by Dr. T. C. Janeway, who concurred in the negative results of the previous examination. A blood-count and blood-culture were made the same evening: red cells, 5,020,000; hemoglobin, 92 per cent; color index, 0.92; leu-

on shaking the tube. Dr. Simon Flexner, of the Rockefeller Institute, who kindly offered to examine the fluid, reported as follows:

"The first specimen, received on November 3, consisted of a limpid fluid, almost but not quite clear, and yet not turbid, showing on agitation a faint opalescence. On centrifugalization, the fluid yielded sediment containing a considerable number of small and a small number of large lymphocytes, and a very few polynuclear leukocytes. There were no red blood-corpuscles present. The perfectly clear supernatant fluid gave a marked protein reaction with Noguchi's butyric acid test. The specimen, therefore, contained excess of white corpuscles, chiefly lymphocytes, and of protein. The condition of the fluid resembled that seen in monkeys inoculated with the virus of epidemic poliomyelitis, just before the onset of paralysis."

As a result we felt that as tuberculous meningitis could be fairly excluded, a diagnosis of anterior poliomyelitis could be reasonably made; furthermore, that paralysis, if it ensued, would come shortly.

November 3, 9 a. m., temperature was still 101 F. The patient complained of muscular weakness and had some difficulty in turning in bed. There was, however, no paralysis of any muscle group. The reflexes of the upper extremities were still obtained, but the patella reflexes could be obtained only when the patient made a voluntary effort such as traction of the hands. No urine had been passed since 6:30 p. m. on November 2, but there was no evidence of enlargement upward of the bladder. The bowels had been moved with difficulty. At 2 p. m., inability to urinate continued. The bladder by

percussion extended 2 inches above the symphysis pubis. On catheterization there was no free flow of urine and pressure over the abdomen was required. There was some general weakness in the legs and a sense of weight in the right leg on flexion. At 6 p. m. a complete examination of the muscular system was made which showed paralysis of the left hamstrings, weakness of the quadratus lumborum and the lower belly of the right rectus, and slight weakness of the erector spini group. There was a sense of weight in the right thigh when the leg was lifted in extended position. The calf peronei, extensors of feet, abductors and rotators of thigh were normal; muscles of head, face, eyes, shoulder-girdle and arms normal. The wrist, elbow, biceps and Achilles reflexes were present; knee-jerks lost on both sides. Paralysis thus appeared at the end of the fifth day of the disease, and the muscle groups affected showed the presence of disease of lumbar enlargement of the cord with fairly general distribution. With the appearance of paralytic symptoms the temperature fell, gradually reaching normal on November 6.

On November 4, lumbar puncture was again performed and 10 c.c. of fluid obtained by a rapid drop flow. The leukocytes showed a slight increase; the polymorphonuclears dropped to 63.5 per cent., the lymphocytes to 27.5 per cent. Dr. Flexner's report justified the belief that the height of the irritative stage had passed. It was as follows:

"The opalescence is less, so that the fluid is, to all intents, 'clear.' The sediment obtained by centrifugalization showed still an excess of lymphocytes, but the supernatant fluid showed a diminished reaction for protein. This second fluid resembled that of monkeys after the paralysis had set in."

On the following day weakness of the extensors of the left foot and the anterior tibial group was first noted.

Pain in the back and muscles of the thigh was becoming very troublesome and was relieved only by baths of a temperature from 105 F. to 110 F. This symptom persisted until December 10 with varying intensity.

On November 7 the patella tendon reflexes were again obtained.

November 9, Kernig's sign was obtained, but no Babinski. This symptom was thought to be due to the shortening of the posterior thigh muscles. Paralysis of the hamstring muscles was of varying intensity. As early as November 7 the legs could be flexed on the thigh, but with difficulty in the ventral decubitus. The bladder paralysis lasted for twelve days, and the bowels were moved only with great difficulty for a month.

On November 27, after the temperature had been normal for ten days, the electric reactions were tested by Dr. J. Ramsay Hunt.

Reaction of degeneration was nowhere present. All muscles responded to faradism, but the left hamstring and left anterior tibial, extensors of the foot and peronei were most sluggish in response, though all the muscles of both legs and thighs were affected. The reflexes of the lower extremities had again become exaggerated and a patella-clonus was obtained.

Within a month the patient was up, and in six weeks walking, though at the time of writing there is a slight drop-foot on the right side which requires correction by orthopedic apparatus in order to prevent contraction of the stronger calf muscle. The prognosis is good for a practically perfect functional result.

As to treatment, from the start a nasal spray of a weak hydrogen peroxid solution was used, on the theory that the unknown organisms might be eliminated through the nose and reinfection thus produced. In infected monkeys Flexner has proved the infectiousness of the nasal mucous membrane. Counter-irritation to the spine by enpping and mustard was also applied early. Hexamethylenamin (urotropin) was administered in the hope that formaldehyd might be set free in the spinal cord. For the pain nothing proved so efficient as the hot tub bath, which also enabled the patient to move with ease his weakened muscle groups.

To summarize, one is impressed with the difficulty of diagnosis of this disease in its acute stage, in which it may resemble any of the infections, especially typhoid fever, influenza or intestinal toxemia. The very slight rigidity of the neck and the increase in the activity of

the reflexes, which at that time we thought might be due to a hypersensitive nervous system, were suggestive, but only the presence of an epidemic put us on our guard as to the possibility of the correct diagnosis.

The exaggeration of the reflexes, gradually diminishing, and disappearing at the time of paralysis, only to become again exaggerated later, is another point in evidence of the general nature of the disease which cannot be exclusively confined to the anterior horn cells.

The inestimable value of lumbar puncture cannot be too strongly insisted on. By its means a diagnosis was established, and the fact that paralysis would probably follow determined twenty-four hours before its onset. Finally, by a second puncture twenty-four hours after the onset of the paralysis, the fact was determined that the height of the paralysis had passed and that the paralytic stage was nearing an end. As a matter of fact, within eighteen hours we had the last evidence of progression in the lesion. The puncture had, in this case, both prognostic and diagnostic value. In view of the number of normal lumbar punctures reported, it is fair to say that Dr. Flexner reports that the increase in lymphocytes and increased protein reaction are present in the spinal fluid of his experimental monkeys for a period of only a few days and incidentally that this is the first case in which he has followed the corresponding reactions in man.

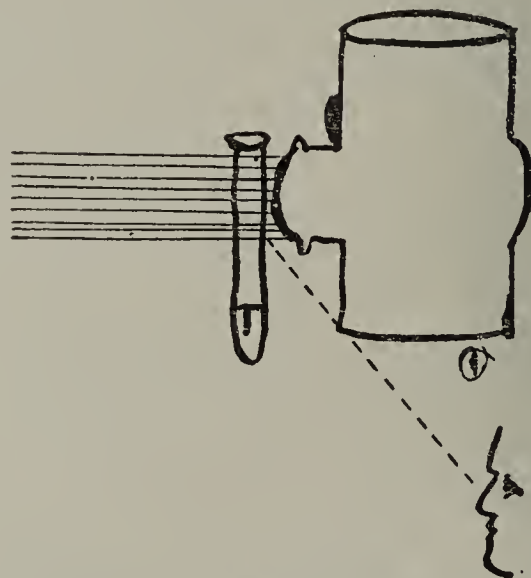
In conclusion, I wish to thank Dr. Flexner for his courtesy in examining the spinal fluid and for his many suggestions and keen practical interest in the case.

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A SIMPLE METHOD FOR THE DETECTION OF MINUTE QUANTITIES OF ALBUMIN IN URINE

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On account of the difficulty experienced in detecting the presence of minute quantities of albumin in urine, I have been constantly on the lookout for a satisfactory method. I have found a solution of the difficulty, and



Method for the detection of minute quantities of albumin in urine.

the method applies both to contact and to the heat and acid tests. The method is a very simple one and consists in passing rays of light through the fluid and looking at it at right angles to the rays, the principle being the same as that of seeing particles of dust in a ray of sunshine. For light I use the original bull's-eye lantern

used by nose and throat men for their reflected light. The detection of albumin is most satisfactorily done in connection with the heat and acid method. After heating and adding acid to the specimen the test-tube containing the fluid is held directly in front of the bull's-eye lantern and the specimen viewed from a point at right angles to the rays of light. In specimens in which I and others have failed to detect any cloudiness in all other lights, the cloudiness has stood out plainly when submitted to the above procedure. The urine should always be filtered, especially for the contact test. Any bull's-eye lantern will suffice. The great advantage of this method lies in the fact that it can be done at any time—night or day.

ABORTIVE CASES OF POLIOMYELITIS

AN EXPERIMENTAL DEMONSTRATION OF SPECIFIC IMMUNE BODIES IN THEIR BLOOD-SERUM *

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It has been pretty generally recognized, since the publication of Wickman's studies on epidemic acute anterior poliomyelitis in Sweden in 1905-06,¹ that cases of this disease may run their course without resultant paralysis. The evidence on which the occurrence of such so-called "abortive" cases is predicated is, briefly, the following:

Especially in epidemics, cases of acute anterior poliomyelitis are encountered showing all gradations in the degree and extent of paralysis. In the same group may be found cases resulting in extensive and lasting paralysis; cases with permanent paralysis of slight extent; cases in which the patients have transient paralysis, recovering completely within a few weeks or even a few days; other cases in which there is no definite paralysis, but merely muscular weakness, of short duration; still others in which the only motor disturbance is ataxia, tremor or a transient ocular disturbance such as diplopia or nystagmus. Finally, within the same group are seen cases of illness exhibiting only the symptoms of a general infection, usually accompanied by symptoms indicative of meningeal, spinal or encephalitic irritation, but without definite motor disturbances.

The diagnosis of acute anterior poliomyelitis in these cases is suggested usually by their close association with typical cases of the disease rather than by the distinctiveness of their symptoms. The symptoms are, however, sufficiently similar to the pre-paralytic symptoms observed in paralytic cases, and in many instances sufficiently different from the symptoms observed in the more common infectious diseases to justify a provisional diagnosis of poliomyelitis. The similarity of these abortive cases to cases of frank poliomyelitis in the early stage, the signs of involvement of the nervous system, their close and constant association with frank paralytic cases, and the gradation of symptoms above mentioned had convinced many observers of the etiologic identity

of abortive and paralytic cases of poliomyelitis even before any light had been thrown on the subject by the study of experimental poliomyelitis.

It has recently been noted by several observers that monkeys inoculated with the virus of poliomyelitis occasionally pass through an indefinite illness without resultant paralysis, clinically similar to abortive attacks as observed in man.

It has been shown by Levaditi and Landsteiner,² Römer and Joseph³ and Flexner and Lewis⁴ that the serum of monkeys which have recovered from poliomyelitis, mixed in suitable proportions with an emulsion of the virus and allowed to remain in contact for a sufficient length of time, renders the virus inactive, so that when injected into fresh monkeys it fails to produce the disease.

Netter and Levaditi,⁵ and Flexner and Lewis,⁴ have demonstrated the same property in the serum of human beings who have recovered from acute poliomyelitis. This property has been found by all the above observers to be absent from the serum of normal persons and monkeys, and has therefore been considered a specific property, the demonstration of which in the serum justifies the inference that the subject has passed through the infection of acute anterior poliomyelitis.

Netter and Levaditi,⁶ availing themselves of this test, have also demonstrated this germicidal property against the virus of poliomyelitis in the serum of a suspected abortive case, thereby giving additional confirmation of the etiologic identity of such cases with frank poliomyelitis.

The clinical history of the abortive case tested by Netter and Levaditi is as follows (translation from the French):

"CASE 3.—Henriette G., sister of Emile (see below), was with a nurse in L'Aveyron, returning in good health Dec. 15, 1909. Three weeks after her return the child fell off, lost appetite, became cross, showed less disposition to run about, complained of pain behind the knees when the legs were touched, and of the arms when they were pulled. These symptoms, which attracted the attention of Dr. Ergbischhoff, caused no uneasiness to the rather heedless parents, who refused to show us the child on February 7. The mother thought the child was suffering from *mal du pays*. Whatever the trouble, it all disappeared in the course of three weeks. The child regained her normal appearance and showed every appearance of health the latter part of March."

A brother, Emile, 6 years old was taken ill either a few days before or a few days after this child (the dates given are not clear as to the sequence of cases) with a typical attack of acute anterior poliomyelitis, resulting in lasting paralysis of a leg and an arm.

The experiments which we here report are similar to the above experiment of Netter and Levaditi, undertaken on a more extensive scale, designed to throw some light on the diagnosis and epidemiologic significance of a class of cases encountered by one of us,⁷ in a field study of acute anterior poliomyelitis at Mason City, Iowa, and other points in that state during the summer of 1910.

2. Levaditi, C., and Landsteiner, K.: *Compt.-rend. Soc. de biol.*, 1910, lxxviii, 311.

3. Römer, P., and Joseph, K.: *München med. Wehnschr.*, 1910, lvii, 568.

4. Flexner, S., and Lewis, Paul A.: *Experimental Poliomyelitis in Monkeys*, *THE JOURNAL A. M. A.*, May 28, 1910, p. 1780.

5. Netter, A., and Levaditi, C.: *Comp.-rend. Soc. de biol.*, 1910, lxxviii, 617.

6. Netter, A., and Levaditi, C.: *Compt.-rend. Soc. biol.*, 1910, lxxviii, 855.

7. Frost, W. H.: *The Field Investigation of Epidemic Poliomyelitis (What the Health Officer Can Do Toward Solving a National Problem)*, *Pub. Health Rep.*, Nov. 18, 1910, p. 1663; *Discussion of the Epidemic of Anterior Poliomyelitis at a Meeting of the Iowa State Board of Health*, *Iowa Med. Jour.*, Nov. 15, 1910, p. 236.

*From the Hygienic Laboratory

1. Wickman, Ivar: *Beiträge zur Kenntniss der Heine-Medinschen Krankheit (Poliomyelitis acuta und verwandte Erkrankungen)*, Berlin, 1907, S. Karger.

In Mason City, Iowa, a town of about 14,000 inhabitants, there occurred from April to September, 1910, forty cases of undoubted acute anterior poliomyelitis, resulting in typical flaccid atrophic paralysis. At the same time there occurred a considerable number of cases of illness with symptoms suggestive of the early symptoms of acute poliomyelitis, but not resulting in paralysis, and often of such mild character as not to come under the observation of any physician.

REPORTS OF CASES

Blood-specimens were obtained in the latter part of November from a number of these cases, whose clinical histories are given in abstract below. For the histories in several of these cases we are indebted to various physicians of Mason City. Other patients were not seen by any physician during their illness and the only histories available were such as could be given several weeks later by the patients and their families.

CASE 1.—*Control*.—Reported by Dr. C. M. Swale, Mason City. C. T., male, aged 48, laborer, was taken sick June 24

The spasticity of the paralyzed limbs, exaggeration of reflexes and absence of atrophy in this case indicated a lesion in the upper motor segment, either in the motor cortex of the brain or in the pyramidal tracts of the cord. The case was included in our series in order to ascertain the diagnosis, since it represents a rare clinical type of poliomyelitis, the diagnosis of which has always been uncertain, and whose occurrence has been a matter of some dispute.

CASE 3.—Reported by Dr. C. E. Dakin, Mason City. H. G., a woman aged 23, nurse, was taken sick suddenly June 24, after a long walk in the hot sun, with violent occipital headache, vertigo and stiffness of the neck, causing some retraction of the head. She had chilly sensations, vomited, was extremely prostrated, and felt "crazy." Temperature was normal, pulse 80. The next day she had pains in the legs and back, with tenderness along the spine, and was very restless. There was no further vomiting; the patient was constipated. The third day she complained of cramps and a sensation of numbness in the left leg, and found, on attempting to get out of bed, that this leg was weak. These symptoms gradually improved, so that in a week the patient was able to be up with no sign of paralysis. The spine, however, remained tender for several days and sen-

TABLE 1.—INOCULATIONS IN SERIES 1 *

Monkey No.	Serum from	Description of Case	Age	Result in Monkeys
16	Case 1 (control)....	Frank poliomyelitis	Adult.	Has remained well.
17	Case 2	Suspected poliomyelitis with spastic paralysis.	Adult.	Has remained well.
18	Case 3	Suspected poliomyelitis without paralysis (abortive).	Adult.	Has remained well.
19	Case 4	Suspected poliomyelitis without paralysis (abortive).	Adult.	Has remained well.
20	Case 5	Suspected poliomyelitis without paralysis (abortive).	Adult.	Has remained well.
21	Case 6	Suspected poliomyelitis without paralysis (abortive).	Adult.	Has remained well.
25	Case 7 †	Suspected poliomyelitis without paralysis (abortive).	16	Paralysis all extremities on sixth day.
26	Case 8 †	Suspected poliomyelitis without paralysis (abortive).	Child.	Paralysis all extremities, trunk and neck.
22	Case 9	Suspected poliomyelitis without paralysis (abortive).	Adult.	Has remained well.
23	Case 10	Suspected poliomyelitis without paralysis (abortive).	Adult.	Has remained well.
24	Case 11 †	Suspected poliomyelitis without paralysis (abortive).	.....	Paralysis all extremities on eighth day.
27	Control JR	Normal.....	Adult.	Paralysis of hind legs tenth day, all extremities twelfth day; chloroformed.
27A	Control JR	Normal.....	Adult.	Paralysis of all extremities tenth day.

* Each monkey inoculated intracerebrally Nov. 30, 1910, with 0.5 c.c. of a mixture of 5 per cent. emulsion of fresh spinal cord (of Monkey 15) 0.5 c.c.; serum to be tested, 0.5 c.c.; fresh normal serum, 0.1 c.c. Mixtures allowed to stand one hour at 37 C. and twenty hours at 15 C. before injection. † Refers to same serum in Series 2.

with a chill, fever, pains in the legs and back, stiffness of neck, some delirium. On the third day there was paralysis of both thighs and legs and both upper arms, and partial paralysis of the forearms. When last seen, Nov. 24, 1910, the lower limbs and upper arms were still paralyzed, flaccid and atrophic, but showing some improvement. This is a typical case of acute anterior poliomyelitis, included in our series as a control.

CASE 2.—Reported by Dr. B. F. Weston, Mason City. Mrs. W., 22, waitress, was taken sick the latter part of June, 1910, with fever and indefinite general symptoms. After several days she became paralyzed in both lower limbs. She was admitted to a hospital about one week after onset. She was said to have had, at that time, a flaccid motor paralysis of both lower extremities which, however, became spastic within a few days. When the patient was seen the latter part of July, 1910, both legs and thighs were quite spastic. No active motion was possible except of the toes and slight flexion of the left knee. Passive motion was limited to partial flexion of the thighs and slight flexion of left knee—almost none of the right knee. The patellar reflexes greatly exaggerated on both sides; ankle-clonus on right side; sensation for touch and pain was normal. Examination was otherwise negative. The patient's general health was good.

Nov. 25, 1910, the left leg could be moved, but rather awkwardly. The right leg showed little, if any, improvement. Patellar reflexes were still exaggerated, more so on the right side. There was no ankle-clonus and no atrophy.

sitive to jarring. A week later she had a slight recurrence of similar symptoms, with a pharyngitis.

There was no elevation of the temperature at any time in this case, which was seen daily by the attending physician. The patient knew of no direct association with cases of poliomyelitis, within a month prior to her illness. She was, however, at the time of her illness living at the house of a physician who had recently attended patients who were suffering from this disease.

CASE 4.—Dr. C. E. Dakin, of Mason City, gives the following account of his own illness, the nature of which was hardly suspected at the time. He was taken sick about July 1, 1910, the onset being gradual. He lost appetite, was constipated, had a coated tongue and foul breath. He suffered from a persistent occipital headache, not relieved by treatment, and from severe pains in the upper dorsal and lumbar region. The neck was stiff, so that it was painful to bend the head forward although it could be rotated without pain. No retraction of the head was noted, but it was found that the most comfortable posture was lying on the back with the head extended over a pillow placed under the shoulders. He felt extremely nervous, irritable and inclined to worry over trifles. There was no elevation of temperature. These symptoms, which reached their height about July 7, gradually subsided within the next week, except the general nervousness and irritability, which persisted a good deal longer. During this time Dr. Dakin was not confined to bed, and continued his practice.

A child of his family had an attack of acute poliomyelitis with slight peroneal paralysis in May. Also about June 23 Dr. Dakin attended a child suffering from what was clearly an abortive attack of acute poliomyelitis.

CASE 5.—The patient, Mr. S., aged 30, merchant, in Mason City, was not seen by a physician. The history was obtained some two months later from the patient and his family. He was taken sick rather suddenly about June 19, with headache, pain in neck, back and legs. The temperature was not determined. The patient felt ill for a week or more, but was not confined to bed; thought he had the influenza. For more than a week after recovery one leg remained weak and "rheumatic." No previous association with any case of poliomyelitis was known. About three weeks later a 3-year-old son (the only child of the family) developed a typical case of poliomyelitis, resulting in paralysis of the left thigh and leg.

CASE 6.—Reported by Dr. C. E. Dakin, Mason City, who first saw the patient October 25. E. D., 45, farmer, residing about 7 miles northwest of Mason City, about Oct. 16, 1910, began to feel fleeting, neuritic pains in various parts of his body. There was no special pain, tenderness or stiffness of neck or back. A chronic indigestion became much aggravated, causing gastric distress, especially after eating. The patient lost appetite, and was constipated; the tongue was coated and breath foul. He was unusually nervous, irritable and sleep-

which had been associated more or less closely with these cases, viz.:

Family B.—One case, adult, July 29.

Family W.—Five cases, about August 1.

Family D.—Two cases about the same time. This is the family of Patient 6. The two who were sick at this time remained well during the subsequent illness of the other members of the household.

Family M.—One case, date not known.

Family E. B.—One case, some time after August 15.

Family C. B.—Two cases (one of them Case 10), July 31.

CASE 8.—R. G., brother of Patient 7, aged 10, was ill with sudden onset about July 22; had fever, sore throat, headache, pains in neck, back and limbs; was at first restless, then drowsy. After staying in bed one day he felt better and got up, but still had pain in the back. He fell down several times this day, apparently because of weakness of the legs. The third day he felt well, except for weakness, which gradually disappeared.

CASE 9.—W. G., father of Patients 7 and 8, aged 49, farmer, first noted, August 3, while driving his wagon, that the jolting caused him pain all over. Later in the same day he had a headache, chilly sensations and fever. The pain continued all day, chiefly in the back, neck and shoulders. The patient was constipated and had no appetite. The second day his ankles felt stiff and sore, and he felt extremely weak and uncer-

TABLE 2.—INOCULATIONS IN SERIES 2 *

Monkey No.	Serum from	Description of Case	Age	Result in Monkeys
30	Control JFA ‡	Normal.....	Adult.	Has remained well to date.
31	Control CHL	Normal.....	Adult.	Paralysis and death fifth day.
32	Control WHF	Normal.....	Adult.	Paralysis, forelegs and neck, thirteenth day.
33	Control W ‡	Normal.....	Child.	Very doubtful, slight illness; sixth to twelfth day loss of appetite, nervousness, excitability, slight irregular rise of temperature.
34	Control R ‡	Normal.....	Child.	Very doubtful, slight illness; sixth to twelfth day; symptoms as above but less marked.
35	Case 11 †	Suspected abortive case.....	Child.	Has remained well to date.
36	Case 7 †	Suspected abortive case.....	16	Paralysis of all extremities ninth day; died ninth day.
37	Case 8 †	Suspected abortive case.....	Child.	Has remained well to date.

* Conditions of experiment the same as in Series 1, except that virus used was a 1 per cent. emulsion of fresh cord (of Monkey 29).
Inoculations Dec. 24, 1910. † Refers to same serum in Series 1. ‡ Refers to same serum in Series 3.

TABLE 3.—INOCULATIONS IN SERIES 3 *

Monkey No.	Serum from	Description of Case	Age	Result in Monkeys
38	JFA (see monkey 30) ‡	Normal.....	Adult.	Paralysis of all extremities thirteenth day; chloroformed.
39	R (see monkey 34) ‡	Normal.....	Child.	Paralysis of all extremities tenth day; chloroformed.
40	W (see monkey 35) ‡	Normal.....	Child.	Paralysis of neck and forelegs tenth day; chloroformed.

* Conditions of experiment the same as in Series 1, using a 5 per cent. emulsion of fresh spinal cord (of Monkey 9). Inoculations Jan. 12, 1911. This series is a control on Series 1. † Refers to same serum in Series 2.

less. He improved gradually, returning to his usual state of health within two or three weeks.

A boy living in the same house was taken sick with acute poliomyelitis Oct. 10, 1910, and died October 16. The other two members of the household remained well at this time; but, as stated in connection with Case 7, both had suffered somewhat, similar attacks about August 1.

CASE 7.—P. G., a girl aged 16, living about seven miles northwest of Mason City, was taken sick July 11 with headache, slight backache, pains in the knees, nausea and vomiting; diarrhea; fever doubtful. There was no stiffness of neck. The patient was in bed part of one day. Felt ill and unusually weak for several days thereafter.

There was no known contact with any case of poliomyelitis prior to onset. There had, however, been a considerable gathering of neighbors at this house one week prior, and the patient and other members of the family went back and forth to Mason City, where poliomyelitis prevailed at that time.

This was the first of a group of generally similar cases occurring in this and neighboring families. Other cases of similar illness occurred in this same family as follows: sister, aged 6, July 14; two sisters aged 7 and 8 respectively, July 15 or 16; brother, aged 10 (Case 8), July 22; father, aged 49 (Case 9), August 3. Two other members of the family, one adult and one aged 13, remained well.

It was stated that cases of similar illness had occurred about the same time in several neighboring families, all of

tain on his legs. After the second day he felt much better, except for the weakness, which gradually improved, leaving him in his usual health.

CASE 10.—Reported by Dr. C. E. Dakin, Mason City. C. B., aged 48, carpenter, about July 31 began to have an occipital headache, was constipated, had no appetite; felt very weak, tired and faint. He was troubled at times with vertigo, brought on by sudden turning of the head. The cervical and dorsal spine was tender. The headache and vertigo were worse when in the sunlight. There was some photophobia. The pupils were contracted and reacted sluggishly to light. Reflexes otherwise normal. These symptoms continued for about a week and for a much longer time the patient suffered from indigestion and continued to feel weak and easily tired.

The wife of this patient was taken sick about the same time with practically identical symptoms. These two had been between July 14 and 31, to a house where a child was sick at the time with a pretty definite abortive attack of poliomyelitis. One of them had also been to a house where two sisters of Patients 7 and 8 had visited while sick. A member of the household of Patients 7, 8 and 9 was said to be a frequent visitor at the house of Mr. B. He and his wife are the family "C. B." mentioned under Case 7.

CASE 11.—Reported by Dr. Fred Albert, Mason City. J. A., male, aged 7, residing on a farm about 5 miles northeast of Mason City, was taken sick suddenly June 30 or July 1, 1910. When seen by Dr. Albert, July 2, he had a temperature of 102.5

F., had a severe occipital headache, pain and tenderness of the spine, and some inflammation of the tonsils. The next day the temperature was normal and the headache and pain and tenderness of the spine had disappeared.

Two other children in the same house were taken sick between June 29 and July 1 with similar symptoms. One recovered within a few days, while the other developed typical poliomyelitic paralysis of the arms.

Cases 3 to 11 inclusive are representative of a class of cases which were reported to be quite common in and around Mason City during the epidemic of poliomyelitis. While there is a considerable variety in their symptomatology there is, in most cases, a fairly distinct syndrome, viz., headache, more commonly occipital; pain and tenderness along the spine; neuritic pains and hyperesthesia of the limbs; a marked degree of restlessness or irritability; prostration out of proportion to the severity of the other symptoms; some gastro-intestinal derangement (anorexia, nausea, constipation or diarrhea); occasionally other symptoms of nervous derangement, as vertigo, photophobia, delirium, muscular paresis, disordered reflexes. The temperature was definitely determined to be normal in Cases 3, 4 and 10, and found elevated (102.5° F.) in Case 11. In the rest of the cases no exact information is available, as the patients were not under the observation of a physician during the acute stage. Dr. Dakin,⁸ of Mason City, who has reported elsewhere 36 cases of poliomyelitis, including Cases 3 and 10 of the above series, describes, as very characteristic, a staring, terror-stricken facial expression, which he noted also in Cases 3, 6 and 10 of our series.

Blood-specimens were obtained from all these cases by venepuncture during the latter part of November. The serum was withdrawn after coagulation and kept in closely stoppered sterile bottles. Repeated tests showed all specimens of serum to be sterile when used.

The virus used was originally obtained from the Rockefeller Institute for Medical Research through the courtesy of the director, Dr. Simon Flexner. It had been propagated through a long series of monkeys at the Rockefeller Institute and found very uniformly virulent. We have found it virulent for all the fresh monkeys which we have inoculated other than those mentioned in the following series.

SERIES 1.—Monkey 15, inoculated with the above virus, developed complete paralysis of the hind legs on the seventh day; it was chloroformed and necropsy performed the same day. A 5 per cent. emulsion of the fresh spinal cord was prepared in normal salt solution, and filtered through paper to remove gross particles. One-half cubic centimeter of this emulsion was added to an equal amount (0.5 c.c.) of each of the serums to be tested.

To each mixture was added 0.1 c.c. of fresh normal human serum (J. R.). As controls, two mixtures were made with normal human serum (J. R.). The mixtures of serum and virus were kept 1 hour at 37° C., then placed over night (about 20 hours) at 15° C. A series of monkeys was inoculated in the brain, each monkey receiving 0.5 c.c. of one of the mixtures of virus and serum, Nov. 30, 1910.

The two control monkeys receiving the mixtures of normal serum and virus developed typical paralysis on the eighth and tenth days respectively.

The monkeys receiving the mixtures of virus with the serum of Patients 7, 8 and 11 also developed equally typical paralysis on the seventh, fifth and seventh days respectively. All the others have remained well up to the present time (Feb. 4, 1911).

It will be noted that the three specimens of serum which failed to affect the virus were from young persons (Patient 7, aged 16; Patient 8, aged 10; Patient 11,

aged 7). The remainder of the serums were from adults. This suggested two possibilities:

1. The serum of normal adults may have considerable germicidal properties for the virus.

2. The serum of children, even when they have had an attack of poliomyelitis, may not develop germicidal antibodies; or may develop them in smaller amounts than the serum of adults.

SERIES 2.—To test these hypotheses, we inoculated another series of monkeys with exactly the same technic, except that, instead of a 5 per cent. emulsion of spinal cord we used a 1 per cent. emulsion (fresh cord of Monkey 29, inoculated December 13; paralysis of hind legs December 23; chloroformed and cord removed December 23).

In this series we used again the serum of Patients 7, 8 and 11, and for controls took the serum of three normal adults (J. F. A., C. H. L., and W. H. F.) and of two normal children (R. and W.). Granting an equal concentration of the virus in the two cords used in series 1 and 2 (Monkey 15 and Monkey 29), each specimen of serum would now be mixed with the same volume of emulsion as in Series 1, but with one-fifth of the amount of virus. Also, the amount used in inoculation (0.5 c.c.) would represent only one-fifth of the amount of virus inoculated into the animals of series 1.

The results in this series were somewhat irregular. The monkeys receiving the serum of two of the normal adults (C. H. L. and W. H. F.) developed poliomyelitis on the fifth and thirteenth days respectively. The monkey which received the serum of Patient 7 developed paralysis of all extremities on the eighth day. None of the other monkeys, including those which received the serum of Patients 8 and 11, the serum of one normal adult (J. F. A.), and of the two normal children, have developed paralysis up to this time. Two of the monkeys, however (those receiving the serum of the two normal children), appeared about a week after inoculation to have an indefinite illness, manifested by slight rises of temperature, loss of appetite, nervousness, and undue excitability. Whether these may be considered abortive attacks of poliomyelitis is extremely questionable.

These results would indicate that in this series we had approached the limit of proportions in which normal human serum may exert a neutralizing effect on the virus of poliomyelitis, or else had approached the minimum effective amount of virus for inoculation. They indicate pretty clearly that the serum of Patient 7 had no unusual germicidal properties, but leave the other two cases (8 and 11) in doubtful status.

SERIES 3.—Three specimens of normal serum having been found capable of neutralizing the virus in the proportion used in Series 2, that is, against equal volumes of a 1 per cent. emulsion of virus, it remained to test these three specimens again under the conditions of Series 1. Accordingly we inoculated another series of monkeys, using a 5 per cent. emulsion of virus (fresh cord of Monkey 9, inoculated Jan. 7, 1911; died fourth day; gross and histologic lesions typical).

The serums used were the same specimens which had shown neutralizing properties in Series 2, viz., from one normal adult (J. F. A.) and two normal children (R. and W.). The technic and proportions were exactly as in Series 1.

All three monkeys came down with typical paralysis between the eighth and the twelfth days.

The three series of experiments are presented in the accompanying tables.

SUMMARY

The results of these experiments may be summarized as follows:

Normal Human Serum.—The results in Series 2 indicate that normal human serum may have a germicidal action on the virus of poliomyelitis. If this is so, however, the action has quantitative limits which clearly differentiate it from the action exercised by the serum of persons who have had poliomyelitis as shown in

Series 1 and 3. No appreciable difference has been demonstrated between the normal serum of adults and of children in regard to their action on the virus.

Serum of Patients Who Have Recovered.—As shown by the workers above cited and by our results, the serum of persons who have recently recovered from frank attacks of poliomyelitis exhibits a germicidal action on the virus considerably greater than that exhibited by normal serum. Serum from a person suffering from paralysis of spastic type showed the same properties, thus confirming the clinical evidence that acute poliomyelitis may cause paralysis of this type.

The serum of six out of nine patients (66.7 per cent.) who had recently recovered from suspected poliomyelitis without paralysis (abortive cases) showed the same germicidal action as the serum from a frank case of poliomyelitis.

In the serum from the other three suspected abortive cases of poliomyelitis we were unable to demonstrate any germicidal property beyond that shown by normal serum. These three specimens of serum were all obtained from young persons. These three cases clinically resembled poliomyelitis more than did some of the adult cases; and the symptoms were, on the whole, equally severe. The following possibilities suggest themselves:

1. The cases may not have been poliomyelitis.
2. They may have been poliomyelitis, but, if so, antibodies were either formed in less amount, or disappeared more rapidly than in the adult cases.

The experimental evidence on which the specificity, constancy and quantitative relations of this reaction must be estimated is scant. So far as it goes, however, it justifies the inference that the reaction as demonstrated in our experiments is specific.

We feel justified in concluding that the diagnosis of acute poliomyelitis has been established in six of our nine suspected abortive cases. The diagnosis in the other three is not cleared up by the experiments. The clinical and epidemiologic evidence of poliomyelitis in these cases must be weighed against the absence of a serum-reaction of unknown constancy.

The facts here presented have a significant bearing on the diagnosis and epidemiology of acute anterior poliomyelitis.

DIAGNOSIS

The generally accepted criterion for diagnosis of poliomyelitis has been the development of paralysis or at least definite weakness. It has been urged that the attempt to make a diagnosis on any clinical evidence less than this would result in hopeless confusion; and this is partly true in the present state of our knowledge of the disease. In the cases of our series, however, poliomyelitis had been suspected on clinical evidence alone and confirmed by biologic test in 66.7 per cent., a fact which would indicate that the diagnosis of abortive cases of this class is not wholly a matter of guess-work, provided special attention has been directed to poliomyelitis, as was the case in Mason City. No laboratory diagnostic methods of demonstrated reliability and universal application have been evolved. The early examination of cerebrospinal fluid is the most reliable laboratory method at present known. Lumbar puncture for diagnosis is hardly justifiable, however, unless some consideration of the safety, either of the patient or of the community, makes an accurate diagnosis of special importance. Total and differential leukocyte counts offer a promising aid to diagnosis, but much more work will be necessary to establish the reliability of this

method. But even in the absence of any specific diagnostic methods, much light can doubtless be thrown on the subject by a careful and conservative study of all cases which may reasonably be suspected of being cases of poliomyelitis, paying especial attention to examination of the nervous system and to association with cases of frank poliomyelitis.

Until the clinical recognition of poliomyelitis is placed on a more reliable basis there will remain an indeterminate factor in its epidemiology, a factor whose significance can only be surmised at present. Conclusions from epidemiologic data will have to be correspondingly conservative.

A more detailed discussion of abortive cases, as observed in Iowa, and of their epidemiologic relations will be reported in a forthcoming bulletin of the Hygienic Laboratory.

Therapeutics

PROPHYLAXIS OF SCARLET FEVER

Every physician, no matter how limited or specialized he may attempt to make his practice, is likely to encounter a case of scarlet fever, and to have his opinion asked in regard to what should be done to prevent the transmission of the disease to others. Even if he does not personally encounter the disease, he cannot avoid being asked the same question, apropos of some case he has not seen, by an anxious mother or a father seeking for positive information from one whom they believe to have the knowledge of an expert. It reflects no credit on his scientific attainments, it does not increase the confidence in him of his patients, if he cannot state promptly, clearly, concisely and positively what should be done by the family in which the disease occurs to prevent its spread to other individuals, what the family which does not have it, but is afraid of getting it, should themselves do, as well as what they have a right to expect others to do, in order to prevent the spread of the disease.

To the striking development of knowledge of sanitary science and preventive medicine which has taken place during the last three or four decades we are indebted for the wider recognition of the fact that scarlatina, scarlet rash and scarlet fever are synonymous terms, that they do not indicate different diseases, but one and the same disease. Formerly, many of the laity and not a few physicians believed, or at least said, that scarlatina and scarlet rash were different from scarlet fever. But numerous careful observations have shown, and the profession generally has learned, that while scarlet fever may be, and often is, a very serious disease with high temperature, severe sore throat, intense and widely spread eruption, followed by copious desquamation, the fever may be slight or entirely absent, the throat may not show more than slight congestion, the eruption, if not entirely absent, may be not very pronounced in appearance, not widely spread over the body and of rather transient duration, while the desquamation may be so slight as to be hardly recognizable.

Furthermore, it is now generally recognized not only that the very mild cases may be followed by the most serious sequelæ which are observed after the severe forms of the disease, and particularly by inflammation of the kidneys, but also that severe forms of scarlet

fever may be, and often are, contracted from patients whose symptoms have been exceedingly mild.

Scarlet fever differs from measles, with which it is often associated in discussions, and in popular thought, in the fact that everyone seems to be susceptible to measles, and to contract the disease on exposure, if he has not already suffered an attack; while many seem to be not susceptible to scarlet fever, and do not contract the disease after direct and frequent exposure. A possible explanation of this apparent immunity to scarlet fever may be, at least in some cases, that these immune individuals have in their earlier life passed through an attack of scarlet fever of so mild a type that no physician was called to the patient, or if one was called, he did not recognize the nature of the disease. This, however, probably does not explain all cases of apparent immunity. Undoubtedly there are many persons who never contract the disease except after unusual exposure. On the other hand, it is unjustifiable carelessly or wittingly to expose child or adult to the disease, no matter how mild the type may be.

At the outset of a discussion of the subject we are hampered by the lack of any definite, positive knowledge as to the exact nature of the disease, and the method in which it is transmitted from one individual to another. It has long been believed that the contagious element of the disease existed in the scales which occur in greater or less profusion during desquamation. At present there is a tendency to believe that the scales do not possess great power of transmitting the disease during all stages of desquamation, and especially toward the termination of that process. On the other hand, it has not been proved that the scales are innocuous, or that they become so at any definite period of the stage of desquamation. Consequently, it becomes of great importance to control the dissemination of these scales.

Furthermore, of late the belief has been gaining ground that the element of contagion exists actively and abundantly in the secretions from the throat and nose, and also in the discharges from the ear and from suppurating glands when they are present. Obviously then, the problem which confronts both family and physician, as well as sanitarian, is to control the dissemination of these various secretions, discharges, exfoliations, and the usual excretions.

The key to the mastery of the problem is a dual one and embraces first, isolation; second, disinfection.

The establishment of isolation often taxes severely the tact and good judgment of the physician. If the family is large and lives in a small house or apartment and on a limited income, and if the municipality of which they are citizens affords the luxury of an isolation hospital, or a hospital or wards of a hospital are set apart for the treatment of contagious diseases, obviously the easiest, and, for the family, the cheapest way out of the otherwise complicated situation is to transport the patient immediately to such an institution. Here he will be under the care of attendants who are accustomed to handling patients with the disease, and who are trained to exercise all the precautions necessary to prevent the spread of the disease.

But it is possible to make this disposition of the case in only a limited number of localities. Most towns have no special provision for taking care of scarlet fever, and in such cases the patients must be treated in their own homes. If the family has ample means and lives in a large house, a large room or a suite of rooms must be set apart for the exclusive use of the patient and the

special attendant, who must be sequestered to give him exclusive attention. Such an apartment or suite should, if possible, be selected on the third floor of the house or at the end of a hall, so that the other members of the family will have no occasion to go near it. The room should be large and sunny, and all unnecessary articles, such as curtains, upholstered furniture, and ornaments, should be removed, so that there will be as few articles as possible to which the disease poison may adhere and which will need to be cleaned or destroyed after the recovery of the patient. The attendant should not invade other parts of the house. Food and other necessities should be left outside the door of the apartment occupied by the patient by another member of the household. Similarly, everything which requires removal from the infected apartment should be disinfected and placed outside the apartment, and thence carried away. The most important things which are likely to require removal are dishes, clothing, and excreta. These should be disinfected by being placed in suitable vessels and then allowed to soak for an hour in a 2.5 per cent. solution of phenol (carbolic acid). Things which are of little or no value and which are combustible, such as the remnants of food and pieces of cloth or paper which have been used about the room, should be burned. If the nurse finds it necessary to leave the patient's quarters, she should change all her outer garments outside of the patient's room, she should cover her hair, and avoid coming into close contact with anyone. These precautions of isolation should be carried out continuously and strictly until desquamation is entirely completed. During the period of desquamation the patient should be sponged or bathed once or twice a day with hot water (and if there are bath-room facilities the convalescent should have a daily hot tub bath), and then the skin should be anointed with *adeps lanæ hydrosus* (lanolin) which has been softened with almond (or other bland) oil, and perfumed to suit. Phenol (carbolic acid) ointments are inadvisable, as any absorption would irritate the kidneys. Sponging with alcohol is contra-indicated. After desquamation has ceased, the patient should remove all the clothing which he has been wearing, take a warm bath, with soap, and have his head well shampooed. Then he must dress himself throughout in fresh clothing.

After the patient has left the apartment it should be thoroughly disinfected. Formerly this was accomplished by burning sulphur in the room, but this has been superseded by formaldehyd, which is more efficient, is less injurious to the contents of the room, and is not more troublesome nor much more expensive. Drawers of bureaus and chiffoniers should be opened and their contents loosened, clothing should be hung on chairs or lines, and the bedding should be distributed so that the formaldehyd gas may easily penetrate everywhere. The 40 per cent. formaldehyd solution may be efficiently used by sprinkling it on wet sheets hung on lines stretched through the room. Keyholes and open spaces around doors and windows should be stuffed with cotton, cloth, or paper, so as to retain the gas in efficient concentration to disinfect the room. One pint of the so-called 40 per cent. solution should be used for a room of ordinary size. After twenty-four hours the windows of the room should be opened widely, and fresh air and sunlight should be allowed to enter freely and penetrate every part of the room. It should never be forgotten that outside air and sunshine are among the most useful of disinfectants. Carpets, rugs and bedding should be

hung outdoors, so as to be thoroughly exposed to the sun and wind. Such articles of clothing and bedding as are washable should be boiled for an hour.

When it is possible to carry out such strict isolation as has been described, there is no necessity of quarantining the rest of the family, but, unfortunately, such complete isolation is ideal, and can rarely be carried out in actual practice. Even when a large family occupies a few rooms, it is essential that one room be selected for the patient, and that he be kept in it constantly, and that the other members of the family be kept out of it entirely, except one who is selected to act as the attendant, usually the mother. Under such conditions it is usually entirely impracticable for the attendant to remain constantly in the room with the patient. She must frequently leave the room, not only to get things which the patient requires, but also to perform services for the remainder of the family. Under these circumstances it is desirable and is often entirely practicable that such members of the family as attend school, or work in stores or shops should leave home, and should live elsewhere for six or eight weeks. Those who are obliged to remain at home should avoid as much as possible coming into contact with the attendant. The latter should have several aprons, with sleeves, and large enough to cover all her other clothing. One of these she should wear constantly while in the patient's room. A sheet dampened with phenol (carbolic acid) solution, or other antiseptic solution, hung over the door is believed by many to assist materially in preventing the spread of the infectious agent.

Just here a word should be said of the physician's personal duty in order to avoid carrying the disease from house to house. It is generally believed by the medical profession that physicians who use even a moderate degree of caution rarely transport the disease from a patient to another individual, and when this does happen, the victim is usually a member of his own family.

Certain precautions he may wisely observe. He should endeavor so to arrange his calls that he will not go directly from a patient ill with scarlet fever to a family in which there is a child. On entering the house of such a patient he should put on a long cotton, linen or rubber coat, which should be left just outside the patient's door. He should avoid sitting on the bed, or allowing the bed-clothing to come in contact with his own clothing. He should not prolong his visit unnecessarily. Before leaving the room he should thoroughly wash his hands and dry them on a clean towel.

During the convalescence the patient should not be allowed to use books from the public library or the public school, and should use only such books, magazines and newspapers as can be burned when he is through with them, or when the period of isolation is ended. Neither should he be allowed to write and send letters through the mail or by messenger to his friends.

Can anything be done or any medicine prescribed which will prevent the development of scarlet fever in a person who has been exposed to the disease? Although many practitioners have been in the habit of prescribing medicine designed, so they claimed, to prevent persons exposed to the disease from contracting it or developing it, candor compels the statement that no drug or any treatment is known which will accomplish this result. Although belladonna has been extensively used for this purpose, and has been believed by many to have accom-

plished the prevention of the disease, there is no adequate reason for believing that it has ever produced this result.

If a physician feels inclined to do something, as he is often asked to do, it is perfectly legitimate to prescribe the use of an alkaline antiseptic gargle, but with the full realization on the part of the physician, even if he does not confide the fact to the family, that he cannot, thereby prevent the disease, though he may put the pharyngeal mucous membrane in a better condition to resist the invasion of pathogenic microorganisms, and consequently to lessen the severity of the inflammatory process in the throat should the disease occur.

Although often advocated, and sometimes used, the impregnation of the atmosphere of the room with antiseptics (phenol) and aromatic oils seems to be of no value in killing the germs or in hastening recovery. Various cresol preparations are recommended for this purpose, but their value is small, and the danger of too much absorption of phenol vapor causing kidney irritation is ever present. The fraudulent assertion that ozone-producing apparatus prevents the growth and dissemination of scarlet fever germs is little less than criminal.

It should not be forgotten that dogs and cats must be excluded from all patients suffering with contagious diseases, and this is especially true of scarlet fever. The doors and windows must be screened from flies, if it is the season for them.

Fatigue and the Hours of Labor.—After stating that the human body is the most efficient machine in existence, Dr. John B. Huber in the *Scientific American*, Jan. 21, 1911, says that the best surety against accident is an alert mind in a virile body, while, on the other hand, the ideal predisposition to accident is an exhausted, rundown, devitalized human machine. There is now no question, he says, of the reality of the relation between fatigue and accidents; in Europe this has been scientifically noted for practically all forms of human activity. Bank clerks make most of their mistakes in the late afternoon; and this appears to be one of the reasons for the comparatively early closing of such institutions, since bankers have found employees' mistakes to be expensive. Everyone now knows that dire calamity results when railway men work continuously too many hours. People should understand also that physicians are not to be overworked; and that rather than this, substitutes or assistants had best be willingly accepted; men who have in their charge the keeping of human health (the most precious thing in existence) must be vouchsafed normal minds in normal bodies. The part-time method of school attendance of children is, doubtless, often unavoidable. Still it has disadvantages; and of these by no means the least is that in the afternoons the minds of children are unfairly taxed, especially when they are made to grapple with such difficult subjects as mathematics, which should be a morning study, when the minds of children are clear and fresh. One here perceives the best of all arguments—from whatever viewpoint one chooses—for the eight-hour day for all forms of labor. For some kinds of labor even eight hours is much too long. It is melancholy to observe that for many employers the prevention of fatigue accidents can be brought about only by making them very expensive. A wise corporation, however selfish, will here instinctively reduce its hours of labor; for reasons of economy, if for no other. After all, it is gratifying to note that the essential parallelism of efficiency and humanity is being increasingly appreciated throughout civilization.

Correction in Salvarsan Technic Article.—In THE JOURNAL, Feb. 25, 1911, page 568, in line 8, instead of 15 c.c. read 25 c.c.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, MARCH 4, 1911

CANCER IN FISH

Comparative pathology is rapidly adding much valuable material for our understanding of the biology of cancer, and we are in a fair way toward the establishment of a distinct branch of research in this direction. It certainly is of much significance that cancers, or growths which greatly resemble them, occur in all animal forms, at least in all vertebrates, and are not the unhappy heritage of the human race exclusively. We are coming to realize that not only our common domestic animals may succumb to cancer, but even the cold-blooded animals sometimes suffer the same fate. Typical malignant growths have been described in birds, reptiles, frogs, turtles, salamanders, eels, and especially in fish. Schmey,¹ who has recently reviewed the literature, has found reports of fifty-nine cases of tumors in fish, not including the large numbers of thyroid tumors described in certain epidemics in fish hatcheries.

At one time it was currently stated that cancer occurred in carnivora, but not in herbivora, which bit of evidence was eagerly seized and freely used by the vegetarians. They forgot, or at least neglected to emphasize, that cancer is a disease of mature life, and that the carnivora live to a ripe old age by cutting down the herbivora in their tender, non-cancerous youth. More abundant observation has shown that the herbivora also may become cancerous if they escape the maws of the carnivora and omnivora until late enough in life to entitle them to malignant disease. Another popular fallacy—that cancer was a disease of civilization and domestication from which wild animals did not suffer—has also been demolished. While wild animals with malignant tumors seldom come under the observation of persons competent to recognize the disease, enough cases have been described to show that free wild animals may develop cancer. Wild animals in captivity frequently show malignant tumors, a rhinoceros having recently succumbed in the Frankfort Zoological Gardens to a typical cancer of the uterus.²

It is the tumors in fish, however, which are just now of particular interest, because of recent observations on

what have seemed to be epidemics of cancer of the thyroid arising in trout and salmon kept under rather artificial conditions in fish hatcheries. Pick and Plehn first made this condition generally known, describing epidemics in which as high as 7 per cent. of the fish developed thyroid growths. Similar epidemics have been studied in this country by Gaylord and by Marine and Lenhart. It is at once apparent that the occurrence of cancer as an epidemic in this way has an important bearing on the vital questions of the contagiousness and the possible parasitic origin of cancer, and it is desirable, therefore, to point out that the cancerous nature of these growths is by no means undisputed. Up to the present time this form of thyroid growth has been observed only in salmon and trout, apparently being peculiar to this variety of fish, just as the multiple epithelial growths of the skin are found only in the carp. The evidences of malignancy are furnished chiefly by the microscopic structure, which shows an invasion of tubules into muscle and bone adjacent to the thyroid, entirely comparable to the infiltration of tissues by cancer cells in human neoplasms; but metastases have not been found, and the behavior of the affected fish is not what one might expect in cancer.

The negative side of the question has been well presented by Marine and Lenhart,³ who bring forward the following facts for consideration: The thyroid enlargement is found in fish kept under unfavorable conditions as to water-supply and crowding, and recovery occurs when the fish are given more freedom even in the same water, or when iodine is supplied in the water; the affected fish show nothing comparable to cancer cachexia, but are large, fat and sluggish, and probably in a condition analogous to cretinism: young fish are more affected than old fish. Furthermore, the microscopic evidence of malignancy, i. e., the invasion of muscle and bone, is not proof of the cancerous nature of the growth in fish as it would be in mammals, for the reason that in fish the thyroid is not normally enclosed within a capsule as it is in the higher animals, but consists of alveoli widely distributed in the areolar space about the ventral aorta. When the fish are kept under conditions which cause a proliferation of thyroid tissue similar to goiter in mammals, the new and enlarged alveoli cause pressure atrophy and replace surrounding structures until we have the picture which has been described as carcinoma of the thyroid. The non-malignant nature of the growth is shown by the fact that after such fish are placed in good water the hyperplasia may cease and a return to relatively normal thyroid tissue takes place. It is, of course, possible that in some cases the non-malignant goiter may become cancerous, just as it does in man, but the arguments of Marine and Lenhart that most of the supposed thyroid cancers of fish merely represent goiters seem well founded.

1. Schmey, Max: Ueber Neubildungen bei Fischen, Frankfurter Ztschr. f. Pathol., 1911, vi, 230.

2. Betke: Frankfurter Ztschr. f. Pathol., 1910, vi, 19.

3. Marine, David, and Lenhart, C. H.: Jour. Exp. Med., 1910, xii, 311.

IMPORTANT RECENT CONTRIBUTIONS TO OUR
KNOWLEDGE OF POLIOMYELITIS

Landsteiner and Popper¹ first demonstrated experimentally the infectious nature of poliomyelitis. They showed that the disease could be produced in monkeys by inoculating them with an emulsion of the cord from a child who had died of poliomyelitis. This was soon confirmed by the work of Flexner and Lewis² who reported that, by using the intracerebral method of inoculation, they were able to transmit the disease to monkeys in series.

Since this pioneer experimental work, much has been added to our knowledge of the experimental disease by workers in this country and in Europe, reference to most of which has been previously made in these pages. Recently there have appeared in *THE JOURNAL* three papers by different workers which may almost be said to be the most important contributions to our knowledge of the disease since the early work above mentioned.

Osgood and Lucas³ show that it is possible to produce typical poliomyelitis in monkeys by the inoculation of a filtrate of the nasopharyngeal mucosa of two monkeys dying without other discoverable infections six weeks, and five and a half months, respectively, after the acute stage of the disease. They were unable to transmit the disease by inoculation of the cord from the same monkeys. From this it follows that the virus of the disease may persist in an infective condition in the nasopharyngeal mucosa of monkeys several months after the acute manifestations of the disease have ceased, but that after the same period it is not demonstrable in the brain and cord.

These observations are of the highest importance and if similar results can be obtained with the nasopharyngeal mucosa from human cases it would seem that our present ideas as to the period of infectivity in recovered cases of the disease will have to be altered. These results may also explain some obscure facts in the epidemiology of the disease.

The most important feature of the paper by Drs. Flexner and Clark,⁴ of the Rockefeller Institute for Medical Research, is in regard to the use of hexamethylenamin in the treatment of the disease. This drug has been used by clinicians in the treatment of poliomyelitis and has been thought by some to be of value. Theoretically, the drug should be of benefit, as it has been shown that after its administration *per os* formaldehyd can be detected in the spinal fluid. Flexner and Clark found that if the drug be given so that it be present in the spinal fluid of a monkey and its administration be continued by mouth, injection of the virus intracerebrally resulted, in some of the animals but not in all,

first, in a prolongation of the period of incubation from six or eight days to twenty-four days; and, next, in the prevention of paralysis.

The authors emphasize the importance of these observations as showing that drug control of the virus in the body is a possibility, but that the successful results reported are in inhibiting infection, but not in restraining an already established infection with the virus. Flexner and Clark also report the demonstration of immunity principles in the serum of a suspected abortive case, and the confirmation of Osgood and Lucas' work as to the persistence of the virus in the nasopharyngeal mucosa of monkeys surviving the acute stage of the disease.

The paper by Anderson and Frost,⁵ of the Hygienic Laboratory, which appears in this issue, deals only with the question of abortive cases. Since the publication of Wickman's⁶ monograph on epidemic poliomyelitis, clinicians have come to believe that cases of the disease occur without subsequent paralysis. The clinical evidence on which such opinion is based is as follows: In outbreaks of the disease cases are encountered showing all gradations in the degree and extent of paralysis. In the same group may be found cases resulting in lasting paralysis; cases of transient paralysis, lasting only a few weeks; other cases in which there is no definite paralysis, but merely muscular weakness of short duration; and finally cases of illness with the symptoms of a general infection accompanied by symptoms indicative of meningeal, spinal or encephalic irritation, but without definite motor disturbances.

Taking advantage of the fact reported by several observers that the serum of persons who have recovered from an attack of poliomyelitis would neutralize the virus of the disease so that when injected into monkeys infection would not take place. Anderson and Frost studied the serum from nine suspected abortive cases of poliomyelitis without paralysis and found that the serum of six (66.7 per cent.) of the nine possessed the same germicidal action against the virus as the serum from a frank case of the disease with extensive paralysis. They thus established the correctness of the clinical diagnosis by confirmation with the biologic test. They also by the demonstration of neutralizing principles in the serum confirmed the clinical diagnosis of a type of poliomyelitis with spastic paralysis.

The importance of the results reported in these three papers can hardly be estimated, but their possible bearing on the epidemiology and control of the disease is obvious. The papers, however, bring out the following points very clearly:

1. The clinical diagnosis of abortive cases of poliomyelitis is a possibility and the fact that such cases have been definitely demonstrated may explain the apparent

1. Landsteiner, K., and Popper, E.: *Zeitschr. d. Immunitätsforsch.*, Orig., 1909, ii, 377.

2. *THE JOURNAL A. M. A.*, Nov. 13, 1909, p. 1639.

3. Osgood, R. B., and Lucas, W. P.: *Transmission Experiments with the Virus of Poliomyelitis*, *THE JOURNAL A. M. A.*, Feb. 18, 1911, p. 495.

4. Flexner, S., and Clark, P. F.: *Experimental Poliomyelitis in Monkeys*, *THE JOURNAL A. M. A.*, Feb. 25, 1911, p. 585.

5. Anderson, J. F., and Frost, W. H.: *Abortive Cases of Poliomyelitis*, *THE JOURNAL A. M. A.*, March 4, 1911, p. 663.

6. Wickman, Ivar: *Beiträge zur Kenntniss der Heine-Medinschen Krankheit*, Berlin, 1907, S. Karger.

immunity of children in households where there are cases with frank paralysis.

2. It has been demonstrated that monkeys, after the acute stage of the disease has passed, are carriers of the infection in the nasopharyngeal mucosa; and the same thing is possible with human beings. If this is proved to be the case, efforts for the control of the disease must take into consideration such carriers. Cases of these two types add serious difficulties to the efforts for the control of poliomyelitis.

3. The results obtained in the use of hexamethylenamin in inhibiting, in a certain proportion of cases, the onset of paralysis suggests the possibility of the use of this drug in serious outbreaks of the disease as a prophylactic.

SUBACUTE INFECTIVE ENDOCARDITIS

Subacute infective endocarditis is a condition long recognizable by clinicians through certain signs and symptoms; the isolation of the infectious agent from the blood in order to clinch the diagnosis is, as yet, a method of examination too seldom used.

The disease is insidious in onset and may develop in any one of several ways. Thus, one patient may suffer from dyspnea, with or without precordial distress, general weakness, emaciation, vague pains, cough, or arthralgia; another may present a condition simulating subacute rheumatic fever and often indistinguishable from it; or a third may have fever, often unexplained by the physical examination.

Clinically, the manifestations of this type of endocardial disease may include: (1) signs of valvular disease, usually present, but occasionally lacking; (2) fever, often slight, at times high and intermittent, always irregular, with or without chills; (3) malaise, gastric disturbances, weakness and emaciation; (4) anemia, usually of marked grade, with a peculiar earthy pallor of the skin; (5) splenomegaly, ostealgia, and arthralgia, joint swellings and, as Libman has pointed out, tenderness over the gladiolus sterni.

Embolic aneurysms are common. Painful erythematous nodules—the *nodosités cutanées éphémères* of the French—are sometimes present. Petechiæ are common and hematuria is not a rare complication.

The disease is more often noted among private patients than in hospital wards. Its duration varies from two months to one and a half years and it is almost invariably fatal.

According to Horder,¹ infective endocarditis is pre-eminently a form of streptococcal disease "for streptococci occur in 66 per cent. of the cases." The organism isolated by him, however, was not the ordinary virulent *Streptococcus pyogenes*, but a form more nearly allied to the more saprophytic streptococci of the alimentary tract—*Streptococcus salivarius*, etc.

More recently, Rosenow,² and Libman and Celler³ have studied the blood of patients with subacute infectious endocarditis and have isolated organisms the presence of which they consider of diagnostic import.

In thirty-six of the forty-three cases studied by Libman and Celler blood-cultures were made. In thirty-five of these they found atypical "endocarditis cocci" which were Gram-positive, round, ovoid or bacillary in form, occurring in clusters, in pairs or in chains, never encapsulated. These cocci are smaller than ordinary streptococci or pneumococci and grow more feebly. In the original cultures from the blood, growth was noted first after forty-eight hours, rarely as early as twenty-four hours, often not until after five or six days. On agar, a feeble translucent growth appears, adherent to the surface of the medium, a characteristic lost in subcultures. "On blood-agar plates a definite clear zone is sometimes, though rarely, seen, usually taking two to four days to develop. In transplantations this is lost. Colonies in the original plates are usually white in color, with or without a green or an opaque zone about them. In subsequent cultures on blood-plates three types of growth are seen. There may be a production of green pigment, there may be a moist white growth, or a dry, almost colorless, very slight growth." They are not dissolved by bile. About one-third of the strains ferment inulin. All strains precipitate or "whiten" serum-glucose agar.

The "endocarditis cocci" are not very pathogenic for mice, though peritonitis and endocarditis have been produced by them.

The attenuated nature of these atypical cocci—whether they be pneumococci, as Rosenow and Billings⁴ regard them, or streptococci, as Libman and Celler and Schottmüller⁵ class them—agrees with the course of the disease and may serve to explain several of its striking features, including: (a) the chronicity in many cases and the latency of the malady in others; (b) the slight grade or entire absence of leukocytosis often seen; (c) the afebrile periods which are common and the occasional absence of fever altogether; (d) the absence of suppuration in the infarcts; (e) the enormous numbers of the cocci that may be present in the blood-stream without causing grave symptoms.

These "endocarditis cocci" do not appear to be specific, though they have never been found in other conditions. The discovery of them gave rise to the hope of an antiserum or of a vaccine therapy, but so far treatment along such lines has been without favorable result. In fact, according to Rosenow, vaccine therapy may even prove harmful. Now that a more accurate knowledge of the disease has been reached, and the etiology cleared up, the dawn of a rational therapy would seem to be near.

2. Rosenow: Jour. Infect. Dis., 1909, vi, 224.

3. Libman and Celler: Am. Jour. Med. Sc., 1910, cxl, 516.

4. Billings, Frank: Arch. Int. Med., 1909, iv, 409.

5. Schottmüller, H.: München. med. Wchnschr., 1910, lvii, 617; abstr. in THE JOURNAL A. M. A., May 14, 1910, p. 1658.

1. Horder: Quart. Jour. Med., 1909, ii, 289.

THE TESTIMONIAL

It is reported that United States District Attorney Sims has obtained a ruling from the federal courts barring out testimonials as evidence in those cases in which the question of the curative properties of "patent medicines" are before the courts. It is gratifying to learn that the courts have at last taken a stand on this question. Week in and week out, for years past, *THE JOURNAL* has persistently and consistently maintained that testimonials from laymen regarding the curative value of medicine or medical appliances are intrinsically worthless and scientifically valueless. In taking this attitude, it has not been assumed that such testimonials are of necessity fraudulent in their origin. We believe that, at least during the last four or five years, a large proportion of testimonials published by "patent medicine" houses and quacks of various denominations have been genuine as documents; that is to say, a large proportion have been written in good faith by individuals who really believed, at the time they wrote these tributes, that they had received benefit from the drug or appliance whose praises they sang.

The reason for this condition of affairs is perfectly apparent to physicians, but not so evident to the public. Every physician knows that a large proportion of those who are sick, or who think they are sick, will recover whether they receive treatment or not. The average layman, however, has but little faith in the healing power of Nature, and persists in ascribing the "cure" to whatever artificial means he may have employed to bring about relief. In other words, few men without scientific training are able to discriminate between a mere relation of sequence in time and one of cause and effect. It is this very human weakness to give credit to human agencies for what rightly belongs to Nature, that is chiefly responsible for the testimonial—whether the testimonial be for a "patent medicine," for a worthless electrical device or for the various forms of "absent treatment."

No man in the United States has had a better opportunity of determining the worth, or worthlessness, of testimonials than has the assistant attorney-general to the postmaster-general, Judge R. P. Goodwin. On Judge Goodwin, for some years past, has devolved the onerous task of passing on the evidence submitted by post-office inspectors in the numberless cases of fraud perpetrated on the public by various promoters, especially by nostrum vendors and quacks. Judge Goodwin's reports have been very largely the basis on which the postmaster-general has issued the fraud orders in such cases. This is what Judge Goodwin says regarding testimonials:

"Speaking generally, it may be said that in all my experience in this office never has a medical concern, no matter how fraudulent its methods or worthless its treatment, been unable to produce an almost unlimited number of these so-called testimonial letters."

It is rather surprising that testimonials have not been debarred as evidence long ago.

Current Comment

MORE DONATIONS FOR MEDICAL EDUCATION

It is pleasing to note that no one section of the country is receiving all of the gifts and appropriations for the improvement of medical education. From Oregon comes a report that the legislature has appropriated \$30,000 for the department of medicine of the University of Oregon, to be used for the improvement of the college building, for laboratory equipment and for current expenses. In addition, the regents of the university have made an appropriation from the general funds of the university to pay the salaries of full-time professors in anatomy and physiology. From Tennessee comes a report that Vanderbilt University has just received a donation of \$300,000, half of which came from the General Education Board as an addition to the endowment fund of the university; the remainder was a special donation from Mr. W. K. Vanderbilt for the purchase of the campus of Peabody Normal College, a sixteen-acre tract containing five or six buildings. These buildings are to be rearranged for the medical and dental departments of the university. The receipt of this money has made it possible for Vanderbilt University hereafter to assume full responsibility, financially and otherwise, for its medical department, and steps are now being taken to establish a university hospital. These developments in the extreme Northwest and in the South not only guarantee the continuance of medical education at the universities named, but also provide stronger and better-equipped medical colleges in sections of the country where, at the present time, their influence on educational standards will be particularly helpful.

NATIONAL TUBERCULOSIS DAY

The observance of National Tuberculosis Day in the churches all over the country on or about April 30 will be similar to that of Tuberculosis Sunday last year. This plan has been arranged by the National Association for the Study and Prevention of Tuberculosis. Instead of asking that the churches give the tuberculosis cause a special Sunday service, at which the subject of tuberculosis and its prevention can be discussed, it is requested that this service be held either on April 30 or on any day near that date. The idea is to have the subject discussed in all the churches at about the same time. The national association is attempting to arouse the churches to take further interest in the subject by soliciting their cooperation in the collection of statistics on tuberculosis. It has planned to distribute from the national office and from the headquarters of the 450 state or local antituberculosis associations millions of circulars. It is stated that the national association will, also, during the next three months, display on bill-boards throughout the country 20,000 educational posters. Free space on bill-boards in many parts of the country has been donated, as well as the printing of the posters. The posters show how fresh air,

good food and rest cure tuberculosis; how bad air, overwork and closed windows lead to tuberculosis; and how the careless consumptive menaces the health of his family by his careless habits.

REAL TALENT WASTED IN A NARROW FIELD

A country dairyman in Louisiana has given indications that he possesses talent of an order that seems to be in great demand among many modern business organizations. A law prohibiting the sale of watered milk threatened to interfere seriously with the vested rights, customs and emoluments of an ancient and honorable business. The canny dairyman at once surmounted the difficulty by a ruse that would delight the heart of a modern trust lawyer. "Surely they can't prevent me from selling people what they want," said he, and so when his attention was called to his little oversight in not complying with the law he answered that he sold pure milk to the customers who requested pure milk and charged them forty cents a gallon for it, but to those who preferred watered milk he sold a fluid (percentage of H₂O not stated) for which he charged twenty-five cents a gallon. Could anything be simpler? Was anyone cheated? Not according to the philosophy of our friend the dairyman who, like the Irish gentleman, probably thought, "What's the law, betune frinds, anyway?" The state board of health, however, will proceed with the prosecution.

PUCK ON ANIMAL EXPERIMENTS

Not all comic papers are silly, neither are all editors of such papers devoid of logic and common sense. After the unfair and ignorant diatribes of *Life* on animal experimentation, the cartoon in last week's issue of *Puck* is distinctly encouraging and refreshing. The artist has portrayed a venerable scientist standing by his laboratory table, on which is strapped a rabbit. The assistant, with ether cone in hand, is ready to administer the merciful anesthetic. On the one hand a crowd of sentimental antivivisectionists, well-fed, well-clothed and healthy, are crying "For Mercy's Sake, Stop!" On the other hand, a shadowy throng of sufferers, the maimed, the crippled, the sick and the dying are groaning "For Humanity's Sake, Go On!" The scientist, looking from one to the other, is evidently weighing in his mind the arguments for and against animal experimentation. *Puck's* cartoon, making an appeal to the reason and the intellect, is a distinct contrast to the frantic efforts of *Life*, which have appealed only to the ignorant, the emotional and the sentimental. In behalf of suffering humanity, we extend our thanks to *Puck*. May his shadow (and his circulation) never grow less.

Eyestrain and Neurasthenia.—The man or woman who leads a life of mental ease and muscular exercise, or the one who has a well-balanced nervous system, or a large reserve of vital energy, will probably withstand a nerve waste which in another individual leads to neurasthenic symptoms. It is possible that in the ages when the simple life was the rule, peripheral irritation and nerve waste, such as eyestrain produces, made little or no impression on the individual; but who can doubt its bad effect in this twentieth century of turmoil and worry?—E. Clarke in the *Practitioner*.

Medical News

ARKANSAS

Report of Sanatorium.—The new Arkansas Tuberculosis Sanatorium, Fayetteville, is practically full. The limit of the accommodation is seventy-four, after which patients can be received only when vacancies occur.

Elections.—At the annual meeting of the Sebastian County Medical Society, held in Fort Smith, Dr. John C. Amis was elected president; Dr. Samuel J. Ozment, vice-president; Dr. Clark S. Wood, secretary; Dr. Charles W. Garrison, treasurer, and Dr. St. Cloud Cooper, censor, all of Fort Smith.—Washington County Medical Society has elected the following officers: president, Dr. P. L. Hathcock, Lincoln; vice-president, Dr. Andrew J. Harrison, Spring Valley; secretary, Dr. Nina V. Hardin, Fayetteville; treasurer, Dr. Andrew S. Gregg, Fayetteville; delegate to the state society, Dr. Thomas W. Blackburn, Canehill, and alternate, Dr. Edward F. Ellis, Fayetteville.—At the annual meeting of Greene County Medical Society, held in Paragould, January 5, the following officers were elected: president, Dr. Jones H. Lamb, Beech Grove; vice-presidents, Drs. E. L. Kennedy, Marmaduke; George T. Hopkins, Paragould; Felix M. Scott, Paragould; secretary-treasurer, Dr. Olive A. C. Wilson, Paragould; censors, Drs. Henry N. Dickson, Paragould; W. R. Owens, Paragould, and R. Edward Bradsher, Marmaduke; delegate to the state society, Dr. Thaddeus Cothren, Walcott, and alternates, Dr. George T. Hopkins, Paragould, and R. Edward Bradsher, Marmaduke.—Phillips County Medical Society, at its annual meeting in Helena, elected the following officers: president, Dr. Labrun Hall, Turner; vice-president, Dr. Albert A. Hornor, Helena; secretary-treasurer, Dr. M. Fink, Helena; censors, Dr. William C. King and James B. Ellis, Helena; delegate to the state society, Dr. J. W. Price, Marvell.

CALIFORNIA

Warrants Issued for Chinese Doctors.—Fourteen local Chinese practitioners of Los Angeles, charged with practicing medicine without a state license, were served with warrants, January 31. The charges were preferred by the special agent of the state medical society.

Society Meeting.—At the annual meeting of Santa Barbara County Medical Society, held January 16, the following officers were elected: president, Dr. Benjamin Bakewell, Santa Barbara; vice-presidents, Drs. William B. Cummane, Santa Barbara; C. C. Park, Santa Barbara, and William T. Lucas, Santa Maria; secretary-treasurer, Dr. Thomas A. Stoddard, Santa Barbara.

COLORADO

Hospital Completed.—The east wing of the Denver County Hospital has been completed at a cost of \$103,496.

Open-Air Rooms for School Building.—An open-air room will be constructed for the use of children suffering from tuberculosis in all new school buildings of Denver, and in all additions to existing school buildings.

School for Defective Children.—The board of education of Denver has assigned one of the school buildings for the especial use of pupils, who, for any reason, are three grades behind children of corresponding age. A relatively large number of teachers, and those of special qualifications, will be assigned to this school, which will receive pupils from any part of the county.

Nominated for State Board.—Governor Shaffroth, at an executive session of the senate, submitted the names of Dr. Sherman Williams, Denver, and Jacob C. Chipman, Sterling, and Mr. E. F. Trunk, a druggist of Denver, as members of the State Board of Health.—It is announced that the legislative committee of the state medical society will go before the committees on apportionment of both the house and senate and file objections to the appointment of Mr. Trunk as a member of the board. He is said to be willing to retire from the board on his appointment as pure food commissioner.

DELAWARE

Resident Physician Cleared.—After the investigation into the alleged death of two patients of the Delaware Hospital from poisoning by the administration of bichlorid of mercury instead of calomel, it was found that there was no trace of poison in the stomachs of the deceased, and a verdict was rendered that the deaths were due to natural causes.

Personal.—Dr. Henry W. Briggs, Wilmington, has succeeded Dr. Joseph W. Bastian, resigned, as coroner's physician.—At

the annual meeting of the Physicians and Surgeons Hospital, Wilmington, January 10, Dr. Joseph P. Pyle was elected president; Dr. Josephine W. DeLacour, vice-president; Dr. Thomas H. Phillips, secretary, and Dr. Smith Cooper, treasurer.

Society Meeting.—At the annual meeting of the New Castle County Medical Society, held in Wilmington, the following officers were elected: president, Dr. Henry W. Briggs; vice-president, Dr. James A. Draper; secretary, Dr. Albert Robin; treasurer, Dr. William H. Kraemer, all of Wilmington, and delegates to the state medical society, Drs. Harold L. Springer, Wilmington, Francis L. Springer, Newport; Henry W. Briggs, William H. Kraemer, Frank Belville, Delaware City, and Henry J. Stubbs, Wilmington.

GEORGIA

State Sanatorium to Open.—It is announced that the State Tuberculosis Sanatorium, Alto, will be opened March 1. A sufficient number of applications have already been received to more than half fill the institution. Dr. Edson W. Glidden, formerly of Wallingford, Conn., is superintendent of the sanatorium.

New Medical Association Organized.—The Jefferson County Medical Association was organized at Louisville, February 7, with the aid of Dr. Wyman W. Pilcher, Warrenton, counselor of the state medical association. Dr. James W. Pilcher, Stellarville, was elected president; Dr. G. F. Carpenter, Wrens, secretary; Dr. Pierce Hubert, Louisville, delegate to the state association, and Dr. Joshua R. Beall, Blythe, delegate to the Tenth District Medical Association.

ILLINOIS

Personal.—Dr. Guy G. Dowdall, Chicago, has been appointed chief surgeon of the Illinois Central System, vice Dr. John E. Owens.—Dr. William H. Holmes, Springfield, state bacteriologist, has resigned to enter the service of the State Board of Administration as assistant physician at the Kankakee State Hospital.—Dr. Dallas B. Phemister, Chicago, has returned from Europe.

Meeting of Medical Historians.—The third meeting of the Society of Medical History of Chicago was held February 24, when Dr. Otho B. Will, Peoria, the guest of honor, delivered an address on "A Chapter on the Pioneer Period of Medicine in Illinois." Preceding the meeting there was an informal exhibition of autographic material, participated in by many members of the society.

For a Fifth, a Clinical, Year.—Senate Bill 235, introduced February 23 at the instance of the State Board of Health, provides that when a medical college has a five years' course, the fifth year clinical, its students may be admitted to examination at the end of the fourth year and, if they pass, may receive a limited license good for eighteen months, entitling them to practice in a hospital. On graduation, the student will receive a permanent license without further examination. The bill also aims to give the State Board of Health jurisdiction, in the matter of revocation of certificates, over all issued since 1877.

KANSAS

Election.—At the biennial meeting of the Northwest Kansas Medical Society, held in Topeka, February 9, Dr. Mervin T. Sudler, Lawrence, was elected president; Dr. E. James Blair, Lawrence, vice-president; Dr. Louis V. Sams, Topeka, secretary-treasurer.—Leavenworth County Medical Society, at its annual meeting elected the following officers: Dr. Harley J. Stacey, president; Dr. Charles J. McGee, vice-president; Dr. Jacob L. Everhardy, secretary-treasurer, and Dr. J. Waldo Risdon, delegate to the state medical society, all of Leavenworth.—Harvey County Medical Society, at its annual meeting in Newton, elected Dr. Richard S. Haury, president; Dr. Max Miller, vice-president, and Dr. Frank L. Abbey, secretary-treasurer, all of Newton.

KENTUCKY

More Money for Hazelwood.—The subscription fund to provide quarters for more patients at the Association Sanatorium, Hazelwood, near Louisville, has been growing steadily, and now amounts to more than \$10,000. The fund has already permitted the erection of one additional building.

District Nurses Work.—The district nurse work of the King's Daughters in their quarterly report shows 2,487 visits made to various Louisville families in the three months ended January 31. A new feature of the work recently inaugurated is the attendance of one of the district nurses on the session

of the Juvenile Court on each Friday. During the past three months the children of this court have been given medical attention.

Tuberculous School Children.—Superintendent E. O. Holland of the Louisville public schools, is compiling statistics as to the number of school children suffering from tuberculosis and the number that are truant and subnormal, with a view of segregating them from other pupils. From reports he has already received from principals and teachers it is believed that such large numbers will be found in the public schools that several buildings will have to be provided for them. Twenty-five suspected cases of tuberculosis have been reported from two buildings alone. To overcome the crowding of some schools a number of grades have been assigned for afternoon study. He reports that forty of the fifty-six buildings of the city are not properly ventilated, and that in many of the buildings two pupils sit in a seat made for one. It is proposed to stimulate the mental activity of the abnormal pupils with the kind of manual training work that will most fit their individual needs. The method of dealing with the truant and semi-incorrigible pupils has not yet been determined, but it has been agreed by the Board of Education that something must be done to segregate them from other children.

LOUISIANA

Hookworm at State University.—Following the investigation made by Dr. A. S. J. Hyde, of the Hookworm Commission, it is announced that 25 per cent. of the students thus far examined at the state university are infected with hookworm.

New Hospital Opened.—The formal opening of the Presbyterian Hospital, New Orleans, occurred February 4. Addresses were made by the mayor, the president of the board of managers, the president of the parish medical society, and others. The free clinic of the hospital is located at 730 Baronne Street, and is open to the worthy poor, irrespective of religious denomination, not only by day but from 7 to 9 p. m.

Parish Society Meeting.—At the annual meeting of the Iberville Parish Medical Society, held in Plaquemine, January 31, the following officers were elected: president, Dr. Boote O. LeBlanc, Saint Gabriel; vice-president, Dr. C. A. Darcantel, Whitecastle; secretary-treasurer, Dr. Adrian A. Landry, Plaquemine; censors, Drs. Arthur A. Allain, Bayou Goula, and Rome Martinez; delegate to the state medical society, Dr. W. Glendower Owen, White Castle.

MARYLAND

Make Appropriation for Sewers.—The citizens of Easton have voted to spend \$40,000 for sewerage and drainage system.

Personal.—Dr. Richard C. Massenburg, Towson, has entirely recovered from his recent illness.—Dr. Josephine A. Wright, assistant superintendent of the Eudowood Sanatorium for Consumptives, near Baltimore, has resigned and will practice in Towson.

Diphtheria in Johns Hopkins Hospital.—On account of an outbreak of diphtheria among patients, nurses and physicians in Johns Hopkins Hospital, where about 35 cases are reported, the public wards have been closed to students and the public, and the medical school has also been officially closed until further orders. Those affected have been isolated in the two wards where the first cases occurred.

Academic Day Exercises.—At the Academic Day Exercises of Johns Hopkins University, February 23, Hon. James Bryce, ambassador from Great Britain, the chief speaker, was given the degree of LL.D., and a portrait medallion of Dr. William H. Welch by Brenn of New York, and an oil painting of Dr. William H. Howell were exhibited and presented during the exercises. The Homewood Fund for the removal of the university to a new site in the suburbs now amounts to \$1,200,000.

Banquet to Professor Howell.—Dr. William H. Howell of Johns Hopkins Medical School, was the guest of honor at a banquet, February 20, when a portrait of him by Cecilia Beaux, was presented to the university by Dr. Reid Hunt of Washington, and was accepted by the presiding officer, President Ira Remsen of the university. Dr. William H. Welch spoke of the valuable work done by Dr. Howell; Hon. John C. Rose, judge of the United States circuit court, spoke of him as a citizen; and Drs. Samuel J. Meltzer, New York City, and W. W. Willoughby on his work as a teacher. President Remsen stated that he had never done anything more important for the school than when he persuaded Dr. Howell, who had been offered an important position in another university, to remain with his alma mater.

Baltimore

Members of Advisory Council.—The following have been elected medical representatives of the Alumni Advisory Council of the University of Maryland: Drs. Charles E. Sadtler, Joseph W. Holland, Harry Adler, B. Merrill Hopkinson, Eugene F. Cordell, Nathan Winslow, Albert L. Wilkinson, J. Clement Clark, and James D. Iglehart.

Personal.—Dr. Henry M. Hurd has resigned the superintendency of Johns Hopkins Hospital, after having served twenty-two years. He will remain as secretary and advisor of the board of trustees. Dr. Winford H. Smith, general medical superintendent of Bellevue and Allied Hospitals, New York City, has been elected as Dr. Hurd's successor.—Dr. Summersfield B. Bond is ill in University Hospital with carcinoma of the liver and pancreas.—Dr. J. Hall Pleasants has been elected a member of the Alumni Council of Johns Hopkins University.

MASSACHUSETTS

Influenza in Worcester.—During January, it is stated that approximately 3,000 cases of epidemic influenza were reported in Worcester, with one death.

Personal.—Dr. Owen Copp, Boston, executive officer of the State Board of Insanity for twelve years, has resigned to assume charge of the Pennsylvania Hospital for the Insane, Philadelphia.—Dr. Alfred O. Hitchcock, chairman of the board of health, Fitchburg, has resigned and his duties have been temporarily assumed by Dr. Dwight S. Woodworth.—Dr. Paul Carson, port physician at Boston, has been placed in charge of the city health department's division of child hygiene and school medical inspection. Dr. William M. Gay, assistant port physician, is in temporary charge of the quarantine station.

Dental Dispensary for Children.—The Forsyth Dispensary for Children, incorporated last year by special act of the Massachusetts Legislature, is to be located at Hemenway Street near Huntington Ave., Boston, and will be one of the notable group of buildings which includes Harvard Medical School. The land, building, and a maintenance fund of \$1,000,000 are the gift of John Hamilton and Thomas Alexander Forsyth in memory of their brothers, James Bennett and Thomas Henry Forsyth. The site on the Fenway consists of 51,000 square feet. The building is to be three stories and two partial mezzanine floors in height. The basement will be occupied by the general waiting room for children, janitor's-rooms, boiler and engine rooms, etc.; the first floor will have a lecture room seating 250, which is intended to be used for popular lectures on dental hygiene; a room for visiting dentists, museum and research laboratory, and founders' room, and rooms for anesthesia and extracting, with male and female wards. The second floor will be used entirely for the infirmary, about which as a nucleus and subservient to the requirements of which the rest of the building is constructed. There will be in this infirmary accommodation for 108 operating chairs with waiting, x-ray and reserve rooms.

MINNESOTA

New Hospital.—Plans have been completed for the hospital building which Dr. George G. Eitel is to build at Fourteenth and Willow Street, Minneapolis. The building is to be five stories in height with high basement and is expected to cost \$150,000.

Medical Society Meetings.—The Rice County Medical Association, at its annual meeting, held in Northfield, elected the following officers: president, Dr. Arthur C. Rogers, Faribault (reelected); vice-presidents, Drs. Warren Wilson, Northfield, and William H. Rumpf, Faribault; secretary-treasurer, Dr. Frederick U. Davis, Faribault; delegate to the state society, Dr. David M. Strang, Northfield; and alternate, Dr. Isaac F. Seeley, Northfield.—Waseca County Medical Society, at its annual meeting, elected the following officers: president, Dr. Alexander J. Rudolf, Waseca; vice-president, Dr. William M. Cory, Waterville; secretary-treasurer, Dr. Henry G. Blanchard, Waseca; censors, Drs. Frederick A. Swartwood, Waseca; W. A. Melliche, Janesville; and Henry O. Hagen, New Richland; delegate to the state association, Dr. James F. Lynn, Waseca; and alternate, Dr. Edwin J. Batchelder, New Richmond.—At the annual meeting of the Upper Mississippi Valley Medical Association, held in Little Falls, Dr. Paul E. Kenyon, Wadena, was elected president; Dr. M. A. Desmond, Akely, vice-president; Dr. George H. Lowthian, Akely, secretary; Dr. William Reid, Deerwood, treasurer; Dr. Walter Courtney, Brainerd, censor; Dr. Frank H. Knickerbocker, Staples, delegate to the state association; and Dr. J. Burton Holst, Little Falls, alternate.

MISSOURI

Physicians Ignore Order.—Nine physicians of St. Joseph, who had failed to observe the ordinance requiring them to report cases of communicable diseases, have been cited to appear before the local board of health.

Bequest.—By the will of the late Dr. Ottoway T. Fields, a wealthy colored physician who died March 1, 1910, his medical library, surgical instruments and office appliances are bequeathed to Walden University, Nashville, Tenn., and \$1,000 is devised to Provident Hospital, St. Louis.

St. Louis

Section Officers Elect.—At the meeting of the Oto-Laryngological Section of the St. Louis Medical Society, January 25, Dr. Albert F. Koetter was elected chairman; Dr. Max A. Goldstein, vice-chairman; Dr. Eugene T. Senseney, secretary-treasurer, and Dr. Frederick C. Simon, editor.

Social Hygiene Society Meeting.—At a meeting of the St. Louis Society of Sanitary and Moral Prophylaxis, held January 21, the following physicians were elected to office: president, Dr. George Homan; treasurer, Dr. Archer O'Reilly, and members of the executive committee, Drs. Francis L. Bishop, John Green, Jr., Carl J. Luyties, Walter H. Fuchs, Frederick K. Taussig and Bransford Lewis.

NEW YORK

New Society.—The Buffalo Society of Sanitary and Moral Prophylaxis has been organized, and the following officers have been elected: president, Dr. Lucien Howe; vice-president, George A. Lewis; secretary, Ada M. Gates; and treasurer, A. M. Cotton.

Judgment Against Milkmen.—The Supreme Court of Delhi is said to have rendered a judgment of \$16,000 against Fishhandler and Abrams of New York for violating the pure milk law by shipping 836 cans of adulterated milk. This is one of the largest judgments ever secured for such a violation.

The Toll of Tuberculosis.—In connection with the tuberculosis exhibit at Ithaca, conducted by the New York State Department of Health and the State Charities' Association, Prof. Walter F. Wilcox, the Cornell statistician, placed the monetary loss to the State of New York from deaths by tuberculosis in 1910 at \$64,000,000. He stated that one-ninth of the deaths in the state for last year were due to tuberculosis. Mr. Livingston Farrand, New York City, made a plea for more rural hospitals. Statistics gathered by the State Department for the last four years showed that the death-rate from tuberculosis is decreasing about three times as rapidly in the cities as in the rural districts.

Tuberculosis in Prisons.—Dr. Julius B. Ransom of Clinton prison, Dannemora, N. Y., in an address before the Society of Medical Jurisprudence at the New York Academy of Medicine, on Feb. 13, stated that from 40 to 60 per cent. of all deaths in the prisons of the world are due to tuberculosis and this percentage at times reaches 80 per cent. In this country more than one hundred thousand prisoners are annually discharged to the general community and more than 16 per cent. of these are infected with tuberculosis. Dr. Ransom gave statistics showing that of 46,129 prisoners in the Atlantic and middle west states only 125 are tuberculous, while of 4,624 in five southern states only 125 are tuberculous, and of the 8,540 in the western states only 118. This difference was due to the fact that in the South and West prisoners were put to work in the open air, whereas dust-raising industries in the eastern prisons were conducive to the increase of tuberculosis. Dr. Ransom urged the necessity for a systematic campaign for the treatment of the tuberculous inmates of prisons, jails and detention and charity institutions, advocating special institutions for treatment and the providing of outdoor work.

New York City

Hospitals for Measles.—A seven-story hospital, exclusively for the treatment of measles, with a capacity for 325 patients is to be built this summer at a cost of \$275,000.

Bequests.—By the will of the late Mrs. Charlotte Garretson of New Hyde Park, L. I., Presbyterian Hospital is bequeathed \$7,500 and the Flushing Hospital \$10,000.—The will of Mrs. Caroline Lawrence leaves \$20,000 to St. John's Hospital, Yonkers.

Milk Commission Asks Help.—The Medical Society of the County of New York has been appealed to by the Milk Commission to help the certified milk movement by recommending the use of certified milk in their practice. Accompanying the appeal is a description of the conditions under which certified milk is produced.

To Insane Hospital Instead of Penitentiary.—Dr. Ernest H. F. Pirkner, who conducted a so-called sanatorium in West Seventy-Ninth Street, and was recently indicted before the grand jury, tried and found guilty, and was about to have been sentenced to imprisonment in the penitentiary, became violently insane, and has been committed to the Morris Plains Hospital.

Personal.—Dr. Edward G. Janeway has been appointed head of the medical staff of the Presbyterian Hospital, vice Dr. W. Gilman Thompson.—Dr. Simon Flexner of the Rockefeller Institute for Medical Research will deliver the Harben Lectures of the Royal Institute of Public Health of London for 1912.—Dr. Fred J. Levisenr has been appointed consulting dermatologist to the Montefiore Home.

Lectures at Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital announce a course of lectures in the out-patient hall of the hospital every Wednesday afternoon, beginning on March 1 at 4:15 o'clock and continuing until April 26. Dr. L. Duncan Bulkley will deliver the first seven of these lectures and Dr. W. Seaman Bainbridge the last two. The subjects will be eczema, acne, psoriasis, syphilis and cancer.

City Provides Milk Stations.—The Sinking Fund Commission has provided for the distribution of pasteurized milk by the city at cost for the use of infants of poor families. Premises will be rented for the establishment of seven stations in Brooklyn, four in Manhattan and one in the Bronx. The city will employ six medical inspectors, ten nurses and fifteen assistants. The budget contains an item of \$40,000 to defray the cost of this work.

The Practice of Midwifery.—At the meeting of the Section on Obstetrics and Gynecology of the New York Academy of Medicine, February 23, Dr. J. Clifton Edgar presented a preamble and resolution, which were unanimously adopted, setting forth that, as 50 per cent. of the births in the large cities of this country are attended by midwives; as the profession of midwifery in the United States is followed by ignorant, untrained and incompetent women; as some of the results of this practice are unnecessary blindness, mental and physical degeneracy and deaths of infants, and unnecessary suffering, invalidism and deaths of mothers; and, as although both physicians and nurses are given instructions in the training and care of childbearing women and new-born infants, provisions are made for the adequate training of midwives, the Section recommends that measures be taken in New York to secure new legislation which shall provide for the training, registration, licensure, supervision, regulation and control of women engaged in the practice of midwifery.

OREGON

Society Meetings.—Physicians of the county met recently at Wallowa Hospital, Wallowa, and organized the Wallowa County Medical Association, and elected the following officers: president, Dr. James H. Thompson, Joseph; vice-president, Dr. Clyde T. Hockett, Enterprise, and secretary-treasurer, Dr. Ralph M. Erwin, Joseph.—At a meeting of the Polk and Yamhill County Medical Association, held in McMinnville, Dr. Asa B. Starbuck was elected president, and Dr. Lenthal A. Bollman, secretary-treasurer, both of Dallas.

Medical College Gets Appropriation.—It is reported that the Oregon legislature has made a special appropriation of \$30,000 for the Department of Medicine of the University of Oregon, to be expended for the improvement of the college building, laboratory equipment and current expenses. The regents of the university have made an additional appropriation from the general fund to cover the salaries of two full-time professors. These are Dr. David M. Roberg, who has been secured for the chair of anatomy, and Dr. John McLaren for the chair of physiology.

Personal.—Dr. Fred W. Vincent, Pendleton, who has been confined to the house on account of a fractured rib, is convalescent.—Drs. Eldred B. and Clara Waffle, Portland, started for Europe, January 17.—The office of superintendent of the Eastern Oregon Insane Asylum, which will not be ready to receive patients for a year and a half, and of which the incumbent was Dr. James D. Plamondon, Athena, has been declared vacant.—Dr. Herbert S. Nichols, Portland, has been appointed a member of the Oregon State Medical Board, vice the late Dr. Osmond Royal.—Following a hearing conducted by the Oregon State Board of Medical Examiners, Dr. William T. Eisen, Portland, charged with having procured an unlawful operation which resulted in the death of Mrs. Anna Foleen, the license of Dr. Eisen to practice medicine is said to have been revoked.

PENNSYLVANIA

Personal.—Dr. John B. Chapin, for many years chief of the Insane Department of the Pennsylvania Hospital, Philadelphia, has retired from active duty.

Gift to Tuberculosis League.—Henry Phipps, the first contributor to the Tuberculosis League of Pittsburg, has donated \$25,000 to the league on the condition that \$150,000 be raised by the members; \$118,000 of this amount has already been secured, leaving a balance of only \$32,000 to complete the amount.

Election.—At the meeting of the Pottsville Medical Society, February 9, the following officers were elected and installed: president, Dr. George R. S. Corson; vice-presidents, Drs. Merchant C. Householder and Thomas W. Swalm; secretary-treasurer, Dr. John J. Moore, and directors, Drs. George H. Boone, Patrick H. O'Hara and Joseph G. Kramer.

Philadelphia

Morgan Memorial Committee.—The proposed Dr. John Morgan Memorial at the University of Pennsylvania is in charge of Provost Edgar F. Smith, and Drs. S. Weir Mitchell, William Pepper, Jr., Clarence P. Franklin and Swithin Chandler, chairman.

Babies' Club Formed.—For the instruction of mothers in the care of infants and as a further prevention of infant mortality, the Public Health Committee of the Civic Club, has started a "Babies' Club" which meets weekly at the Southwark Neighborhood House. The lectures are really practical demonstrations by the nurse in charge and there is a room fitted up with everything necessary, weighing scales, bath tub and simple remedies.

Meeting Hall Referendum.—As a result of the recent postal referendum on the future place of meeting for the Philadelphia County Medical Society, it has been announced that there were 408 votes in favor of continuing the meetings at the College of Physicians and 197 favoring removal to a more centrally located hall. At the business meeting of the society held on January 18, it was finally settled in favor of the College of Physicians.

Fined in Measles Case.—Accused of having violated the health laws of the state, John L. Worshing, purchasing agent for the Huntingdon and Broad Top Railroad Co., is said to have pleaded guilty, February 2, and to have been fined \$20 and costs. The charge against Mr. Worshing was that of removing his son, who was suffering with measles, from the Presbyterian Hospital to his home in Huntingdon before the period of incubation had passed, thereby exposing other passengers to contagion.

Hospital Inquiry Urged.—At the meeting of the Philadelphia County Medical Society on January 18, a resolution was adopted to investigate appropriations to hospitals not under state control. The resolution urges the governor to appoint a joint committee, consisting of three members of the senate, three members of the house, a member of the state board of charities, two licensed physicians, who are not connected with any institution receiving state aid, and a member of the bar, who has served as a manager of a hospital.

Personal.—Dr. George W. Mercher, chief resident physician of the Germantown Hospital is recovering from an operation for appendicitis.—Provost Edgar F. Smith, of the University of Pennsylvania, has been appointed a member of the college and university council in place of C. C. Harrison, resigned.—Dr. Adolph Feldstein, the first resident physician of the Jewish Hospital and for nearly fifty years one of the physicians to the institution, celebrated his seventieth birthday anniversary.—Drs. E. A. McLain and J. E. Murphy have been appointed physicians to the Insane Department of the Philadelphia General Hospital.

Popular Lectures on Tuberculosis.—The popular course of lectures at Logan Hall, University of Pennsylvania campus in charge of a committee of the faculty consisting of Dr. Charles K. Mills, chairman; Dr. Allen J. Smith, dean of the Medical School, and Dr. A. N. Richards, have been most successful. The lecture February 3, was "Tuberculosis from the Sociological Point of View" and one of its main points was that society must remove the ignorant and evil conditions which foster tuberculosis and that the campaign against it is one of education.

Annual Elections.—The following officers were elected for the year 1911 at the recent meeting of the Academy of Medicine: president, Dr. Robert G. LeConte; vice-presidents, Drs. Gwilym G. Davis and John H. Gibbon; treasurer, Dr. Edward B. Hodge; secretary, Dr. Charles F. Mitchell; recorder, Dr.

John H. Jopson, and councilors, Drs. Francis T. Stewart, Thomas R. Neilson and J. Chalmers DaCosta.—The following officers were elected by the Northeast Branch of the County Medical Society: Dr. J. Albert Bolin, chairman; Dr. Albert C. Buckley, clerk, and Dr. Frank Embery, associate vice-president.

SOUTH DAKOTA

Gift to Medical Library.—Dr. Frederick A. Spafford, Flaudreau, and Dr. William E. Moore, Tyndall, have each presented to the library of the College of Medicine of the University of South Dakota more than one hundred volumes of medical books, journals and periodicals.

Election.—At the annual meeting of the Eighth District Medical Association, held in Yankton, Dr. Herman J. G. Koos, Scotland, was elected president; Dr. Nelgaard, Volin, vice-president; James Roane, Yankton, secretary-treasurer; and Dr. Silas M. Holif, Yankton, delegate to the state society.—Watertown District Medical Society, at its annual meeting, elected Dr. Charles S. O'Toole, Vienna, president; Dr. Harry M. Freeburg, Watertown, vice-president; Dr. James B. Vaughn, Castlewood, secretary-treasurer; and Dr. William O. Leach, Carthage, censor.—The Fourth District Medical Society, at its annual meeting in Pierre, elected Dr. Charles M. Hollister, Pierre, president; Dr. Napoleon B. Gerhart, Pierre, vice-president; and Dr. Joseph M. Walsh, Fort Pierre, secretary-treasurer.—At the organization of Gregory County Medical Society, at Dallas, recently, Dr. Harry A. Murnan, Gregory, was elected president; Dr. Edwin B. Bradley, Burke, vice-president; and Dr. Thomas R. Castles, Dallas, secretary-treasurer.

TENNESSEE

Medical College Suspended.—It is reported that the Knoxville Medical College, colored, has been temporarily suspended. There was only one graduate in 1910.

Society Elections.—The Montgomery County Medical Society, at a meeting in Clarksville, February 10, elected the following officers: president, Dr. Frank J. Runyon; vice-president, Dr. George E. Vaughn, both of Clarksville, and secretary, Dr. Lucullus E. Webb, St. Bethlehem.—McNairy County Medical Society, at its annual meeting in Selmer, elected Dr. E. Garry Sanders, Stantouville, president; Dr. James L. Smith, Selmer, vice-president, and Dr. Benjamin C. Dodds, Gravelville, secretary-treasurer.

Improvements at Medical School.—Vanderbilt University has received a donation of \$150,000 from the General Education Board as an addition to its general endowment and a like sum from Mr. W. K. Vanderbilt to be used for the medical department. These contributions have made possible the purchase of the campus of the Peabody Normal College which contains 16 acres of ground. On this campus are five or six buildings which are to be used for the medical and dental departments of the university. It is planned also to establish at once a university hospital of at least one hundred beds.

TEXAS

Recommends New Laboratory.—As the result of the inspection of the State Medical College, Galveston, by the subcommittee of the senate, a strong recommendation is made for the construction of a separate chemical laboratory as a necessary addition to the equipment of the institution.

Medical Society Meeting.—DeWitt County Medical Association held its annual meeting in Cuero, February 7, and elected Dr. George W. Allen, Yorktown, president; Dr. William D. Finney, Cuero, vice-president; Dr. Bronislaw J. Nowierski, Yorktown, secretary-treasurer; Dr. Robert Westphal, Yorktown, censor; Dr. W. R. Gillett, Cuero, delegate to the state medical association, and Dr. Harry H. Brown, Yoakum, alternate.

Cities to be Admitted to Census Bureau.—Although Texas as a state is not included in the death registration area of the United States, formed for the compilation and study of mortality statistics by the bureau, there are two cities, Galveston and San Antonio, which because of the effective local death registration ordinances, have been considered in the area of the bureau for the last four years. Owing to the activity of Dr. William M. Brumby, late state health officer, in promoting the extension of the registration area, many requests have been received from Texas cities which desire admission to the area and the chief statistician believes it probable that a number of them, in which the ordinances are thoroughly enforced, will be admitted to the area for the current year.

WISCONSIN

Society Meetings.—At the annual meeting of Brown County Medical Society, held in Depere, Dr. Richard C. Buchanan, Green Bay, was elected president; Dr. Felix Moraux, Luxembour, vice-president; Dr. Thomas J. Oliver, Green Bay, secretary-treasurer; and Dr. Daniel H. Gregory, Depere, censor.—Langlade County Medical Society, at its annual meeting in Antigo, January 28, elected the following officers: president, Dr. Michael J. Donohue (reelected); vice-president, Dr. George H. Williamson; secretary-treasurer and delegate to the state medical society, Dr. John C. Wright, and censor, Dr. Ignatius D. Steffen, all of Antigo.—At the twenty-fourth annual meeting of the Fox River Valley Medical Association, held in Menominee, Mich., February 7, Dr. Henry W. Abraham, Appleton, Wis., was elected president; Drs. Benjamin T. Phillips, Menominee, Mich., and F. Gregory Connell, Oshkosh, vice-presidents; and Dr. W. Weber Kelly, Green Bay, Wis., secretary-treasurer (reelected).

Proposed Legislation.—Dr. Cornelius A. Harper, Madison, secretary of the State Board of Health and a member of the legislature, has set a good example to other legislators. He has declined to do professional work during the 100 days' session of the legislature. He is about to introduce a bill providing for a state sanitary inspector whose duty it will be to travel through the state inspecting hotels, jails, school buildings, public buildings of all kinds, streets, alleys and other places to see if they are kept in sanitary condition. The bill carries an appropriation of \$3,500, one-half for salary, and one-half for expenses of the office. The second bill requires counties to make adequate provision for the care of advanced cases of tuberculosis. The state at present cares for incipient cases, but the State Board of Health wishes counties to take care of their own advanced cases. The third reform is the prohibition of the common drinking cup in all public buildings throughout the state.

GENERAL AND FOREIGN NEWS

Probably Not Plague in Spokane.—The daily press of February 28, reported that Passed Assistant Surgeon Bolivar J. Lloyd, U. S. P. H. and M.-H. Service, specially detailed for this service, has decided that the deaths in Spokane, supposed to have been due to bubonic plague, were not due to that disease but rather to a complication of influenza and pneumonia.

Cholera in Hawaii.—The Chion quarantine office, Honolulu, reported on February 25, four fatal cases of cholera among Hawaiians. Two of these were in the Kewalo suburb of the city, and two at a point nearly a mile distant in the city proper. On the following day two additional cases were reported, with one death. All necessary precautions are being taken by the Board of Health of Honolulu.

Conference on Education and Legislation.—As the Journal goes to press, the seventh annual conference of the American Medical Association on Medical Education and Medical Legislation is holding its opening session. The program was given in THE JOURNAL recently. An account will appear in these columns later and the full report will be published in the *Bulletin of the American Medical Association*.

Meeting of the Association of Colleges.—At the meeting of the Association of American Medical Colleges in Chicago, February 27 and 28, a number of amendments to the constitution were adopted, the principal one being in regard to the new curriculum for medical colleges and the raising of the entrance requirements to an unconditioned high-school certificate. Another amendment was the placing of the administration of the entrance requirements into the hands of proper educational authorities. The following officers were elected: president, Dr. William P. Harlow, University of Colorado, Boulder; vice-presidents, Drs. Henry A. Christian, Harvard Medical School, Boston, and Charles M. Hazen, Medical College of Virginia, Richmond; secretary-treasurer, Dr. Fred C. Zapffe, Chicago (reelected), and judiciary council, Drs. William J. Means, Columbus, O.; Randolph Winslow, Baltimore; Clarence M. Jackson, Columbia, Mo.; Charles R. Bardeen, Madison, Wis.; Egbert LeFevre, New York City; James R. Guthrie, Dubuque, Ia., and John A. Witherspoon, Nashville, Tenn. The next annual meeting will be held in Chicago.

Bureau for Distributing Bacterial Cultures.—The Department of Public Health at the American Museum of Natural History has equipped a laboratory to serve as a central bureau for the preservation and distribution of bacterial cultures of both pathologic and non-pathologic organisms. It is hoped that the laboratories of medical schools, colleges, boards of health, agriculture experiment stations, and individuals engaged in bio-

chemic work will furnish the museum with cultures in their possession. Types of new species and varieties are particularly desired at present. The laboratory plans also to keep on file descriptions of bacterial species in print or arranged in the form of standard card, and will be grateful for copies of any such descriptions. Descriptions filed in the department will be carefully preserved and living cultures will be supplied at all times without charge to corresponding laboratories, and so far as possible, and with a reasonable charge, to schools and other institutions which may desire cultures. Pathogenic forms will be sent only to properly qualified persons. The headquarters of the department are at Seventy-Seventh Street and Central Park West, New York City.

Sanitary Association Meeting.—At the fourth annual meeting of the Lake Michigan Sanitary Association, held in Chicago, February 18, addresses were made by R. R. McCormick, formerly president of the sanitary district, in which he stated that the power to protect the waterways from pollution rests with the federal government; and that if the people of the states of Wisconsin, Illinois, Indiana and Michigan do not take proper action the government will forbid all communities to empty refuse into Lake Michigan or adjacent waterways. Surgeon George B. Young of the U. S. Public Health and Marine-Hospital Service, discussed legislation now pending in congress relative to sanitation; Dr. Mazyck P. Ravenel, of the University of Wisconsin, spoke on "The Water of Racine, Kenosha, and Milwaukee;" Frank A. Windes discussed the progress in the improvement of north shore sanitary conditions; Langdon Pearse, of the sanitary district, spoke on "Sewage Disposal"; J. Herbert Brewster, of the Indiana State Board of Health, made a report on the condition of the Calumet River from Gary to its mouth; and Health Commissioner, Dr. William A. Evans, Chicago, discussed sanitary conditions.

Good Sanitary Conditions in Havana.—The *Revista de Medicina y Cirugia* of Havana publishes an open letter from Dr. J. Guiteras, chief of the public health service of the island, protesting against certain statements that appeared in the *Boston Transcript* and were copied in the *Army and Navy Journal*, Oct. 10, 1910, to the effect that Cuba was dropping back into her old apathy in respect to sanitary matters. He deplores the fact that every year at the opening of the tourist season some paper in the United States makes some such statement and that it is copied from one to the other until it seems important enough to be reproduced by some standard periodical which does not take the trouble to verify its accuracy. On the contrary, Guiteras states in 1909 there were only forty-five deaths from typhoid at Havana, with a population of 300,000, and thirty-eight in the first eleven months of 1910; there has been no mortality from yellow fever for years; from tuberculosis it has been only 13.07 per 10,000 inhabitants, and the infant mortality has constantly declined, dropping from 196 in 1900 to 171 for each 1,000 births, while in the entire island it is only 116. The deaths from malaria have dropped from 19 in 1908 to 6 in 1909, and the general mortality of the island now is only 13 per 1,000. The republic goes to great expense throughout the island to keep up the mosquito campaign, but in 3,056,118 houses examined only 6,238 actual breeding-places were discovered.

Proposed Organization of the Profession in Cuba.—The Cuban Academia de Ciencias Medicas, Fisicas y Naturales, located at Havana, recently sent out an appeal signed by its president, Professor J. Santos Fernandez, to all the medical men of the island inviting them to a national gathering to discuss ways and means for organizing the profession to protect its material and other interests. At the meeting resolutions were adopted to have a petition drawn up to be presented to the national legislature asking for compulsory organization of the registered physicians of the country, regulation of the illegal practice of medicine, establishment of a minimum salary for medical state officials, with an increase of 10 per cent. for each five years of service, correction of hospital abuse by those able to pay, contract practice restricted to 500 policy-holders to one medical officer, etc. In the discussion of the subject one speaker cited the universal dissatisfaction with conditions in regard to contract practice in France, England, Germany and Spain, where the medical men have finally had to organize to protect themselves against further exploitation by outside interests. In Belgium, he added, the physicians have triumphed over these evil conditions, thanks to the union of their common interests in concerted action. The idea of organization in Cuba being made compulsory is combated by other physicians, the opposition being so wide-spread that it will probably cause the whole matter of organization of the profession in Cuba to be tabled for the present, although the heaven of the need for organization is surely working.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, Jan. 14, 1911.

Health and Sanitation in Indo-China

During a Christmas vacation just ended, I made a trip to Indo-China and while there visited some of the hospitals and inquired into the general health of the country and the sanitary measures in vogue. Indo-China is a French possession and the stronghold of the French in the far East. It is located south of the Canton district of the Chinese Empire and east of Siam and the Malay peninsula. The country has been under the control of France for about sixty years. During this time many improvements have been made and the country has many of the landmarks of western civilization. The roads are excellent and most of even the smaller towns are supplied with the best available water and possess underground sewage systems. Many of the latter improvements, however, are doubtless for the convenience and health of the government functionaries, most of whom are French. One quickly gathers the impression that the native gets far less consideration in Indo-China than in the Philippines. House servants get from \$4 to \$8 (Mex.) (about \$1.80 to \$3.60 U. S. standard) per month and the great mass of the rice-field laborers who make up by far the majority of the population are still permitted to live in the dingy little nipa shacks which usually are found in groups in a filthy swamp. In many respects Indo-China resembles the Philippines, both in climate and in topography.

The principal diseases of the former are said to be dysentery, skin diseases and malaria. Dysentery is quite prevalent and is often very severe on the European. It is asserted that bacillary dysentery is not found in the country, but the quickness with which people sometimes die with dysentery there would tend to make one a little skeptical. Cases often terminate fatally in one to four days. A source of a great deal of the dysentery, especially among the Europeans, is from fresh vegetables, both those from the local market and those imported from China. In either case they are grown by Chinese, and the Chinaman's system of gardening is not a particularly sanitary one. Human and animal excreta are collected in a cess-pool or well and the whole mass of excreta and water is churned up into a fine emulsion. Each evening the truck garden is sprinkled from this pool. Thus fertilization and irrigation are accomplished at the same time and the vegetables thrive. This kind of vegetable naturally has a tendency to produce more fertilizer and the "heathen Chinese" profits additionally. As might be expected when vegetables of this kind are not well sterilized, there results serious infection with various microorganisms. This is probably the source of most of the dysentery among Europeans in Indo-China.

In the tropics, green vegetables, lettuce, tomatoes, etc., are especially palatable and one is tempted to eat them even when one has no assurance that they have been properly prepared.

Liver abscesses are quite common among the soldiers of Indo-China. At the hospital in Saigon there are several cases (four to ten) for operation each week. The Public Health Reports show a few cases of bubonic plague and cholera each week, but they seldom become epidemic. Yaws is said to be practically unknown in Indo-China, and leprosy occurs less frequently there than in the Philippine Islands. In regard to the occurrence of yellow fever, I was told that it was believed not to exist or at least is of very rare occurrence in recent years, but that when the French were attempting to dig the Panama Canal, it was always a source of anxiety and that cases appeared from time to time.

Major E. R. Whitmore, who has made a more extended tour of French Indo-China and a more complete inquiry into the medical problems of that country, has reported his observations to the Manila Medical Society for comparison with those of the Philippines. Among his notes are the following:

"The director of health is an army medical officer as well as the subdirectors. The army medical officers also furnish the quarantine service, such as boarding ships, etc., and do most of the teaching in the Medical School of French Indo-China at Hanoi. The manufacture of opium is a government monopoly and apparently there is no great restriction on the sale of the drug.

"The military hospitals are large permanent structures of brick, concrete and steel. In connection with the military hospitals at Hanoi is the Antirabic and Bacteriologic Institute of Hanoi. Drs. Mathis and Leger (majors of the colonial service) have done a great deal of work and have published freely on the diseases in Tonkin due to animal parasites. They have worked on the diseases around Hanoi and have

charted the various diseases in that part of Tonkin down to Haiphong and for some distance north and south on the coast.

"They have found that infection with *Filaria nocturna* is very frequent among the natives in north Indo-China and especially in Hanoi and Haiphong.

"Relapsing fever has been epidemic in Tonkin during the years 1907, 1908, 1909. It is especially prevalent in the delta of the Red River around Haiphong.

"Malaria is prevalent in Tonkin and the endemic index has been worked out to some extent. The endemic index (2 per cent. of apparently healthy children from 1 month to 5 years old found infected) runs according to the locality from 2.98 to 40.00 with an average of 7.33. It is interesting to note that their findings show that a large per cent. of the infections in children under 1 year are tertians, while quartans and subtertians are not nearly so numerous. But as the age of the child increases the proportions of quartan and subtertian infections increase as the tertians fall. However, they point out that their figures are still too small to base any conclusions on them.

"In connection with their work on malaria they have worked on the mosquitoes in Tonkin; six species of anophelines have been found in Tonkin, three in Hanoi.

"Infection with the Chinese liver-fluke is very common among the natives in north Indo-China and increases with age. Varying with the place, from a quarter to a half of the natives are infected with this fluke.

"They have studied the intestinal parasites of man in Tonkin and find infection about as common and with the same parasites as in the Philippines. Of a thousand natives examined, every one had at least one intestinal parasite, and the 1,000 had 2,289 infections.

"Intestinal amebiasis is very prevalent among the Europeans in French Indo-China. In the wards of the Military Hospital in Saigon they average about forty cases of it, and about eighty cases pass through the hospital every month.

"I saw three cases of sprue in Saigon and was informed that it was not very uncommon there, while the doctors in Hanoi told me that they do not have any sprue in Hanoi.

"Rabies is wide-spread among the animals, especially dogs, and the two institutes in Saigon and Hanoi have constantly from seven to thirty persons undergoing protective inoculations. Beside the rabies work, the Pasteur Institute at Saigon prepares vaccine virus and undertakes the study of material from infectious diseases, as plague, cholera, typhoid; of which diseases there are usually a few cases.

"At Nha Trang the anti-rinderpest serum is prepared, but all other serums (antidiphtheritic, etc.) are sent out from Paris.

"I was especially struck by the difference in the animal parasites found in the natives in Indo-China and what has been found in the Philippines. This is all the more striking when we remember that in Tonkin (in about the same latitude as Luzon), relapsing fever is epidemic, and infection with the liver-fluke is very prevalent. Relapsing fever has not been found in the Philippines, except an occasional imported case, and the liver-fluke is found only in Chinese who have probably brought it in with them.

"Similar conditions seem to hold good for parasites of lower animals, though this has not been worked on as much here as there, and save for the trypanosomes of rats and bats (which seem to be infected everywhere) little is known of the parasites of the lower animals in the Philippines.

"A hematozoon is found rather commonly in monkeys there, while D. Teague has examined a large number of monkeys here without finding a hematozoon and I think no one has ever found a hematozoon in monkeys here.

"I have examined the blood of doves, snipe and ducks without finding a leukocytozoon, while doves are commonly infected with a leukocytozoon there.

"But possibly when more work has been done on the animal parasites of man and the lower animals in the Philippines, we shall find that French Indo-China has not so many more animal parasites than we have."

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 14, 1911.

The Lowest Birth-Rate and Death-Rate on Record

The continuous fall of the birth-rate in recent years is once more shown by the lowest birth-rate on record. The figures for 1910 have just been issued: the births numbered 897,100 and the deaths 485,321, the natural increase of population thus being 413,779. The average annual increase in the past five years was 404,656. The birth-rate was at the rate

24.8 per 1,000 of the population, which is 0.8 below the rate of 1909, and lower than any rate on record. Compared with the average of the decade 1900-1909 the birth-rate in 1910 showed a decrease of 2.7. The death-rate in 1910 was 13.4 per 1,000, which was 1.1 below the rate of 1909 and, again, the lowest record. Compared with the average of the decade 1900-1909, the rate in 1910 showed a decrease of 2.4. The deaths included 10,609 from diarrhea, 8,574 from whooping-cough, 8,172 from measles, 4,177 from diphtheria, 2,337 from scarlet fever, 1,848 from typhoid, and 19 from small-pox. Thus 35,736 deaths were due to these epidemic diseases, a rate of 0.99 per 1,000, against 1.28, 1.34 and 1.13 in the three previous years. The deaths of infants under one year of age was 106 per 1,000 births, which is three below the rate of 1909 and the lowest on record.

The Value of Heredity

At the Authors' Club Dr. G. Archdall Reid, the author of "The Principles and Laws of Heredity," opened a discussion on this subject. He said in part: Everyone believes in evolution, which implies adaptation to the environment; degeneration implies the contrary. All plants and animals are adaptive forms. Man and the beetle can live in their own environment but not in that of each other. The right theory of evolution, and the right theory of heredity must fit in with this fact of adaptation. Only one theory of heredity fits the facts—Darwin's theory of natural selection. Selection implies a selective mortality, that the fittest survive and the unfittest perish as a general rule. Many people die young because they are weak against various microbic diseases. Each disease weeds out in its own habitat the unfittest. One other source of elimination is alcohol to which people vary in susceptibility. If the ill conditions which affect the parent do not as a general rule tend to alter offspring then since the offspring does vary spontaneously the fit will be preserved and the unfit will be weeded out and the race undergo protective evolution. A very unhealthy condition is found in the slums of great cities which show unhealthy parents and puny children. Since the fit will survive the race will become more resistant to slums. The races most exposed to slum life are Jews and Chinese. These races have not grown degenerate but have undergone protective evolution. The races longest exposed to consumption are most resistant to it. Offspring is not rendered degenerate by the misfortune of the parents but races undergo evolution owing to the fire to which they have been exposed. Suffering does not affect a race; but the deaths of the race do. By means of these deaths the foundations of the empire are laid. Disease has created a void which the British have filled in Australia and New Zealand.

Typhoid and Water Storage

Dr. A. C. Houston, bacteriologist to the Metropolitan Water Board, has issued an important report on the vitality of typhoid bacilli in stored water, and with that of cultivated as opposed to uncultivated bacilli. Bacilli derived from a typhoid carrier and bacilli cultivated in the laboratory are added in similar proportions to samples of river water in a carefully conducted and protected series of experiments. Both varieties proved to be incapable of sustaining an independent existence during storage and perished within definite limitations of time. Dr. Houston concludes that even a week's storage of raw river water is an enormous protection and less than a month's storage an absolute protection against typhoid, and that it is in the power of the board by adequate storage to render the supplies drawn from rivers, however originally polluted, perfectly safe before filtration.

The Overcrowded Medical Curriculum

The progress of medical science renders increasingly difficult the teaching of the medical student all the subjects which it is thought he should master before he is allowed to practice. Some years ago, the time for the completion of medical studies was increased from four to five years, but the longer period has still proved too short and only a minority of students complete their curriculum in that period, six and one-half or seven years being usually required. The subject has engaged the attention of the General Medical Council (the body appointed by the government to supervise medical education and exercise discipline over the profession) but no solution of the difficulty has yet been found. A committee was appointed to consider the place in the student's career which the preliminary sciences should occupy and to frame and submit to the council a pattern scheme of medical education, whereby the required minimum of the several subjects to be included in the curriculum could be adequately studied, and the requisite examinations thereon be passed within the period

prescribed by the curriculum. The committee has declared itself unable to suggest any remedy for the congestion of the medical curriculum. To meet the difficulty, Sir Henry Morris, a member of the council, proposes that the preliminary scientific studies, such as chemistry, physics, botany and zoology, which now form part of the curriculum, should be removed from it and pursued by the students in the schools, leaving the five years of the curriculum free for the strictly professional subjects, anatomy, physiology, medicine, etc. The council, on the other hand, holds that as the supreme authority in medical education it cannot sanction any part of the medical education being undertaken except under its control. This objection seems captious and unreasonable. The greater part of the education of the student before he enters medicine is necessarily outside the control of the council and adding to it chemistry, physics, etc., involves no question of principle. By means of a preliminary examination the council could easily insist on an adequate knowledge of these subjects before the beginning of the medical curriculum.

Infectious Diseases in London in 1910

The returns just published of the Metropolitan Asylums Board (which controls all the fever hospitals of London) shows several facts of interest. During 1910, 15,053 patients with the most important of the infectious diseases were admitted to the hospitals. These diseases were as follows; scarlet fever, 9,682 cases; diphtheria, 4,698; typhoid fever, 673. Two hundred and six deaths from scarlet fever occurred, being a case-mortality of 2 per cent. This number is less than half the average annual number of the preceding nine years, and lower than that in any year for which statistics exist. There were 360 deaths from diphtheria in the hospitals, a case-mortality of 8 per cent. The total deaths from diphtheria in London during the year were 434. In the three preceding years the deaths numbered 781, 724 and 605 respectively, showing a steady decline which reached its maximum last year. The deaths from typhoid fever in the hospitals numbered 126, a mortality of 19.5 per cent. The total number of deaths in London was 198,107, below the average in the nine preceding years, but an increase of fifty-two on the unprecedentedly low number of 1909. Thus the mortality of scarlet fever in the metropolis has shown in recent years a continuous decline, the disease being evidently of a milder type. On the other hand the case-mortality of diphtheria and typhoid shows no such decline.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 10, 1911.

Radiography as a Means of Ascertaining Whether or not an Infant has Lived

The means of medicolegal investigation to ascertain if a child has lived or not have hitherto been much restricted and have offered no absolute certainty. It appears from the researches which Dr. C. Vaillant has reported to the Académie des sciences that radiography offers a means of determining this point. If the fetus has not lived, no organ is visible, even if radiography is practiced after the eighth day in summer and the fifteenth day in winter. Later on, in frozen subjects, the whole arterial and venous system becomes visible on the negative, because putrefaction begins in the organs which functionate during intra-uterine life. On the other hand, in the bodies of infants which have lived, all the organs are visible if radiography is used as late as the tenth day after death. The only perceptible modification is produced by the augmentation of gas in the abdominal organs. There is no room for error in the interpretation of the results of radiography, whether it is used immediately after birth or later, since in either case the results are different in the case of an infant which has lived from those in a fetus which has not lived.

Relapses and Complications After Injections of Salvarsan

On February 2, before the Société française de dermatologie et de syphiligraphie, Dr. Bodin reported the case of a patient with precocious malignant syphilids which were intractable to treatment with mercury and iodids, but which were cured within fifteen days after an injection of 55 cg. of salvarsan. A month afterward, however, the patient had a relapse which yielded to a new injection of salvarsan, relapsing a second time at the end of forty-six days.

Moreover, Professor Gaucher and Dr. Gongerot observed complications following immediately after injections of salvarsan (two cases of pulmonary embolism with sharp pain, and respiratory difficulty a few minutes after the injection,

continuing for several hours), and later complications (two cases of phlegmasia alba dolens) appearing four or five days after the injection.

The Reform of Medical Instruction

The Association corporative des étudiants en médecine has just decided to demand: (1) the limitation of *stagiaires* to the number of twelve for each hospital service, which necessitates the extension of the *stage* to a greater number of services; (2) the creation of a superior medical council, composed in part of the professors of the Faculté, and in part of the delegates of the medical *syndicats*, with consultative voice for the corporative associations of medical students.

Moreover, considering that the organization of professional instruction demands a more complete reform of the hospital *stage*, the association demands an investigation looking toward the modification of the externship by which it should become a function open to all students by an examination and not by a *concours* as is the case at present. The association believes that all medical students should exercise this function for at least two years to obtain the diploma of doctor of medicine.

The Laborie Prize

The Société de chirurgie has divided the Laborie prize for 1910 as follows: \$400 (2,000 francs) to Dr. Paul Sourdat of Paris for his radiographic study of tuberculosis of the bones and articulations, coxalgia and white swelling of the knee; \$160 (800 francs) to Drs. Jules and André Boeckel of Strasbourg for their study of the fractures of the spine without medullary symptoms; \$100 (500 francs) to Dr. Guibé of Paris for his paper on the paralysis of the suprascapular nerve.

Personal

Dr. A. Kelseh, former *médecin inspecteur* of the service of military hygiene and member of the Académie de médecine has just died. After holding professorships in various French medical schools, he was appointed to the military hospital of Algeria, but was recalled to Paris two years later as professor of epidemiology at the Ecole d'application du service de santé militaire du Val-de-Grâce. In Algeria he accumulated much material on paludism, dysentery, liver abscesses, etc., which he utilized in the treatise on the diseases of warm countries, by himself and Kiener. He was the author also of a treatise on epidemic diseases in several volumes and numerous papers on epidemiology and hygiene presented before the Académie de médecine.

Dr. Claude Martin of Lyons, who had acquired great reputation in the practice of prosthesis of the face and mouth, has recently died. He was connected with the Hôtel-Dieu de Lyon, and was one of the most valued collaborators of Professor Ollier in all the procedures on the face which required the use of prosthesis appliances. He was appointed in 1908, national correspondent of the Académie de médecine de Paris.

Dr. William J. Mayo, of Rochester, Minn., is one of the foreign correspondents recently elected by the Société de chirurgie de Paris.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 10, 1911.

Personal

The noted Berlin physiologist, Prof. H. Munk, has been given the honorary title of doctor by the veterinary school.

R. Stern, director of the medical polyclinic and head physician of All Saints Hospital at Breslau, died Feb. 1, of influenza, aged 45. In 1892 he joined the faculty as privat-docent. His work lay mostly in the field of experimental pathology, but he was chiefly known by his treatise on "The Traumatic Origin of Internal Diseases," which for the first time systematically set forth the importance of trauma in internal pathology. The book had a wide circulation. A few years ago some interest was aroused by the fact that Stern accepted a call as director of the internal medicine clinic at Greifswald and later declined it without special reason. At one time there was a rumor of mental aberration. He traveled for some months, but later resumed his work at Breslau, and at the last meeting of the scientific association at Königsberg he delivered a fine address on a bacteriologic theme.

The Journey of the Crown Prince Interrupted by the Plague

In consequence of the extremely severe outbreak of the plague in eastern Asia, the German Crown Prince has abandoned his tour of the world and will begin the return journey at Calcutta. As the wide extent of the plague in northern China precludes the return by the trans-Siberian railway, he

will come back by way of the Red Sea. Terrible reports are made in the newspapers regarding the daily spread of the disease in China. Probably the reports are exaggerated, and it is to be assumed that the epidemic had begun before the Chinese authorities permitted reports of it. According to statements made in the Reichstag by a representative of the imperial naval office, Tsingtau, a city lying in the German protected area, is threatened by the plague. As a result the city is isolated on the land side by a military cordon, the railroad is interrupted at Syfang, all persons remaining in the city are kept under strict surveillance, and all ships are subjected to quarantine. The military surgeons who have recently been discharged and were about to return to Germany will remain in Tsingtau. The Chinese government has requested the German government to send European physicians to the region infected with plague. Russia has suggested an international commission to investigate the conditions of the epidemic on the spot. As a precautionary measure our imperial health council will take up the question how far Germany itself is threatened by the plague, and formulate measures of protection at the proper time.

The Campaign Against Lupus

The department of education recently notified all school principals of the danger of lupus and the necessity for its early recognition and proper treatment. It also warned the medical inspectors of schools to pay especial attention to lupus cases and report to the school director any found.

Instruction of Soldiers on Tuberculosis

In a suburb of Berlin, Wilmersdorf, a tuberculosis exhibition was installed a few weeks ago by the municipal authorities to educate the public. Statistics on the spread of tuberculosis, anatomical preparations and directions for the repression and prevention of tuberculosis, are shown, and lectures on these subjects are held together with other matters of the same sort. Lately more than 100 under-officers of the Berlin garrison have been conducted through the exposition daily by military surgeons and instructed with reference to the significance of the individual objects on exhibition.

Presidency of the Berlin Medical Society

At a session held for the purpose a few days ago, Senator declined a reelection as first president on account of his advanced age. As Senator has lately been failing in energy the society accepted his resignation and selected Professor Orth, the director of the pathological institute, in his place. Professor Kraus, director of the second medical clinic, was elected as one of the three vice-presidents in the place of Orth.

International Prize Competition of the Red Cross

In 1902 the Empress Maria Feodorowna, protectress of the Russian Red Cross, established the "Empress Maria-Feodorowna Foundation," a fund for the purpose of promoting new inventions which are intended to relieve the suffering of the wounded and sick on fields of battle. The income from the capital is to be distributed every five years on the occasion of the International Red Cross Conference. This was done first at the seventh conference in London, 1907. For Germany at that time the Doecker's barrack system and the Linxweiler system of transportation were each rewarded with a premium of \$1,500 (3,000 rubles). The next competition occurs at the international conference in Washington, 1912. The income accumulated for distribution amounts now to about \$10,000 (40,000 marks). The German member of the jury of awards is Professor Pannwitz of Charlottenburg.

International Scientific Research Trip to the Canary Islands

A scientific study trip to Teneriffe will occur in March and April of this year. In the spring of 1910, at the suggestion of Professor Pannwitz, president of the international commission for investigation of altitude and sunlight, a scientific expedition to the mountainous region of Teneriffe was undertaken, in which under the direction of Professor Zuntz, German, Austrian and English physiologists as well as the astronomer Mascart, of Paris, and Professor Müller of Potsdam, took part. Further investigations on the action of light in those especially illuminated regions are to be undertaken, for which German, Russian and Danish investigators have promised their cooperation.

Complete Edition of the Works of Robert Koch

At the request of the heirs of Robert Koch, that is, his second wife and the daughter of his first wife, a complete edition of the works of this gifted bacteriologist will be published by Professor Schwalbe with the cooperation of Professor Gaffky, director of the institute for infectious diseases,

and Professor Pfuhl, Koch's son-in-law. In particular, the different articles scattered in various journals and now difficult of access are to be collected. In addition to the articles already published, suitable material selected from the numerous reports that Robert Koch made for the government authorities will be published for the first time. It is expected that the work, which is appearing under the care of the well-known publisher, Georg Thieme of Leipsic, will be completed by the end of the year.

Increase in Fees for Foreign Students at the Prussian Universities

For some years the demand has been made in the Prussian parliament (Landtag), as I have previously informed you, to raise the matriculation and tuition fees for foreigners in the universities and technical high schools. The authorities have hitherto been opposed to this, principally because they feared that similar restrictions would be imposed against German students in the foreign universities. Now, inasmuch as the home students are being crowded out sometimes by foreigners, the authorities have yielded so far that they have imposed for the summer semester of 1911 a double fee on foreigners for laboratory work and attendance on lectures. For students of the natural sciences and medicine this amounts to an increase of \$2.50 (10 marks) and for other departments \$1.25 (5 marks).

The Death-Rate in Relation to the Standard of Civilization

Dr. Prinzing, the medical statistician of Ulm, published in the last number of the *Archiv für Rassen- und Gesellschaftsbiologie* a very interesting study of the development of civilization from the standpoint of the death-rate. He states that the high infant mortality in countries with a low state of civilization is probably chiefly attributable to the great prevalence of acute infections. Among adults the mortality of males in the more highly civilized countries approaches that in the less civilized because of the unfavorable influences of industry and of the abuse of alcohol, while the mortality of the female sex is greater among the less civilized because of their lack of protection and the excessive demands made on their productiveness. In civilized countries old age is characterized by a higher mortality because in these countries the working power of old men very frequently cannot be sufficiently utilized. It might be assumed that the slight difference in the death-rate in the adult period depends on the fact that by the high mortality of children in the less civilized countries, the weaklings are eliminated and only the most resistant remain. But the death-rate of the first year of life must be viewed apart because, for example, in spite of their slight infant mortality, Servia and Bulgaria show the same death-rate as Hungary and Russia, with their high infant death-rate. Also the numerous deaths in later childhood in these countries can have only a small influence on the question as very many of them are caused by infectious diseases and their results, in which cases the mortality depends less on hereditary resistance than on the occurrence and virulence of the infection.

We cannot assume that those predisposed to tuberculosis are early eliminated by the great infant mortality in eastern Europe and that by this means the mortality of adults is diminished; for the mortality from tuberculosis is greater in these countries than in western Europe. Furthermore we have seen that the slight difference in mortality of adult males in eastern and western Europe depends not on an especially low mortality in the east, but on an increase in the mortality in the civilized countries by the factors above named. Still it would be incorrect to deny that the high infant mortality of eastern Europe has any influence on the less unfavorable mortality of adults. In a number of infectious diseases (e. g., small-pox, measles, scarlet fever, typhoid fever) immunity is induced by a single experience of the disease, so that many persons are protected in later life by having had these diseases in childhood, although on the other hand, these children's diseases cause many deaths. If the children in these countries could be protected by any measures against infections, they would in later life fall victims to these diseases in increased measure, under the ordinary conditions of adult life. Here we have to do with an acquired peculiarity. Opinions differ as to whether there is a congenital hereditary immunity; at any rate, it is very rare in case of diseases like small-pox and typhoid fever. In respect to certain diseases the adult civilized man does not need to acquire an immunity, which is secured only with such great sacrifice of human life, for he knows how to protect himself in a simpler way, by vaccination against small-pox, by general hygienic measures against typhoid fever and similar diseases,

and by early isolation of patients or by avoiding them himself in case of other diseases. If a Servian or Russian family wishes to have three children who shall reach at least the age of 14, there must be five or six born in this family, whereas in an English family only four births would be necessary for the same purpose. This is without doubt of great value for the latter nation, as every birth means danger to the life of the mother, necessitates temporary inability to work and the trouble and expense attending the rearing and death of young children. It is not very probable that by the selection of four instead of five or six children, the likelihood of preserving lives of inferior value is markedly increased, for in civilized countries, in the majority of the population, that is, the working classes, the preservation of doubtful lives is rare. In this respect from an economic point of view there can be no doubt that the death-rate which is common in the more highly civilized countries, consisting of a low mortality before the age of 35, constitutes a great gain for these nations.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 14, 1911.

An Excursion of the American Medical Association of Vienna

The American Medical Association of Vienna has been mentioned several times in previous letters in *THE JOURNAL*. It has at present a fully recognized position among the medical associations of this city, and is held in high esteem by its Austrian confrères. Recently, the association was invited to visit the Leuwering, a favorite health resort, about 80 miles south of Vienna, where splendid accommodations for health-seeking patients were erected a short time ago. The American physicians—a party of about eighty—were led through the two hydrotherapeutic establishments situated some 3,000 feet above sea level, and were shown the various electric and other physical equipments there. The local magistrates and the medical men of the district were unanimous in declaring that the visit of the foreign physicians was regarded as very flattering, while on the other hand, the invitation shows what a position the American association has attained here, for this kind of excursion is not very frequent in this country.

A Students' Strike in Cracow

The appointment of a reactionary professor of philosophy named Zimmermann in the University of Cracow has led to serious consequences in hospitals of that city. The majority of the students there belong to the liberal or anticlerical party. They remonstrated against the professor, and as the appointment was not cancelled, riots and other disturbances followed. Medical students took the lead in these demonstrations. It seems to be the privilege of medical students, at least in this country, to be always at the head in the defense of the liberty of teaching. A number of students were suspended for at least one term, while others were excluded permanently. These severe measures produced a general strike at the university, and since numerous medical students of the higher classes or near graduation were busy in the hospitals, they too had to strike. This serious condition has been prevailing for some time, and the senate of the university has been forced to reconsider its decision; the lack of students is felt keenly in the wards and the radical mind of medical thinkers seems to be predominant in students' circles. They will not give in before the "disease," the reactionary experiment, has been eradicated.

Titles for Practitioners

It is intended to grant certain titles to distinguish medical men not holding hospital or similar appointments in this country. The titles are to be "Medicinalrath" and "Ober-Medicinalrath," which mean in fact nothing but sound imposing. In several medical corporations an energetic movement has been set on foot to prevent the passing of such a bill by the board of health, within whose jurisdiction this matter falls. The possession of such a title would, in the opinion of those who oppose the idea, give an unfair advantage to these men, for our public is very fond of titles and believes that a title is equivalent to better knowledge. Hence the title of "privat-docent" for instance, is much coveted by physicians here. We have already many titled doctors. In Vienna alone, over 20 per cent. of the total have the title of "Professor," "Docent" or "Assistant," and in the country titles mean even more, being less common. It is therefore likely that the opposition will carry the day.

Death of Professor von Braun

The Nestor of the gynecologists of this city, Professor von Braun, died after a short illness a few days ago. He was the last one of the old Vienna medical school, which counted Skoda, Rokitansky, Billroth, Kaposi and Notlmagel among its members. Professor Braun was the first teacher of midwives in this country, and his earnestness, dexterity and sagacity soon gained for him a leading position and an enormous private practice in the highest circles. He found time for useful scientific work and published writings on extra-uterine pregnancy; the fetal malformations; the anatomy of the pelvis, and obstetric surgery. His death at the ripe age of 82 came as a shock to his numerous friends.

Marriages

REUBEN FRANK DAVIS, M.D., to Miss Bessie Lee Leckey, both of Glasgow, Va., February 15.

GEORGIANA MARGARET DVORAK, M.D., and John Joseph Theobald, both of Chicago, Oct. 29, 1910.

HARVEY WASHINGTON WILEY, M.D., Washington, D. C., to Miss Anna Campbell Kelton, February 27.

FREDERICK WILLIAM MAYER, M.D., Indianapolis, to Miss Margaret Welch, at Indianapolis, February 8.

DAVID WAYNE FOSLER, M.D., Indianapolis, to Miss Katherine Krauss Vonnegut, at Indianapolis, February 28.

ALBERT JULIUS GEIGER, M.D., U. S. Navy, to Miss Margaretta Benners Ashbridge of Philadelphia, February 15.

JOHN WATKINS WILLIAMS, M.D., Everetts, N. C., to Miss Bertie Zenobia Gardner of Williamston, N. C., January 18.

JONATHAN D. HINSHAW, M.D., Canon City, Colo., to Miss Elizabeth Love of Silver Cliff, Colo., at Canon City, February 8.

ORVILLE E. SPURGEON, M.D., Muncie, Ind., to Miss Ella Maria Worley of Washington Court House, O., at Muncie, January 18.

Deaths

Aloysius Oliver Joseph Kelly, pathologist, and diagnostician, editor of the *American Journal of the Medical Sciences*, died at his home in Philadelphia, February 23, from complications following an attack of influenza, aged 41. He was a native of Philadelphia, received the baccalaureate degree in arts in 1888, and three years later the degree of M. A. in LaSalle College. He graduated from the Medical Department of the University of Pennsylvania, Philadelphia, in 1891, and for two years did postgraduate work in London, Dublin and Vienna, where he devoted special attention to pathology and internal medicine. He was associate professor of medicine in his alma mater; professor of the theory and practice of medicine in the University of Vermont, College of Medicine; and professor of pathology in the Woman's Medical College of Pennsylvania, Philadelphia. He was a member of the American Medical Association, Association of American Physicians, and American Association of Pathologists and Bacteriologists; a fellow of the College of Physicians of Philadelphia, and of the American Academy of Medicine. He was visiting physician to St. Agnes and University Hospitals, and pathologist to the German Hospital. His literary work included a text-book on the practice of medicine, published in 1910; the joint editorship, with Dr. John H. Musser, of an extensive system of therapeutics; and, as stated above, he was for several years editor of the *American Journal of the Medical Sciences*. Dr. Kelly's death deprives the medical profession of one of its most promising pathologists and internists.

Edward Strong Bogert, M.D. Rear Admiral U. S. Navy, retired, died at the home of his daughter in New York City, February 16, aged 74. Dr. Bogert entered the Navy in June, 1861, served through the Civil War, and was on duty with Farragut's Squadron at the capture of New Orleans and the campaign of the Mississippi River; he was promoted to medical director, and was retired May 7, 1898. He was a graduate of the New York University Medical College in 1860, and a member of the Society of Bellevue Hospital Alumni.

William Henry McDonald, M.D. Bellevue Hospital Medical College, 1871; a member of the Colorado State Medical Society; a veteran of the Civil War, in which he served in both the Army and Navy; for twenty-four years resident physician at Pueblo for the American Smelting and Mining

Company, and surgeon for the Missouri Pacific and Santa Fe systems; died at his home in Pueblo, February 3, from chronic interstitial nephritis, aged 64.

George W. Osborne, M.D. Columbus (O.) Medical College, 1883; a member of the Ohio State Medical Association; died at his home in Dry Run, February 19, from paralysis, aged 58.

Charles Hamlin Phelps, M.D. Medical College of Ohio, Cincinnati, 1876; a member of the Ohio State Medical Association; president of the St. Mary's Board of Education; died suddenly at that place, February 21, aged 68.

Franklin J. Foster, M.D. Georgetown University, Washington, D. C., 1871; a veteran of the Civil War; and for twenty-five years an employee of the War Department; died at his home in Washington, February 5, from cerebral hemorrhage.

Joseph A. W. Hull, M.D. Medical College of Ohio, Cincinnati, 1880; died at his home in Stella, Neb., February 7, from hemorrhage of the stomach, aged 54.

Frederick Coggeshall, M.D. Harvard Medical School, 1892; a member of the American Medical Association, and American Academy of Medicine; a specialist in gynecology and neurology; a member of the neurologic staff of Boston Dispensary; formerly physician to the Boston Hospital and pathologist to Carney Hospital; died at his home in Boston, February 1, aged 50.

Thomas Markley Trego, M.D. College of Physicians and Surgeons, New York City, 1874; a member of the American Medical Association; attending physician to the Child's Hospital, St. Margaret's Home for Infants, and the Home for Aged Men, Albany; died at his home in Albany, N. Y., February 16, from pneumonia following a fall, aged 63.

Percy Duncan Littlejohn, M.D. Yale University, New Haven, 1897; a member of the Connecticut State Medical Society; and of the American Urological Association; first assistant to the chair of genitourinary surgery in the New York Post-Graduate Medical School; died at his home in New Haven, February 11, from heart disease, aged 36.

Albertus T. Ritter, M.D. Baltimore (Md.) Medical College, 1893; a member of the Medical Society of the State of Pennsylvania; physician to the Perry County Alms House, and the Tressler Orphans' Home; died at his home in Loysville, February 10, from the effects of an overdose of chloroform, aged 40.

Massillon Cassatt, M.D. Medical College of Ohio, Cincinnati, 1864; for many years a practitioner of Cincinnati; formerly a member of the American Medical Association; a life member of the Cincinnati Academy of Medicine; died in Jacksonville, Fla., January 5, from organic heart disease, aged 71.

David Marshall Devilbiss, M.D. University of Maryland, Baltimore, 1872; a member of the Medical and Chirurgical Faculty of Maryland; formerly health officer of Frederick County, and a member of the state senate in 1903; died at his home in Woodville, February 14, from nephritis, aged 66.

Benjamin T. Abbott, M.D. Jefferson Medical College, 1870; a member of the American Medical Association; president of the Cape May County and Ocean City, N. J., boards of education; died suddenly, February 17, in the Pennsylvania Railroad station, Ocean City, from cerebral hemorrhage, aged 67.

Henry Schmalhausen, M.D. Jefferson Medical College, 1867; a pioneer practitioner of Montana; a veteran of the Civil War; surgeon-major of the First Regiment, Mont., National Guard; a resident of Idaho since 1875; died at his home in Pony, recently, and was buried January 26.

Oscar F. Pile, M.D. College of Physicians and Surgeons, Chicago, 1888; a member of the American Medical Association, and Tri-State Medical Association; United States pension examiner; died at his home in Memphis, Mo., February 12, after an operation for duodenal ulcer, aged 52.

James Pickens Burke, M.D. University of Pennsylvania, Philadelphia, 1853; a member of the Medical Association of the State of Alabama; surgeon of a Mississippi regiment in the Confederate service during the Civil War; died at his home in Meridianville, February 12, aged 80.

George William Mahle, M.D. University of Maryland, School of Medicine, Baltimore, 1905; a member of the American Medical Association; on the staff of the Robert Garrett Hospital for Children, Baltimore; died at his home, February 20, from tuberculosis of the lungs, aged 29.

Robert Hamilton Phelps, M.D. Syraense (N. Y.) University, 1894; a member of the American Medical Association; local surgeon at Norwich, N. Y., of the Delaware, Lackawanna and Western, and New York, Ontario and Western railways; died at his home, February 6, aged 41.

Charles Joseph Hamnett, M.D. Bellevue Hospital Medical College, 1865; formerly of Homestead, Pa.; a contract surgeon in the Army during the Civil War; died at the home of his daughter in Washington, Pa., February 3, from obstruction of the esophagus, aged 76.

Edwin D. Leidy, M.D. Jefferson Medical College, 1885; a member of the Medical Society of New Jersey; formerly medical examiner of the public schools of Flemington Borough and Raritan Township; died at his home in Flemington, February 17, aged 53.

Lloyd Alexander Craig, M.D. University of California, San Francisco, 1907; a member of the Medical Society of the State of California; resident physician at St. Mary's Hospital, San Francisco; died at the home of his brother in Oakland, February 7, aged 26.

John Loring Burnham, M.D. Dartmouth Medical School, Hanover, N. H., 1888; a member of the American Medical Association; formerly consulting physician to Elliot Hospital, Manchester, N. H.; died recently at his home in Las Cruces, N. M., aged 53.

William Palmer Chisholm, M.D. New York University Medical College, 1881; a member of the Massachusetts Medical Society; formerly consulting surgeon to Brockton City Hospital; died at the Insane Hospital, Taunton, Mass., February 16, aged 58.

William L. Egan, M.D. Tulane University, New Orleans, 1882; a member of the Louisiana State Medical Society; formerly a member of the Shreveport Board of Health; died at his home in that city, February 19, from heart disease, aged 55.

Thomas Tomelty, M.D. Rush Medical College, 1899; a member of the American Medical Association; for several years health officer of Vernon and Muskego, Wis.; died at his home in Big Bend, Wis., February 16, from pneumonia, aged 45.

Frederic Garvin Conger, M.D. Western Pennsylvania Medical College, Pittsburg, 1895; secretary of the board of pension examiners of Mondovi, Pa.; died at the home of his sister-in-law, in Oakland, Pittsburg, January 31, aged 41.

James Youngs Tuthill, M.D. Bellevue Hospital Medical College, 1864; a member of the Medical Society of the State of New York; and Associated Physicians of Long Island; died at his home in Brooklyn, February 15, aged 69.

George Whitfield Ward, M.D. Bellevue Hospital Medical College, 1874; for many years a member of the staff of the Metropolitan Throat Hospital, New York City; died at his home in New York City, February 8, aged 60.

John H. Williamson, M.D. Jefferson Medical College, 1859; a member of the Medical Society of the State of North Carolina; died at his home near Rockingham, February 11, from heart disease, aged 82.

Clarence Howard Slightam, M.D. College of Physicians and Surgeons, Chicago, 1899; formerly of Eau Claire, Wis.; in charge of the Native Hospital, Juneau, Alaska; died in that city, recently, aged 34.

Robert H. McCamy, M.D. University of Pennsylvania, Philadelphia, 1879; for more than thirty years a practitioner of Kensington, Philadelphia; died at his home, January 5, aged 55.

Richard Asbury, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1865; for many years a practitioner of Monroe City, Mo.; died at his home in Hunter, Okla., January 19, aged 72.

Frank Orlando Webber, M.D. Harvard Medical School, Boston, 1877; a member of the Massachusetts Medical Society; died at his home in Cambridge, February 14, from pneumonia, aged 56.

Charles Franklin Kingsbury, M.D. Dartmouth Medical School, Hanover, N. H., 1856; a member of the Massachusetts Medical Society; died at his home in West Medford, February 14, aged 86.

Lafayette Summers, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1876; a member of the Iowa State Medical Society; died at his home in Milton, February 6, aged 61.

Charles Carroll McCaffrey, M.D. Eclectic Medical Institute, Cincinnati, 1908; of Huntington, W. Va.; died in Seton Hospital, Cincinnati, Dec. 21, 1910, from pneumonia, aged 36.

Orrel McFadden, M.D. Albany (N. Y.) Medical College, 1865; for forty-one years a practitioner of Massena, N. Y.; died at his home, Dec. 29, 1910, from nephritis, aged 74.

Alexander Franklin Binkley, M.D. Vanderbilt University, Nashville, Tenn., 1879; died suddenly at his home near Sycamore, Tenn., February 4, from acute gastritis, aged 66.

Adolph Kraemer, M.D. University of Zurich, Switzerland, 1894; a specialist on diseases of the eye; of San Diego, Cal.; died at his home in that city, January 24, aged 46.

David M. Miller, M.D. College of Physicians and Surgeons, Baltimore, 1887; died at his home in Indian Springs, Tenn., January 8, from disease of the kidneys, aged 69.

Daniel Franklin Royer, M.D. Jefferson Medical College, 1875; a practitioner of Orange, Cal., for twelve years; died Nov. 7, 1910, after an operation for appendicitis.

Theophilus N. Kirkpatrick, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1872; died at his home in Letcher, S. Dak., Nov. 8, 1910, from diabetes, aged 61.

Andrew Niles, M.D. Philadelphia University of Medicine and Surgery, 1852; died in his apartment in Carbondale, Pa., January 17, from senile debility, aged 79.

James C. Wright, M.D. Medical College of Georgia, 1894; a member of the American Medical Association; died at his home in Folkston, January 2, aged 52.

Helen M. Miller, M.D. Woman's Medical College of Pennsylvania of Pennsylvania, Philadelphia, 1884; died at her home in Cleveland, January 6, aged 58.

Frank R. Wyroznski, M.D. Ensworth Medical College, St. Joseph, Mo., 1906; died at his home in St. Louis, February 6, from tuberculosis, aged 32.

Frank Moore Doyle, M.D. Western Pennsylvania Medical College, Pittsburg, 1897; died at his home in Pittsburg, February 7, aged 39.

Josiah M. Bosworth, M.D. Southern Medical College, Atlanta, 1887; died at his home in Atlanta, February 1, aged 69.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

PLANTOXINE

The Therapeutic and Commercial Possibilities in Milk Sugar

Some "patent medicines" are viciously fraudulent; others are simply fraudulent. Some contain habit-forming and dangerous drugs; others contain no drugs at all. Plantoxine is a nostrum marketed by the Plantoxine Company and we understand that the Plantoxine Company is really Edward W. Crittenden, a lawyer, who runs this business as a side line. The mere study of the advertising matter that accompanies Plantoxine would be sufficient to convince one that a lawyer had either written it or had very carefully "edited" it. Plantoxine is said to be:

"A Preparation of Constitutional Medicines formulated as a Corrective in Abnormal Conditions of the System which create Undue Susceptibility to Miasmatic Diseases, Plant Pollen, La Grippe, etc.; Chronic Malarial Diseases; Hay Fever, Hay Asthma, Rose Cold, etc.; Influenza and La Grippe."

In a descriptive booklet on the nostrum, the theory is advanced that "hay fever and malaria are regional associates," and that both of these pathologic states "viciate [sic] the blood." We are further told that "hay fever and la grippe are recognized as different forms of influenza." Having evolved these theories, the "inventor" of Plantoxine set about to discover a cure—or, as it is cautiously designated, "a successful treatment"—for these related diseases.

"After five years of diligent and painstaking effort along these lines such a remedy has been evolved."

The remedy, of course, is Plantoxine. Says the exploiter:

"In Plantoxine we now have a simple preparation of the classical constitutional medicines, delicately proportioned and adapted to the general pathology of these cases. It is guaranteed under the Pure Food and Drugs Act of June 30, 1906, and therefore may be considered perfectly safe, while its effectiveness in individual cases may be left to be decided by practical tests."

Naturally, a preparation possessing the properties claimed for Plantoxine would be brought to the attention of physicians by their patients. It is not surprising, then, that the Association's laboratory has been asked to examine this prepara-

tion to determine whether or not it contained cocain or any other dangerous or habit-forming drugs. The report of the Association's chemists follows:

LABORATORY REPORT

"The specimen received was a white, odorless, powder having the physical properties of milk sugar. Qualitative tests demonstrated the absence of cocain and other alkaloids and indicated that the substance was probably milk sugar. Some time later the correspondent, who had first written to the laboratory, sent an original package of Plantoxine for examination.

"Plantoxine is sold in packages each containing 40 powders, each powder containing about 2 grams (30 grains) of the preparation. The package, which retails for \$1.00, contains about 2 $\frac{3}{4}$ ounces of the preparation.

"Quantitative examination indicated that Plantoxine consists entirely of milk sugar. The presence of medicinal substances could not be determined. If present their quantities must be small.

"In this connection it should be pointed out that the effect of cocain or its substitutes on the tongue furnishes a very sensitive and fairly distinctive test which may be used by physicians with advantage. If a trace of a powder, such as this, produces no numbing effect when placed on the tongue the practical absence of cocain or its substitutes may be assured."

The story is told by Mr. Adams in "The Great American Fraud," that a general agent for a jobbing house once declared that he could put an article on the market, possessing neither remedial nor stimulant properties, and by skilful advertising persuade people that it had great therapeutic virtues. Challenged to a bet, he put out his "remedy," and within a year had won the wager. His preparation was nothing but sugar! In the light of the analysis just given, one wonders whether Mr. Crittenden—The Plantoxine Co.—also, is trying to win a bet. As this business has been conducted now about four years, it has ceased to be an experiment and is, presumably, on a paying basis.

The original boxes in which Plantoxine comes, give the price as 75 cents. These words have been obliterated and the preparation is now sold for \$1. Doubtless, the advance is due to the increased cost of living—sugar probably costs more now than it did four years ago.

We must give Mr. Crittenden credit for at least a certain degree of modesty in the claims made for his discovery:

"Plantoxine must not be expected to cure everything. Laxatives, lithia salts, calomel or other special treatment temporarily may be required, but it should be remembered that such measures are to be employed only when specially indicated and that they are not to be considered as being regularly associated with Plantoxine treatment."

Truly Mr. Adams was right when he said that "our national quality of commercial shrewdness fails us when we go into the open market to purchase relief from suffering." While, probably, it would be difficult to get the average, wide-awake American to purchase wooden nutmegs it seems to be an easy matter to sell milk sugar worth 10 cents a pound, wholesale, at \$5.82 a pound, retail—providing it is sold as a "cure" for hay fever and "related diseases"!

Organic Iodin Preparations

Iodism is one of the serious disadvantages connected with the use of iodine. To obviate it various suggestions have been made but the combinations of iodids with other remedies designed to lessen their poisonous effects have failed to obviate the occurrence of iodism. This disadvantage of the iodids has led to the recommendation of numerous substitutes which are generally combinations of iodine with various organic radicals. The essential inadequacy of these preparations is emphasized by von Notthafft (*Monatsh. f. prakt. Dermat.*, Oct. 15, 1910, p. 343). He says: "Where iodism is indeed less frequently observed (in these cases indeed it is not wholly excluded), a more careful observation establishes the fact that the preparation either has other disadvantages or that the lower degree of toxicity has in fact its basis in a feeble activity; either the substitutes evolve too little iodine or they split it off with greater difficulty." This is true of substitutes

for iodids in general, such as iodoform, iodol, iodolacid, iodipin, iodolum, iodomeninum, iodopyrin, iodeigone, sajodin and others.

Iodival has a peculiar position. It is true that it produces less irritation of the stomach and intestine but symptoms on the part of the nervous system occur so much the more readily. According to Notthafft, this is to be regretted as the remedy is especially recommended for syphilis of the nervous system. Iothion has the disadvantage of producing cutaneous irritation, so that it cannot be used on sensitive skins. Notthafft reports his experiences with iodoglidin, a preparation in which iodine is combined with a nuclein-free, non-irritating vegetable albumin. The claim has been made that this preparation is free from objectionable side effects. Notthafft is of the impression that it is somewhat better tolerated than the iodids, although he cannot base this on absolute figures because, as is well known, the tolerance of the iodids varies extremely with different people. He finds, however, that it sometimes disagrees with the stomach and may produce serious iodism of which he reports two interesting cases. He sums up his opinion of iodoglidin as follows: It is in general an effective preparation in syphilis, although it acts somewhat more slowly than the iodids. It induces toxic effects somewhat less frequently; still acne, coryza, intestinal affections and nervous disturbances are not rarely observed. While it is a practicable remedy and while it may be tried in certain cases in which other iodine preparations are not borne, and might have a field for application in cases in which the body should contain little salt, still the unlimited praise which it receives in certain circulars and abstracts cannot be accepted. Notthafft cannot agree with the opinion of Seifert and Imhoff that it is tasteless. On the contrary it possesses a somewhat sharp taste resembling mustard oil which is disagreeable to many persons. The claim of Zieler that it produces iodism only in persons with marked idiosyncrasy must be expressly denied.

It is evident from these observations that the claims made for substitutes for the ordinary preparations of iodine should not be accepted without critical examination.

Green Extracts

Green extracts or tinctures of fresh herbs have been introduced into pharmaceutical practice on the theory that they would possess therapeutic properties which would be dissipated by drying the herbs. This may possibly be true of a few plants but for the most part, especially for plants which contain non-volatile, active constituents, the plan is not a good one on account of the variable amount of water contained in the fresh plant. These extracts are official in the British Pharmacopeia and a general formula for tinctures of fresh herbs is included in the United States Pharmacopeia. The following from the *British and Colonial Druggist*, Jan. 20, 1911, shows the unreliability of these preparations:

Noteworthy among a large number of interesting points in the nineteenth annual laboratory report of Messrs. Southall Bros. and Barclay, Limited, are some observations on the green extracts of the B. P., which have again manifested their unreliability and variation in strength. Evidence of this is given by the following figures of total alkaloids in the green belladonna extract prepared from the herb of the last nine seasons:

1.38 per cent.	0.87 per cent.	1.57 per cent.
1.50 per cent.	1.04 per cent.	0.98 per cent.
1.08 per cent.	1.25 per cent.	0.80 per cent.

Thus, the extract of the last season was little more than a half the strength of that of 1908. Worse still, a sample obtained recently of undoubted purity gave only 0.73 per cent. And again, as regards hyoscyamus, the total alkaloid yielded by a bulk sample of last season's manufacture was 0.084 per cent.—a very low figure. These poor results may perhaps be traced to the wet season, but, having regard to the fluctuations indicated, the view that the green extracts will not survive the present edition of the Pharmacopeia is likely to be confirmed by the event. If they should be retained it appears to be very desirable that standards of alkaloidal strength should be fixed.

As extracts of green drugs in times past have frequently been shown to be variable and unreliable, the observations noted above form another link in the chain of evidence condemning such preparations.

While the formula in the United States Pharmacopeia for the preparation of green tinctures is a general one, the consideration of the facts cited, is recommended to the committee now engaged in revising the Pharmacopeia.

Association News

CENTRAL ROUTES TO LOS ANGELES

More Details of Railroad Plans for the Trip to the Next Session of the American Medical Association

The next annual session of the American Medical Association will be held in Los Angeles, Cal., June 27-30, 1911. Several announcements have appeared in *THE JOURNAL*: A list of hotels with rates was published February 18, page 527; the railroad rates from the Mississippi Valley were announced February 18, page 528; a preliminary announcement of the entertainments was given February 25, page 605. There will be a special convention issue of *THE JOURNAL* as usual in May, giving the program and full particulars; in the meantime various items of information will be given from week to week. The Transportation Committee has submitted the following:

CENTRAL ROUTES TO THE LOS ANGELES SESSION

Last week attention was called to the American Medical Special to Los Angeles over the Santa Fe and the reasons were given for selecting this route. This week, we call attention to the central routes and the points of interest along the following lines:

There are several excellent roads out of Chicago, among which may be mentioned the Burlington, the Rock Island, the Northwestern, the Chicago, Milwaukee and St. Paul, the Illinois Central and the Chicago and Great Western. Most of these lines run magnificent trains through to California. One may go by way of Denver, Salt Lake City and San Francisco to Los Angeles or take the short line from Salt Lake City directly to Los Angeles.

From Denver one may go south through Colorado or by the Denver and Rio Grande to Salt Lake City. On the Denver and Rio Grande is perhaps the most beautiful mountain scenery in this country. Salt Lake City is well worth seeing as is Salt Lake itself which is crossed by the train. West of Salt Lake on the Southern Pacific or Western Pacific one crosses the Great American Desert, then over the Sierra Nevada mountains to San Francisco and down through California to Los Angeles.

From Salt Lake City one may go by the San Pedro, Los Angeles and Salt Lake line directly to Los Angeles. This is the shortest route from Salt Lake City to Los Angeles and crosses a mountainous and desert country. Or one may go from Chicago to Omaha, then over the Union Pacific to Ogden and from there to San Francisco and then down to Los Angeles.

The fare over any of these routes is the same, namely \$62.50 for the round trip from Chicago. This rate applies if one goes by any one of these routes and returns by the same or by any other of them; or if one goes by one of them and returns by a southern route; or vice versa. To go by any one of them and to return by one of the northern routes an additional fare of \$15.00 will be charged. One cannot both go and return by one of the northern routes at the rates here quoted.

The time by all of the central routes is practically the same, namely, about three days unless stops are made on the way.

Details of the northern routes will be published next week; and later accounts of special trains will be given.

M. L. HARRIS, Chicago,
Chairman of the Committee on Transportation.

Correspondence

Danger of Trichinosis from Pork

To the Editor:—From time to time reports of outbreaks of trichinosis reach the Department of Agriculture, affording indisputable evidence that the extremely unhygienic custom of eating raw or imperfectly cooked pork is followed to some extent in the United States. On account of the danger involved in this custom, and on account of the common belief by persons aware of the existence of such a disease that pork inspected and passed under the federal meat-inspection law has been inspected for trichinae, the Department of Agriculture has issued the following notice:

COOK PORK WELL

Cases of illness sometimes occur from eating uncooked or insufficiently cooked pork which is infested with a microscopic parasite commonly known as trichina or flesh-worm, the scientific name being *Trichinella spiralis*. An average of 1 or 2 per cent. of the hogs slaughtered in the United States are infested with this parasite. When transmitted to human beings, trichinae may cause serious illness, sometimes resulting in death. Out of about 15,000 cases of trichinosis recorded in medical literature, most of which occurred in Europe, 830 resulted fatally.

No method of inspection has yet been devised by which the presence or absence of trichinae in pork can be determined with certainty, and the government meat inspection does not include inspection for this parasite. All persons are accordingly warned by the United States Department of Agriculture not to eat pork, or sausage containing pork, whether or not it has been inspected by federal, state or municipal authorities, until after it has been properly cooked.

A temperature of about 160° F. kills the parasite; therefore pork when properly cooked may be eaten without any danger of infection. Fresh pork should be cooked until it becomes white and is no longer red in color in all portions of the piece, at the center as well as near the surface. Dry salt pork, pickled pork, and smoked pork previously salted or pickled, providing the curing is thorough, are practically safe so far as trichinosis is concerned, but, as the thoroughness of the curing is not always certain, such meat should also be cooked before it is eaten.

A pamphlet giving information on the subject may be obtained on application to the Secretary of Agriculture, Washington, D. C.

I desire to ask the cooperation of the medical profession in giving publicity to the fact that pork in its raw state is a dangerous article of diet, and would also request that any cases of trichinosis which may come under the care of readers of this article be reported to this bureau. The information especially desired is the number of cases and of fatalities, date and place of occurrence of the outbreak, nationality of the patients, and source of the pork which caused the outbreak.

A. D. MELVIN, Washington, D. C.

Chief of the Bureau of Animal Industry, United States Department of Agriculture.

Anesthetic vs. Carbon Dioxid

To the Editor:—I have read with interest your editorial on "The New Theory of Shock," in THE JOURNAL, Feb. 11, 1911, page 424.

In 1896, I was the guest of the Neurological Society of London, when Mr. Waller demonstrated the effects of anesthetics on peripheral nerves. He showed that ether was the safest anesthetic and that it was better combined with carbon dioxid, as then the nerve showed more rapid response to electrical stimulation. When chloroform alone was used he showed that the peripheral nerves would not respond to electrical stimulation but that when the chloroform was mixed with carbon dioxid they readily responded to electricity and returned to normal. Ever since then, when I administer chloroform I give a little of the drug but keep my hand over the mask, thus making the patient inhale his own breath, in this way giving a certain amount of carbon dioxid.

I have always had good results with this method of anesthesia. Once I was present at an operation when the patient stopped breathing; she was resuscitated and the operation carried to a successful conclusion by administration of chloroform plus rebreathed air—carbon dioxid. In December, 1901, a colleague had a chloroform fatality in a patient with nephritis, and as I had recently had personal experience with nitrous oxid-ether anesthesia, I advocated its adoption in

this case; thereby I had the honor to introduce this form of anesthesia into Cincinnati with the original Bennett apparatus. This has been used continuously since at the Ophthalmic Hospital with satisfaction and success. Here, again, we have the carbon dioxid factor for the nitrous oxid only starts the anesthesia and then comes the ether, and by the closed rubber bag we again have the patient breathe carbon dioxid.

Your editorial explains Mr. Waller's demonstration of 1896 which showed that anesthetic plus carbon dioxid is safer than anesthetic alone, and that ether plus carbon dioxid is safer than chloroform in any combination.

W. EDWARDS SCHENCK, M.D., Cincinnati.

One Physician's Method of Increasing His Income

To the Editor:—I wish to contribute a statement to the subject of the remuneration of physicians:

I have been in the general practice of medicine since 1890 in Detroit on the same lot on which I was born. For twenty years I trusted all applicants for medical aid with results approximately as follows:

2 per cent. would pay me promptly.

13 per cent. could pay me only "when I went after them."

25 per cent. got out of paying me in every possible way.

60 per cent. did not pay me at all.

Jan. 1, 1910, I turned over a new leaf, and referred to other physicians all would-be patients who did not pay cash and had not approved credit. In 1910, the income from my practice was 98 per cent. greater than my average yearly income for the preceding twenty years and my expenses for 1910 were less than the average yearly expenses for the same period. Except for the fact that I gave my individual attention to my invalid mother for the three years prior to 1908, which cut into my practice considerably, I am unable to assign any other cause than this change of policy for the increase in income.

Since Jan. 1, 1910, I have had more time for reading, refreshment and sleep; and my present plan is preferable to that of those physicians whose ambition is to have the "largest practice" in a community at the cost of poor health or an early death.

JOHN L. IRWIN, M.D., Detroit.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FRENKEL'S REEDUCATIVE MOVEMENTS

To the Editor:—Kindly give me some information about Frenkel's exercises. On page 453 of THE JOURNAL, of February 11, are references to them, and I would like to know the method of using these exercises.

To the Editor:—In the abstract of an article on locomotor ataxia by Dr. Billings, I notice his recommendation of Frenkel's reeducation movements. What are these procedures?

DR. C. F. BOUCEK, Allegheny, Pa.

ANSWER.—References to the principal articles dealing with the reeducation of the muscles in tabes dorsalis by the method of Frenkel are given in THE JOURNAL, July 18, 1908, p. 239. An abstract of one of Frenkel's articles is given in THE JOURNAL, July 22, 1905, p. 294. Some account of the treatment is given in various books on the practice of medicine, and in a recent article by J. K. Mitchell, "Treatment of Locomotor Ataxia by Exercises of Precision," in the *Old Dominion Journal of Medicine and Surgery*, June, 1909; this article was abstracted in THE JOURNAL, July 10, 1909, p. 149.

The principle of the method is that while the lesions of tabes cannot be affected by treatment, the lost coordination can be more or less completely restored. This treatment consists in a psychic training of the powers of coordination, not in the attempt to increase muscular power, which often is not impaired. For this reason, the fatigue which may interfere with coordination is a nervous phenomenon, and should not be increased by having the patient attempt severe exercise. Patients with tabes do not feel fatigue readily, but indicate it by loss of precision in their movements, increase in pulse-rate, etc. The patient must be watched lest he go too far, but also should be encouraged to undertake movements of which at first he may not deem himself capable. One of Frenkel's exercises is to have the patient lie in bed and try to place his heel in a set of cup-like depressions in a board placed across

the foot of the bed. In other instances, definite spaces are marked on the floor and he is directed to take steps that will bring the heel on each mark.

Precision in each exercise is insisted on by Mitchell, who says: "The exercises, from the simplest to the most complicated, must be performed accurately, with the idea always before both teacher and pupil that to do the prescribed movements correctly and exactly is the task—not just to do it. If the patient walks, he walks not to reach a certain spot, but to walk in a certain fashion. Individual teaching is absolutely required in the beginning. After the first lessons, and when the patient is once able to do a little work on his feet, he may join a class and find not only that the stimulus of competition is a help, but that his observation of the errors of others assists him to correct his own."

The exercises should not cause fatigue. As a rule, twice a day and not longer than from five to fifteen minutes at a time, and in the severer cases not longer than two or three minutes, should be the limit. Improvement is said to follow in every case, but the amount depends on the length of treatment rather than on the degree of incoordination. Several months are generally necessary if the patient is not to fall back into his old habits. Even the severest cases, if uncomplicated, give a good prognosis with persevering treatment. Some of Frenkel's patients, with complete loss of the power of standing or walking, had these faculties entirely restored after from six to twelve months of treatment. Orthopedic apparatus may be needed in some cases. Uibeleisen utilizes the buoyancy of water to help in the exercises, as described in *THE JOURNAL*, Jan. 14, 1911, page 162.

FIBROLYSIN IN OPHTHALMOLOGY

To the Editor:—1. With what success has fibrolysin been used in corneal ulcer?

2. What is the dosage used either as instillation into the conjunctival sac or as subcutaneous injection?

B. L. SCHUSTER, Port Huron, Mich.

ANSWER.—According to "New and Nonofficial Remedies" and Wood's "System of Ophthalmic Therapeutics," fibrolysin is the trade name for a sterile solution of thiosinamin and sodium salicylate, and contains about 15 per cent. of the double salt. It is used as a substitute for thiosinamin. As it readily decomposes on exposure to the air it is commonly marketed in ampullas (Merck), or in bottles containing one dose only, to be given subcutaneously. A hypodermic injection of this remedy is more quickly absorbed, causes less pain and is more efficacious than thiosinamin alone. The remedy is rarely or never used for ulcer of the cornea, but is almost invariably prescribed for the scars remaining after the ulcers have healed. Its effect on any of these lesions is of little account unless used hypodermically or subconjunctivally; even then the remedy is of doubtful utility. Brandenburg has also tried the preparation in the form of intramuscular injections in corneal opacity following keratitis scrofulosa, keratitis purulenta, keratitis trachomatosa, in chronic uveitis and chronic retrobulbar neuritis.

2. Pick has prescribed a subconjunctival injection of 0.5 c.c. of a solution of 2 gm. of thiosinamin in 20 gm. of water and 4 gm. of glycerin, corresponding to 0.45 gm. of fibrolysin (1/5 of an ampulla) once a week.

GALL-STONE FAKE

To the Editor:—Several months ago *THE JOURNAL* exposed a gall-stone fake, whereby the patient who took the "treatment" passed a quantity of "gall-stones" or, rather, "soap-stones." A person whom I know took a similar "treatment" and passed 125 soft gall-stones (some as large as hazel-nuts). One of my patients, who is suffering from acute gastritis, was requested to try the gall-stone remedy. I want to locate the article to show him how the fake works. If you can tell me the number of *THE JOURNAL* which contains this article I will be obliged to you.

C. O. NELMS, M.D., Herscher, Ill.

ANSWER.—The "fake gall-stone trick" has been worked for some years by traveling fakers and more recently has been adapted to the "patent medicine" industry. In *THE JOURNAL*, Sept. 24, 1910, "Fruitola," one of the most widely advertised of the gall-stone cure fakes, was exposed, and this, doubtless, is the nostrum to which our correspondent refers. The analyses made by the Association's chemists indicated that Fruitola consisted essentially of anise-flavored olive oil and seidlitz powders.

GASOLINE FOR REMOVAL OF ADHESIVE PLASTER, ETC.

To the Editor:—Recent articles in *THE JOURNAL* make it a matter of conscience with me to announce that gasoline is the best solvent for the face of surgeon's adhesive plaster. The liquid should be freely applied with a wad of cotton. The plaster may then be removed without violence or depilation. So effectual is the solvent that the surgeon will not care whether the cementing material

does or does not come away with the cloth. It is merely a matter of a few wads of cotton more or less.

In this connection, I wish to say that gasoline is an antiseptic and that it further commends itself by its power of removing machine-grease from injured fingers and of dissolving ointments at later dressings. Nothing in my office is so useful, with the sole exception of my ledger. Polished instruments, thoroughly dried, will not rust after receiving a dash of gasoline. When desired, one may use it as a solvent for paraffin and coat any instrument with a film. A few drops poured on the water in the wash-bowl will enormously increase the detergent power of soap and water and will prevent the deposit of smeary curds on the side of the bowl, even when hard water is used. A discreet use of it on the front of the doctor's coat and waistcoat will often exalt his personal pulchritude. Gasoline will clean up the bearings of the bicycle or centrifuge and will quickly remove all gum from the doctor's typewriter—or her writing-machine.

A liquid so inflammable should not be exposed in quantity. An ordinary oil-can is a fine dispensing apparatus, but a screw-cap bottle, such as the perfumers use for toilet waters, is much more elegant. I myself use a bottle that I got from my own wife—to avoid explosion.

DAN MILLIKIN, M.D., Hamilton, Ohio.

To the Editor:—The articles of Drs. Beardsley and J. Scott Brown, in *THE JOURNAL*, January 28 and February 25, respectively, concerning the removal of adhesive plaster, are of general practical interest. The costliness of Dr. Beardsley's oil of wintergreen and the pain and friction required in Dr. Brown's method with ether cause me to suggest the use of gasoline for the removal of the plaster. For a number of years I have used gasoline in the following manner: Saturate a cotton sponge with gasoline and apply it directly to the posterior surface and the end of the adhesive plaster. This loosens the end effectively and allows it to be grasped by a pair of thumb forceps. Then, by gentle traction on the end of the plaster, it is lifted away from the surface, and by applying the cotton sponge at the junction of the skin and remaining plaster the plaster is easily and rapidly peeled off. If any of the adhesive material remains it is quickly dissolved and removed by gentle friction with the aforesaid sponge.

J. A. CANNON, M.D., Washington, D. C.

THE WORD APPENDICEALGIA

To the Editor:—Who was the author of the new word "appendicealgia?" Has anything been published on the subject? What are the symptoms of the disease?

A. C. J.

ANSWER.—The word appears in Dorland's "Medical Dictionary," as also does the abbreviated form "appendalgia." We do not know its author. Both are merely terms for appendicular colic, and as such they are treated in practically all works on appendicitis.

THE BRACHIAL PLEXUS

To the Editor:—Does the second thoracic nerve have anything to do with the formation of the brachial plexus nerve normally?

L. S. GRIFFIN, M.D., St. Louis.

ANSWER.—Yes.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Feb. 25, 1911.

Norman, Seaton, M.R.C., on his relief from temporary duty at Fort Wingate, N. Mex., ordered to Fort Bliss, Texas, for temporary duty.

Farrow, Edgar J., M.R.C., left Fort Morgan, Ala., en route to Fort Sam Houston, Texas, for temporary duty.

Wolven, F. Homer, D.S., left Fort George Wright, Wash., en route to Boise Barracks, Idaho, for temporary duty.

Freeman, Paul L., captain, left Fort Riley, Kan., for temporary field duty in Texas.

Ferenbaugh, Thomas L., lieutenant, left Fort Des Moines, Iowa, for temporary duty in field in Texas.

Powell, William A., captain, ordered to the Presidio of San Francisco for duty.

Thomasou, Harry D., captain, ordered to proceed at the proper time to Frankfort, Ky., for conference about Feb. 26, 1911, with the adjutant of Kentucky in connection with reorganization of the sanitary troops in that state.

Schlanser, A. E., lieutenant, left Walter Reed General Hospital, Takoma Park, D. C., en route to West Point, N. Y., for temporary duty.

Johnson, Thomas H., lieutenant, left Fort Baker, Cal., en route to Fort Barry, Cal., for temporary duty.

Dickenson, C. F., M.R.C., left Fort Barry, Cal., on ten days' leave of absence.

Pillsbury, Henry C., captain, left Jefferson Barracks, Mo., with recruits en route to Fort McDowell, Cal.

Phaleu, James M., captain, left Columbus Barracks, Ohio, with recruits en route to Fort McDowell, Cal.

Alleu, William H., lieutenant, left Fort Slocum, N. Y., with recruits en route to Fort McDowell, Cal.

Patterson, Edwin W., M.R.C., granted leave of absence for three months, with permission to go beyond the seas, to take effect on his relief from duty in the Philippines division.

Lynch, Charles, major, order directing him to proceed to the Philippine Islands for duty is revoked.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

OPTOMETRY EXAMINATION QUESTIONS

Since 1901, laws creating state boards for the examination of practitioners in "optometry" have been adopted in twenty-four states. These are: Minnesota (1901), California and North Dakota (1903), Oregon (1905), New Mexico (1906), Arizona, Montana, Idaho, Utah, Tennessee, Indiana and Nebraska (1907), New York, Vermont, West Virginia, North Carolina, Delaware, Maine, Washington, Iowa, Rhode Island, Kansas, Michigan and Florida (1909).

Many physicians are apparently indifferent to this invasion of the field of medicine, and regard these self-styled "optometrists" as merely spectacle fitters. As an evidence of the extent to which they are endeavoring to cover the entire realm of the diseases of the eye, the examination questions used by the boards in a number of states are quoted herewith. As will be seen, the questions relate, not only to the correction of errors of refraction, but to practically all diseases of the eye. The questions given are quoted verbatim from the examination papers.

California.—Explain the following: Aberration, Aniridia, Actinic, Steigmatism, Cyclophoria, Daeryoma, Erucleation, Epicanthus, Senopia, Epilation, Caruncle, Myosis, Mydriasis, Cycloplegia, Chromatism, Nyctalopia, Keratitis, Leucoma, Hordeolum, Anisometropia, Ontimetropia. Describe the dilator iris, its function and nerves. Name the principal arteries of the eye. State shortly what you know of cataract diagnosis, its varieties, cause and methods of removal.

North Dakota.—What is blepharitis marginalis? Describe the difference between hordeolum and chalazion. Describe simple corneal ulcer, giving etiology and prognosis. Describe cataract in general and one kind or more in particular. Describe glaucoma. What are the objective symptoms? Describe embyopia potatorum. How does the retina appear in a bad case of albuminuria?

Arizona.—What is blepharitis? If neglected, is it likely to become a permanent trouble? What is granular ophthalmia? What is conjunctivitis? What is iritis? What is glaucoma? What is choroiditis? Symptoms? What is apt to be the effect of rupture of the choroid?

Utah.—What is pterygium? trachoma? How would you detect cataract? What is it? What is nystagmus; anisometropia?

Oregon.—What is a cataract? How do you tell whether a patient has cataract or not? What is glaucoma and what are some of the most common symptoms? What is the choride and what are its uses? What is amaurosis? What does the motor oculi or third pair of nerves supply? What is cyclitis? What is the conjunctiva and what are its uses? What is the least and the most sensitive part of the retina and why? What are the lavator palpebrae and what are its uses?

Indiana.—What do you understand by the term homonymous hemianopsia? Describe the difference between the location of a ptergium and a cataract. Tell how to differentiate between a paralysis of an external muscle and a concomitant squint. What is a pupillary reflex? How would you examine the eyes to determine the pupillary action? Describe the action of an Argyll-Robertson pupil. How many layers has the retina? Name the most sensitive part of the retina. Describe the optic disk. From what source does the retina obtain its nourishment? Name the bones of the orbit. Describe the muscles of the eyelids. Where situated and what is the iris? Give its function. Name the humors of the eye. Describe the optic track from the eye to the optic thalamus.

Iowa.—What nerves supply the two muscles controlling the iris? Describe a cataract and tell what you know of the different kinds. What is keratitis? What is blepharitis? How does the ciliary muscle affect vision? How would paralysis of the fourth cranial nerve affect the eyes? How does the liver influence digestion? What are the functions of the thyroid gland?

Given a patient complaining of short periods of dimness of both near and distant vision, which are becoming more frequent, with occasional instants of complete darkness; these

periods sometimes accompanied by pain in eyeball and orbital region; also states that during these periods halos are seen around the lamp or similar spots of light; that he has never worn glasses for distance, but that of late he has been compelled to change his reading glasses to higher and higher power at frequent intervals. On examination you discover a "hazy" appearance of the cornea, pupil dilated, and immobile or at least sluggish of response, and on pulsating the eyeball you discover an abnormally high tension, what would you diagnose this case to be?

What is the generally accepted theory as to its cause? What is meant by the term monocular diplopia, and what is usually indicated by it? Describe briefly arcus senilis. Define cataract, giving symptoms, and tests you use when you suspect its presence. Describe pterygium. What is a chalazion? What is a sty? What is trachoma? What is meant by scotoma?

Delaware.—Describe a cataract and tell what you know of the different kinds. What is blepharitis marginalis? Describe simple corneal ulcer and give the most conspicuous symptom. Name a disease of the eyes on account of which emigrants are refused admission to this country; give reason. Describe glaucoma and give the principal diagnostic features. What is hemiopia and its cause? What are the rods and cones and their function?

Rhode Island.—Describe cataract in general and some one particular kind fully. What is choroiditis, retinitis, iritis, conjunctivitis, blepharitis marginalis? Describe simple corneal ulcer and give the most conspicuous symptom. Describe glaucoma and give the principal diagnostic feature.

Maine has as yet held no examinations. The secretary of the Maine Board of Optometry, however, announces that the subjects for examination will be: Practical Optometry, Practical Optics, Physiological Optics, Theoretic Optometry, Anatomy and Physiology, Diseases of the Eye.

The Vermont, 1909, Handbook on Optometry announces the following subjects for the examination in Montpelier, January, 1910: Theoretic Optics, Practical Optics, Objective Optometry, Subjective Optometry, Anatomy and Physiology of the Eye, Physiologic Optics, Pathologic Conditions of the Eye.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—First Weekly Meeting

General Subject for the Month: Non-Inflammatory Diseases of the Uterus and Appendages

ANATOMY

UTERUS: Shape, size, position, important relations. Broad, round and uterosacral ligaments. Portions of uterus. Structure; serous, muscular and mucous coats. Attachments of vagina to cervix. Blood-vessels and nerves. Lymphatics, three groups.

FALLOPIAN TUBES: Position, portions, structure. Blood-supply. Broad ligament, structure, relations, contents.

OVARY: Shape, size, position, relations, ligaments. Structure and functions. Blood-vessels, nerves, lymphatics.

PELVIC FLOOR: Skin, superficial and deep fascias, levator ani, transverse perineal, ischiocavernosi and sphincter ani muscles. Functions and mechanism of pelvic floor.

DISPLACEMENTS OF THE UTERUS

ASCENT, descent, lateral, anterior and posterior, flexion and version.

PROLAPSE: Pathology: Degrees of prolapse, changes in uterus, in adjacent organs.

Diagnosis. Symptoms, physical examination.

ANTEFLEXION: Incidence, causes.

Symptoms. Dysmenorrhea, sterility, leukorrhea. Treatment.

RETRODISPLACEMENTS, VERSION AND FLEXION

CAUSES: Injury to pelvic floor, subinvolution of uterus, too long on back after labor, overdistended bladder and rectum, dress, occupation, posture, chronic disease, etc.

SYMPTOMS: Backache, leukorrhea, headache, pelvic, rectal and bladder symptoms, menstrual disorders, nervous symptoms.

TREATMENT: Removal of cause. Replacement. Use of pessary and tampon. Operative treatment: Technic of shortening round ligaments, Montgomery, Barrett, Gilliam operations.

INVERSION OF THE UTERUS

Acute and chronic inversion. Symptoms. Treatment.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

MAINE: Portland, March 14-15. Sec., Dr. F. W. Searle, 806 Congress St.

MASSACHUSETTS: State House, Boston, March 14-16. Sec., Dr. Edwin B. Harvey, Room 159, State House.

WYOMING: Laramie, March 7-9. Sec., Dr. J. B. Tyrrell.

Illinois July and October Reports

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examinations held at Chicago, July 20-22, and October 19-21, 1910. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held July 20-22, the total number of candidates examined was 145 of whom 117 passed and 26 failed. Two candidates did not complete the examination. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Denver and Gross College of Medicine.....	(1908)		1
Georgetown University	(1909)		1
George Washington University.....	(1909)		1
Bennett Medical College, Chicago.....	(1910)		10
Chicago College of Medicine and Surgery.....	(1910)		15
Hahnemann Medical College and Hospital, Chicago.....	(2, 1909) (2, 1910)		4
Hering Medical College.....	(1910)		1
Jenner Medical College.....	(1910)		9
Illinois Medical College.....	(1910)		2
Northwestern University Med. School (1909) (8, 1910)			9
College of Physicians and Surgeons, Chicago (1909)	(16, 1910)		17
Reliance Medical College.....	(1910)		4
Rush Medical College.....	(1899) (1909) (11, 1910)		13
University of Louisville.....	(1910)		12
Tulane University of Louisiana.....	(1903)		1
University of Michigan, Homeopathic College....	(1910)		1
Homeopathic Medical College of Missouri.....	(1908)		1
St. Louis College of Phys. and Surgs. (1906) (4, 1910)			5
Barnes Medical College.....	(1910)		3
Jefferson Medical College.....	(1910)		3
Vanderbilt University	(1910)		1
McGill University, Quebec.....	(1910)		2
University of Athens, Greece.....	(1901)		1

FAILED

University of Arkansas.....	(1909)	1
Bennett Medical College, Chicago.....	(1909) (2, 1910)	3
Chicago College of Medicine and Surgery.....	(1910)	2
College of Medicine and Surgery, Physio-Medical, Chicago.....	(1910)	1
Hering Medical College.....	(1910)	1
Illinois Medical College.....	(1910)	1
National Medical University, Chicago.....	(1909)	2
College of Physicians and Surgeons, Chicago.....	(1910)	2
Keokuk Medical College, College of Physicians and Surgeons	(1908)	1
Sioux City College of Medicine.....	(1906)	1
Hospital College of Medicine, Louisville.....	(1904)	1
Barnes Medical College.....	(1910)	2
St. Louis College of Physicians and Surgeons	(1906) (1908) (3, 1910)	5
Meharry Medical College.....	(1910)	2
University of Naples, Italy.....	(1901)	1

At the examination held October 19-21, the total number of candidates examined was 81, of whom 34 passed and 42 failed. Five candidates did not complete the examination. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Bennett Medical College.....	(1910)		2
Chicago College of Medicine and Surgery.....	(1910)		3
College of Medicine and Surgery, Chicago.....	(1910)		1
Hahnemann Med. College and Hospital, Chicago..	(1910)		1
Jenner Medical College, Chicago.....	(1910)		2
Illinois Medical College.....	(1910)		1
Northwestern University Medical School.....	(1910)		2
College of Physicians and Surgeons, Chicago....	(1910)		9
Reliance Medical College.....	(1910)		2
Rush Medical College.....	(1910)		2
Indiana University	(1910)		1
University of Maryland.....	(1910)		1
Harvard Medical School.....	(1908)		1
Boston University	(1910)		1
St. Louis College of Physicians and Surgeons...	(1910)		1
Washington University, St. Louis.....	(1903)		1
University of Buffalo.....	(1895)		1
Meharry Medical College.....	(1910)		1
University of Berlin, Germany.....	(1901)		1

FAILED

University of Arkansas.....	(1910)	1
Bennett Medical College.....	(1909) (2, 1910)	3
Chicago Coll. of Medicine and Surgery (1908) (2, 1910)		3
College of Med. and Surg., Chicago....	(1908) (5, 1910)	6
Hering Medical College, Chicago.....	(1910)	1
Jenner Medical College.....	(1910)	2
Illinois Medical College.....	(1910)	2
National Medical University, Chicago.....	(1909)	2
College of Phys. and Surg., Chicago....	(1909) (4, 1910)	5
Reliance Medical College.....	(1909)	2
Keokuk Medical College, College of Physicians and Surgeons	(1906)	1
Sioux City College of Medicine.....	(1906)	1
Hospital Medical College, Louisville.....	(1904)	1
Louisville and Hospital Medical College.....	(1908)	1
Barnes Medical College.....	(1903) (1907) (3, 1910)	5
St. Louis College of Physicians and Surgeons	(1907) (1908) (2, 1910)	4
St. Louis University.....	(1907)	1
Meharry Medical College.....	(1910)	1

Alabama January Report

Dr. W. H. Sanders, Chairman of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, January 9-12, 1911. The number of subjects examined in was 10; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 42, of whom 18 passed and 24 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
University of Alabama.....	(1910)		5
Birmingham Medical College.....	(1910)		2
Atlanta College of Physicians and Surgeons.....	(1910)		1
Tulane University of Louisiana.....	(1909) (1910)		2
Tufts College Medical School.....	(1908)		1
University of Michigan, Coll. of Med. and Surg..	(1909)		1
Leonard Medical School.....	(1910)		1
Jefferson Medical College.....	(1904) (1909)		2
Medical College of South Carolina.....	(1906)		1
University of Nashville.....	(1909) (1910)		2

FAILED

University of Alabama.....	(2, 1909) (7, 1910)	9
Birmingham Medical College.....	(1910)	2
Atlanta College of Physicians and Surgeons.....	(1910)	2
Atlanta School of Medicine.....	(1909)	1
Louisville Medical College.....	(1907)	1
Tulane University of Louisiana.....	(1910)	2
Universities of Nashville and Tennessee.....	(1910)	1
Memphis Hospital Medical College. (*) (1908) (2, 1910)		4
University of Tennessee.....	(1908)	2

* No year of graduation given.

New Hampshire January Report

Mr. H. C. Morrison, regent of the New Hampshire State Board of Medical Examiners, reports the written examination held at Concord, Jan. 3-4, 1911. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 8, of whom 5 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Maryland Medical College.....	(1908)		75
Harvard Medical School.....	(1908)		81
Laval University, Quebec.....	(1909)		76
University of Athens, Greece.....	(1901)		75
University of Naples, Italy.....	(1906)		82

FAILED

Baltimore Medical College.....	(1909)	60
Dartmouth Medical College.....	(1896)	61
University of Athens, Greece.....	(1903)	55

Book Notices

PELLAGRA. By Dr. A. Marie, Physician to the Asylums, Department of the Seine, Paris, France. With Introductory Notes by Professor Lombroso. Authorized Translation from the French by C. H. Lavinder, M.D., Passed Assistant Surgeon U. S. P. H. and M.-H. Service, and J. W. Babcock, M.D., Physician and Superintendent State Hospital for the Insane, Columbia, S. C. Cloth. Price, \$2.50. Pp. 434, with illustrations. Columbia: The State Co., 1910.

The sociologic and economic importance of pellagra and the still unsolved mystery of its etiology are sufficient to ensure a welcome to any work presenting a good review of the subject. The comparative newness of the subject to the profession in the United States makes the preparation of such a book an unusually difficult task for an American physician. The authors, therefore, decided to present to English readers an authorized translation of the standard work of Marie, adapting it to American conditions by extensive additions and explanations. They were fortunate in securing the friendly interest of Lombroso, who shortly before his death wrote a preface for the work. The work of Marie is essentially an abbreviation of the larger work of Lombroso, so that the translators, in order to give a wider view of the etiologic theories, have introduced an account of the views of the antizestis. A chapter on symptomatology is also the work of the translators, so that the contributions to this work from their hands form an important feature of the book. The views on etiology are primarily those of Lombroso and connect the disease in some way with spoiled maize. The discussion of prophylaxis follows the same course as a necessary corollary. In this respect the European origin of the book necessitates a certain lack of adaptability to American conditions. The account of European varieties of maize and the methods of culture are of minor interest to the American farmer and sanitarian. The problems in this country concern more particularly the harvesting of unripe corn and the transportation of damaged or adulterated meal.

The authors give the conclusions and suggestions of Alsberg on the relations of corn culture in the United States to pellagra, but further study of this subject would be desirable. The account of symptomatology, diagnosis, prognosis and treatment is sufficiently complete. Two bibliographies, one English and the other foreign are appended. These are arranged chronologically and show the very considerably increased interest in the subject in the last few years, especially in the United States. The illustrations are mostly pictures of pellagrins, mostly Americans.

In general, the work may be unhesitatingly commended as a good presentation of this important subject.

THE PRACTICE OF SURGERY. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital. Cloth. Price, \$7 net. Pp. 1015, with 682 illustrations. Philadelphia: W. B. Saunders Co., 1910.

This book is novel in the manner of its conception and in being a text-book for the graduate who has surgical aspirations and not for the student. It is a text-book on clinical surgery. The principles of surgery are not considered, and preliminary training in pathology, bacteriology and the principles of surgery is presumed. Mumford narrates his experiences with surgical operations extending over a considerable number of years, describing what, in his opinion, are the best procedures to adopt for a given case. Useless gossip and verbose descriptions of every known procedure, good, bad or indifferent, are wisely omitted. The book cannot fail to prove really useful to anyone who is looking for light in this field.

Surgical diseases are taken up in the order of their interest, importance and frequency, the sequence followed being, first, appendicitis; then surgical diseases of the abdomen and its contents, of female organs of generation, of the genito-urinary organs, of the chest, face and neck, of the head and spine; and minor surgery with diseases of structure. In the treatment of appendicitis the author prefers the muscle-splitting operation; he advocates removing the appendix (after the abdomen is opened for other reasons) if there is cause to suspect that it may become involved through the subsequent spread of peritoneal inflammation and the formation of adhesions about it. This is one of the few instances in which the author has allowed himself to indulge in an excursion into

the field of debatable problems. Controversial points, such as the relative merits of cholecystostomy and cholecystectomy, are discussed briefly but pointedly, and the reader receives practical, dependable information on the subject.

One of the especially good features of the book is that the general cardinal principles for operation—gall-bladder operations, for instance—are stated, and then the special indications for performing a particular operation—as cholecystostomy or cholecystectomy—are given. The author has displayed unusually good judgment in his selection of operations. Every detail of surgical progress has been noted, applied, accepted if good and rejected if worthless.

The illustrations are excellent, numerous and helpful; they are elucidating and not confusing.

THE DISEASES OF INFANTS AND CHILDREN. By Edmund Cautley, M.D., Cantab., Senior Physician to the Belgrave Hospital for Children. Cloth. Price, \$7 net. Pp. 1042. New York: Paul B. Hoeber, 69 East 59th Street, 1910.

Many new books on diseases of children have appeared in the last few years, and English writers have made three notable contributions. The books of Thompson and of Still made no attempt at completeness; they dealt at great length with things in which the authors were especially interested, and entirely passed over equally important subjects. Thus, while they are of value to the practicing physician, they cannot be considered as text-books. Cautley felt that "a new, systematic and up-to-date book on the subject was required," and the present volume is the result. This book is distinctly a British product. The British pediatricians are greatest as clinicians; they keep us constantly at the bedside rather than in the laboratory, but in spite of this reversal of the present tendency, we recommend this book as a text-book on diseases of children, both to the practicing physician and to the student. It is a marvel of completeness and thoroughness; the style is clear and forcible; the arrangement is excellent and the matter is strictly up to date, containing, for example, references to Flexner and Lewis' latest work on poliomyelitis. One marvels how the author has been able to keep his mind wholly uninfluenced by the epoch-making work that has been done recently in Germany on the subject of infant-feeding, but this peculiarity is shared by all other English and most American writers. Throughout the book one is constantly impressed with its completeness and with the systematic arrangement of the subjects. Thus at the end of the book we find three chapters on the ear, the eye, and the skin in childhood. It would be a pleasure to speak in detail of the chapter on nervous and mental diseases, which covers nearly 200 pages, and of many other equally valuable portions, but space will not permit. The author does not believe in pictures—"the kindergarten method of teaching," as he calls it—and so none appears in the book. The binding and the typographic appearance are all that could be desired.

DISEASES OF THE HEART AND AORTA. By Arthur D. Hirschfelder, M.D., Associate in Medicine, Johns Hopkins University. With an Introductory Note by Lewellys F. Barker, M.D., Professor of Medicine, Johns Hopkins University. Cloth. Price, \$6. Pp. 632, with 329 illustrations. Philadelphia: J. B. Lippincott Co. (1910).

This volume is destined to become a valuable reference work for the practitioner and a more familiar and necessary companion to the teacher of internal medicine. A cursory comparison of this book with Samson's "Diseases of the Heart and Aorta," written twenty years ago, is instructive. In the older treatise symptomatology received more attention, and, of the methods of examination, auscultation and percussion were strongly emphasized. The sphygmograph was expounded at great length and an importance attached to its arterial tracings that is no longer conceded. Turning from the old to the present volume we note the dominant influence of physiologic studies, including the results of experimental observation. The arterial tracings have been replaced by simultaneous tracings of heart, artery and vein by which alterations and irregularities of cardiac rhythm can be definitely analyzed. The arterial sphygmomanometer has developed a great field of knowledge. The x-ray has given a clear photograph of heart and aorta. The discovery of the bundles of His has revealed many of the secrets of arrhythmia. The electrocardiogram has made its debut and promises well. The author has written a discriminating chapter on drug

treatment and has successfully condensed the methods and merits of gymnastics and hydrotherapy. A chapter on the effect of anesthetics on the heart and circulation and on the choice of anesthetics would be a desirable addition. The arrangement of the contents is sometimes difficult to follow and the inclusion of case reports is a doubtful asset. But on the whole the book represents one of the most solid contributions of recent years to medical literature.

A MANUAL OF NURSING. By Margaret Frances Donahoe, Formerly Superintendent of Nurses and Principal of Training School, Philadelphia General Hospital. Cloth. Price, \$2 net. Pp. 489, with 52 illustrations. New York: D. Appleton & Co., 1910.

This manual takes the nurse through the whole course of her hospital training and makes the application of the knowledge thus acquired to her private work. The author, being herself a nurse and for many years a superintendent of nurses, has overlooked little that should be incorporated in such a book. Anatomy is not considered but diseases and their symptoms are described simply, so that the nurse may have a sufficient understanding of their nature to assist physicians. Critical symptoms or turns in the patient's condition are described, and what to do in emergencies so that the nurse is forearmed as well as forewarned in regard to exigencies. The nurse's point of view is the one constantly kept in mind, and the book, therefore, has not the fault of some books on nursing written by physicians, which enter too deeply into matters that belong properly in the province of the physician and not in that of the nurse. The author's style is simple and concise, and easily understood by the beginner. The manual is a good one.

PRÄKTISCHE KINDERHEILKUNDE IN 36 VORLESUNGEN FÜR STUDIERENDE UND ÄRZTE. Von Dr. M. Kassowitz in Wien. Paper. Price, 18 marks. Pp. 653, with illustrations. Berlin: Julius Springer, 1910.

This book is in the form of a series of thirty-six lectures. Although not a complete treatise, it covers the more important subjects admirably with perhaps one exception, that of the gastro-intestinal diseases, which are all described in a single chapter. The book is of especial value since it represents the author's personal experiences with all of the conditions described, and one feels that it is his text-book, his point of view, his therapy, and not a mere compilation of the theories and practices of other authors.

The chapters on rickets are good. Kassowitz more than any other writer has been the advocate of phosphorus in the treatment of rickets, and goes into the subject, perhaps even to greater length than necessary. The four lectures devoted to rachitis and related conditions give one a good insight into the complex question of the relationship of rachitis and tetany, splenic anemia, etc. The chapter on congenital syphilis is also very instructive. Taken as a whole, the book is a valuable addition to pediatric literature.

THE CARE AND TRAINING OF CHILDREN. By Le Grand Kerr, M.D., Author of "Diseases of Children," etc. Cloth. Price, 75 cents net. Pp. 233. New York: Funk & Wagnalls Co., 1910.

The book deals with children after the age of infancy on to adolescence. The author speaks not only as a physician, but also from the experience of a parent who has given the subject careful study and attention, so that matters pertaining to the physical welfare of the child are entered into, such as clothing, diet, bathing, sleep, the bowels and teeth, and the lighting, heating, ventilation of living-rooms, education, parental relations, government, punishment, moral training, amusements, literature, friends, etc., and the important questions of sex enlightenment and the matter of evil habits are discussed in a practical, common-sense way. The book should be helpful to parents in the training of children.

DIÄTETIK INNERER ERKRANKUNGEN ZUM PRAKTISCHEN GEBRAUCH FÜR ÄRZTE UND STUDIERENDE. Von Dr. Theodor Brugsch. Paper. Price, 4.80 marks. Pp. 245. Berlin: Julius Springer, 1911.

The author of this little work avoids theoretic discussions, and after a brief account of the physiology of nutrition enters at once on the description of the dietetic treatment of the various forms of disease. The pathology is briefly considered and the treatment is described in such a way as to give a clear statement of the general principles and at the same time sufficient detail for the practical guidance of physicians acquainted with German.

Medicolegal

Admissibility in Evidence of Physician's Account Books—Corroboration in Action Against Administrator

The Supreme Court of New Mexico affirms a judgment for the plaintiff in the case of Radcliffe vs. Chavez (110 Pac. R. 699), an action by a physician, against an administrator, on a claim for services. The court says that the testimony showed that the initial memorandum of professional visits was in two physicians' pocket day-books, which were received in evidence, but, while recording all the visits, they failed after a certain date to record the charges for such visits. However, two other books, called ledgers, might be classed as books of original entry and be considered admissible in evidence to the extent that the entries in them were original entries, if otherwise competent under the statute.

With reference to a statutory provision that the books of account of any merchant, physician, or other person doing a regular business and keeping daily entries thereof may be admitted in evidence as proof of such accounts on condition that he kept no clerk, or else the clerk is dead or inaccessible, on proof, by his customers, that he usually kept correct books, etc., the court holds that the fact that a physician's wife from time to time made entries in such books from his dictation did not constitute her a clerk so as to render the books inadmissible. The word "clerk," as used in the statute, implies more than a mere amanuensis. It means one having knowledge of the business so as to be able of his own knowledge to testify as to it. And as to proof by customers, it is sufficient if it be shown by them that during a period of years they have always found their accounts as tendered correct, coupled with testimony that such accounts were taken from the books in question; it not being essential that the customers shall have actually examined such books and compared their accounts with them. Where, therefore, as in this case, two patients come in and testify that their accounts as presented were uniformly correct, and where it is shown that such accounts were drawn from the books in question, the law infers from the treatment of the two a like treatment of the remainder, and considers the verity of the books established.

Then, books of account shown to conform to the requirements of the statute referred to are admissible in evidence, and, when so admitted in a suit against an administrator, may constitute "other material evidence" corroborating the claimant, as required by statute in an action against an administrator.

But the claimant went further in this case. His account was composed of several classes of items: (1) 167 visits for which \$5 a visit was charged; (2) extra charges for some sixteen ordinary examinations of urine at \$5 each; (3) five microscopic examinations necessitating trips to Albuquerque for which extra charges of \$25 each were made; (4) washing out bladder six times at \$10 each; (5) for limiting practice in order to stay near patient sixty-nine days at \$5 per day; (6) for all-day and all-night service on the date of the patient's death \$50. The plaintiff testified to the correctness of all of these charges, but, being of six separate classes, corroboration of all of one would not be sufficient to sustain the other.

Besides the claimant's books of accounts which, as has already been seen, were properly received in his behalf, and, when so received, were material evidence corroborating his testimony, the testimony of his wife showed that he had attended this patient as physician a number of times during the period charged for. Another physician testified to a knowledge of the case and to the necessity for examination of the urine, both ordinary and microscopic, to the fact that six of the former had been made with his help and to the reasonableness of the charges made therefor, to the presence of the claimant there night and day of the date of the last charge, to the fact that his presence was for the purpose of keeping the patient alive until some one who had been notified, could arrive, and to the reasonableness of the charge of \$50 therefor, to his knowledge of the fact that the claimant had for a considerable period previously to the death of this patient limited his practice to him, and declined outside prac-

tice, and that a charge of \$5 a day was a reasonable charge for such limitation. He further testified that \$2 was a reasonable price for the ordinary visit of a physician. A woman testified that she was nurse in attendance on the patient for two months and eleven days before his death, and that during that period, on the patient's request, the claimant attended, making sometimes two and sometimes three visits a day and sometimes at night, and that from about the beginning of such period the patient asked the claimant to be in attendance on him constantly during the time until he either died or got well. This last was corroborative of the claimant's testimony to the effect that he had on the special request of the patient limited his practice so as to be near him during the last sixty-nine days of his illness. The court deems this testimony, in connection with the books sufficient to corroborate and sustain all six of the classes of items above mentioned.

Testimony of a witness as to seeing the claimant's buggy stop at the patient's house was competent evidence as corroborative of the claim that he visited the patient professionally.

Practicing Medicine—Assignee of Claim of Unauthorized Practitioner

The Court of Civil Appeals of Texas affirms a judgment for the defendant in the case of Barnes vs. Sparks (131 S. W. R., 610), where he was sued on a note for \$100 dated in January, 1905, and pleaded that the note was given for professional services rendered and to be rendered by one Dr. Dunnagan as a physician, and alleged that the latter was not at the time the note was given authorized to practice medicine in Hamilton county, where the note was executed, because he had not caused his license to practice medicine to be recorded in that county.

The defendant testified that he was afflicted with asthma and that Dr. Dunnagan came to his residence in Hamilton county, represented himself as a physician and agreed to cure him for \$100; that he accepted the offer and executed to Dr. Dunnagan the note sued on; that immediately after the execution and delivery of the note Dr. Dunnagan gave him a dose of medicine, and that he thereafter received other medicine in pursuance of Dr. Dunnagan's contract, and did not know who sent it, unless it was Dr. Dunnagan. He also admitted that at the time he executed the note he signed a written contract with a medical institute, which was signed by the latter by said Dunnagan as diagnostician. Dr. Dunnagan testified that he did not prescribe for the defendant or give him any medicine; that he examined him, diagnosed his case; that he was prescribed for by a physician of the institute at Dallas, and that the medicine was furnished by that institute. The court thinks that the defendant's testimony warranted the conclusion that Dr. Dunnagan was practicing medicine on the occasion in question, and that at least part of the consideration of the note was for professional services rendered by him at that time.

Furthermore, the court overrules the contention that the laws of Texas do not make it unlawful for an assignee to maintain an action to recover for professional services of a physician prohibited by the statute from practicing. It holds that such defense is available against an assignee, unless such assignee is entitled to protection as an innocent purchaser and bona fide holder.

Refusal to Submit to Treatment Must be Unreasonable to Affect Verdict

The Supreme Court of Appeals of Virginia, in Roanoke Railway & Electric Co. vs. Sterrett (68 S. E. R., 998), a personal injury case brought by the latter party, holds correct an instruction which told the jury that if they believed from the evidence that the plaintiff unreasonably refused to submit to the treatment of physicians, or unreasonably refused to follow their instructions in regard to her injuries, and that in consequence of her refusal so to do her injury was aggravated and increased, then she could not recover damages to the extent that her conduct resulted in damage to her, and which might have been avoided and prevented by submitting to the treatment and following the directions of her physicians. The

court says that objection was made to the interpolation of the word "unreasonably" in the instruction. The physicians alluded to were the surgeons of the defendant company employed by it to attend the plaintiff. She had also engaged physicians of her own selection, and by the instruction as originally offered was held bound at the risk of curtailing her recovery of damages to submit to the treatment prescribed by the defendant's surgeons whether reasonable or unreasonable. The amended instruction correctly told the jury that the plaintiff's right of recovery could be affected only by her unreasonably refusing to submit to the treatment or follow the instructions of physicians.

One Registration Only Required

The Court of Appeals of Georgia holds, in Jones vs. State (69 S. E. R. 315), that an indictment or accusation, charging a violation of section 1479 of the Political Code of Georgia of 1895, in that the defendant did practice medicine without registering in the office of the clerk of the superior court, is fatally defective, if it fails affirmatively to allege that the county in which he is charged with having practiced medicine without registering is the county wherein he resided. The law requires only one registration by a practitioner of medicine before he commences to practice medicine in Georgia, and that registration is required to be made in the office of the clerk of the superior court of the county wherein the practitioner resides.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

February 18

- 1 *Proper Management of Foundlings and Neglected Infants. H. D. Chapin, New York.
- 2 Syphilis and the Nervous System, with Remarks on the Wassermann Test and Salvarsan. W. M. Leszynsky, New York.
- 3 *Primary Sterility in Women. A. J. Rongy, New York.
- 4 Epidemic Poliomyelitis. E. E. Mayer, Pittsburg.
- 5 A Theory of the Etiology of Trachoma. D. S. Kaustoroom.
- 6 An Improvement in Audiometers. F. A. Faught, Philadelphia.

1. **Proper Management of Neglected Children.**—The plan of work followed by the Speedwell Society of Morristown, N. J., is described by Chapin; the infants are boarded out under supervision of visiting nurses. He shows that if the plan could be carried out generally in the place of institutional work for feeble, neglected babies, a large majority of them would be saved. No capital is required to be tied up in a large building or plant. The plan has proved to be economically sound as well as practically efficient.

3. **Primary Sterility in Women.**—The observations and conclusions arrived at in Rongy's paper are based on an analysis of 120 patients who presented themselves for treatment for primary sterility during the past ten years. Only those cases are included in which both husband and wife were examined. In eight patients there was sterility in either a brother or a sister. Three of these patients presented a few symptoms that pointed to some congenital defect of the genital organs. The husbands of these patients had active and living spermatozoa. Nearly 85 per cent. of the women suffered from dysmenorrhea, particularly during the first two days, a fact which goes to prove that the pain was not merely due to mechanical obstruction, but that some derangement of the genital tract, most probably of inflammatory origin, was present, for were it only of mechanical origin the pain would have ceased as soon as the full flow was established.

Most of the patients attended to their housework. Two were teaching school, six had millinery shops, eight divided their time between house work and small stores they owned, two were stenographers, one a dentist. Prior to marriage the majority of the patients had been engaged in sedentary occupations in close quarters and for prolonged hours, were rather anemic, and not in a robust state of health. Fifteen were

under 20 at the time of marriage, fifty-three between 20 and 25, thirty-eight between 25 and 30, seven between 30 and 35, four between 35 and 40 and one over 40. This is the proper ratio of the ages and therefore has no special significance. While some authors state that the marriages of near relations are more likely to be barren, in Rongy's experience this is not the case. Nine patients practiced masturbation daily from about the age of 16 until they married. Two continued the practice after marriage, stopping during the menstrual flow only. This continued practice resulted in complete sexual anesthesia in seven patients. In the presence of vaginismus sterility is the rule. Dyspareunia is usually a very prominent symptom in sterility. Thirty-two of the patients suffered from it.

In the 120 patients who came under Rongy's observation for the treatment of sterility he found that eighty-five, or 82 per cent. of the husbands admitted having been treated for gonorrhea for a period ranging from six weeks to two years. Eighteen had double epididymitis, with absolute sterility; twenty-one had single epididymitis, with absolute sterility in nine instances; nineteen gave a history of prostatitis and seminal vesiculitis; six of whom were operated on for stricture of the urethra, and three of whom suffered from azoospermia; the remaining twenty-seven evidently had anterior urethritis only, and in all spermatozoa were found. Three patients suffered from varicocele. In one patient the removal of this cured sterility of six year's standing. All the patients had azoospermia before the operation. Spermatozoa were found in all three cases three weeks after the operation. A small proportion of husbands suffer from azoospermia and oligospermia, which cannot be accounted for pathologically, and of necessity are classified as functional disturbances only. Closer inquiry brings out the fact that usually these patients have been excessively masturbating for a long period of time, with the result that the glandular structure of the testicles cannot supply the demand made upon them. Absolute impotence was found in three patients, two as the result of organic specific disease, one as the result of excessive masturbation. It is absolutely certain, says Rongy, that nearly 60 per cent. of women who suffer from primary sterility give evidence of gonorrheal infection. Next to the inflammatory processes the various displacements of the corpus and cervix uteri are the most important etiologic factors in primary sterility.

New York Medical Journal

February 18

- 7 Nature of Neurasthenia and Acute Insanity. C. P. Noble, Philadelphia.
- 8 Twilight Talks with the Doctor. G. F. Butler, Chicago.
- 9 Phrenology and Its Founder: The Claims of Franz Joseph Gall on the Homage of Scientific Posterity. J. Knott, Dublin.
- 10 Subphrenic Abscess. H. Roth, New York.
- 11 *The Putrefactive Products of the Intestinal Canal as Etiologic Factors in Certain Forms of Neuralgias. J. Funke, Atlanta, Ga.
- 12 Postdiphtheritic Paralysis of Accommodation. J. Clothier, Philadelphia.
- 13 Simple Technic for Preparing Salvarsan in Oily Suspension. A. J. Hart, New York.
- 14 Origin of Cancer and Its Control. W. McDowell, Seattle, Wash.

11. **Intestinal Putrefaction.**—The conclusions to be drawn from Funke's paper are that a limited number of cases of neuralgia are due to putrefaction products, that these neuralgias are not due to the indican, that the mere presence of indican does not signify that a disease exists, and that it is only when the precursors of this substance are not oxidized to indican that disease results.

Boston Medical and Surgical Journal

February 16

- 15 The Aims and Possibilities of Neurologic Hospitals. P. Bailey, New York.
- 16 The New Neurologic Service at the Boston City Hospital. Its First Year's Work. P. C. Knapp, Boston.
- 17 The Youthful Psychopath. J. W. Courtney, Boston.
- 18 *Clinico-Pathologic Data on Bladder Tumors. L. Davis, Boston.
- 19 *Transperitoneal and Suprapubic Approach to Tumors of the Bladder. C. L. Scudder, Boston.
- 20 *Present Status of Intravesical Operations for Tumors of the Bladder. H. Binney, Boston.
- 21 Examination of the Nose and Throat in Relation to General Diagnosis: Results in Asthma Following Nasal Operation. H. Z. Giffin, Rochester, Minn.

18. **Data on Bladder Tumors.**—In only twenty-eight of forty-one cases of tumors of the bladder collected from the records of the Massachusetts General Hospital by Davis were microscopic examinations of the specimens recorded. Twenty-five belonged to the epithelial group, two were sarcomata, one was a myoma—showing a great preponderance of epithelial tumors. Seventeen of the specimens of epithelial tumors which had been preserved were personally studied; six of these showed satisfactory evidence of epithelial infiltration of the bladder wall and were classed as carcinomata; eleven or nearly two-thirds, were regarded as papillomata. Thirty-seven patients were operated on; in nine the operation resulted fatally within a month, giving an operative mortality of 25 per cent. In none of the malignant cases was a radical operation, as it is now understood, attempted, but merely such palliative measures as curettage, cauterization and partial removal resorted to, with the result that death from the disease occurred in every case within six months.

Of the twenty-eight patients who survived the operation, twenty-six were traced. Fourteen, or just 50 per cent., died of the disease, one of these surviving for five years in spite of repeated recurrences before finally succumbing. Twelve patients, including those who died of other diseases, had no recurrence so far as could be learned. Nine are known to have survived the operation one year. Seven survived the operation two years. Five survived the operation eight years. Three of the latter died of other diseases, leaving two patients living and well at the time of the report, respectively eight and ten years after operation. Of the five patients who survived for eight years, in only three were there pathologic reports on the specimens removed; one was a myoma, two were papillomata. Of the eight cases of papillomata in which the specimens were personally studied by Davis, one patient died as the direct result of the operation, one died of intercurrent disease eighteen months later without evidence of recurrence, one died two months after secondary operation for recurrence, one five years later of recurrence. One patient reported perfect health one year after operation, but has not been heard from since. One patient cannot be traced; one patient is well eight years after operation. One patient operated on in 1892, and again in 1897 for recurrence, has remained well up to the present time, thirteen years since the second operation. Davis has operated on fifteen patients. Nine had papillomata. Three were cases of cancer of the nodular, infiltrating kind. There was no operative mortality in these fifteen cases. Transperitoneal cystotomy was done in five cases, and simple suprapubic cystotomy in ten.

19. **Transperitoneal and Suprapubic Approach to Tumors of the Bladder.**—Scudder finds that, practically speaking, all tumors of the bladder cause death of the patient sooner or later. The supposedly benign papilloma causes death by hemorrhage or pyelonephritis. All so-called benign tumors are potentially malignant. A papilloma which shows no sign of malignancy may become malignant. If the operative deaths and the rapid recurrences of bladder tumors are combined under the one head of operative failures, these failures have occurred in 29 per cent. of the so-called benign tumors and in 46 per cent. of the cases of carcinoma. Of the urethral operations for papilloma, only 28 per cent. of the patients remained cured more than one year. Of the partial resections, 37.5 per cent. of the patients remained well more than one year. Of fifty-three patients with papilloma operated on through the urethra or suprapubically, or by partial resection, nineteen had recurrence. The statistics of Nitze in 1901 and 1905 are not corroborated by detailed reports of the cases and Scudder regards them as unusually fortunate results. In view of the above facts pointing to the great malignancy of papilloma of the bladder, and because of the poor surgical results that hitherto have been obtained by operative treatment, Scudder believes that we should regard, from an operative standpoint, all papillomata of the bladder as potentially malignant, and that they should be treated as if they were malignant growths, whether there are evidences of malignancy in any individual case or not. Certain of the small, apparently benign papillomata may safely be removed by the suprapubic method, but should be removed even with this

approach by a good margin of excised, healthy tissue. The transperitoneal approach to the bladder will enable the surgeon to attack successfully cases of malignant tumor of the bladder which, without this approach, might be forced to a more dangerous extraperitoneal cystectomy.

20. Intravesical Operations for Tumors of the Bladder.—According to Binney, the published results of intravesical operations do not, at present, warrant the adoption of the method for the removal of primary growths, except in cases of very small tumors or in patients in whom a suprapubic cystotomy under an anesthetic is contra-indicated. In cases of repeated recurrences after suprapubic operations, the method is to be recommended over the performance of frequent suprapubic operations.

American Medicine, Burlington, Vt.

January

- 22 The Physician in Court. L. R. Graham, New York.
- 23 Indian from the Standpoint of the General Practitioner. H. R. Harrower, Chicago.
- 24 General Anesthesia. A. M. Hellman, New York.
- 25 Memorial Address of Dr. Abram Brothers. R. Abrahams, New York.
- 26 Acute Labyrinthine Suppuration. O. Glogau, New York.
- 27 Four Cases of Cesarean Section. A. J. Rongy, New York.
- 28 Pellagra in New Mexico. D. H. Galloway, Roswell, N. Mex.
- 29 Hernia of the Lung, with Report of a Case of Spontaneous Hernia of the Right Lung. E. Adams, New York.

Philippine Journal of Science, Manila

October

- 30 *Tolerance for Alkalies in Asiatic Cholera. A. W. Sellards, Manila.
- 31 Effect of Concentration of Solution in Collapse in Asiatic Cholera. A. J. McLaughlin and A. W. Sellards, Manila.
- 32 *Chemical Composition of Blood in Asiatic Cholera. H. Aron, Manila.
- 33 Cholera and Cholera-Like Vibrios Encountered in the Philippines. A. J. McLaughlin and E. R. Whitmore, Manila.
- 34 *Specific Cure of Yaws with Salvarsan. R. P. Strong, Manila.

30. Tolerance for Alkalies in Asiatic Cholera.—The most important findings reported by Sellards are the tolerance for alkalies and the change in the course of the disease. This tolerance, he says, may be dependent either on the cholera infection, or on the accompanying nephritis; apparently it is related more closely to the uremia than to the enteritis. The condition will be of more general interest if it proves to be present in uremia from other causes than if it is specific for cholera. Examination of the urine in cholera showed an almost constant increase in the excretion of ammonia. Cholera patients showed a definite tolerance of alkalies, a considerable excess of sodium bicarbonate being required to render the urine alkaline as compared with normal individuals. Within certain limits, the administration of alkalies not only failed to render the urine alkaline, but the acidity was even increased, as measured by titration. Following the injection of alkalies, there was sometimes a sudden and marked increase in the excretion of urea. The early administration of alkalies practically eliminated death from uremia.

The choice of alkali for treatment may vary somewhat in the different stages of cholera. The chief advantage of the normal carbonate would depend on its ability to absorb carbon dioxide, but apparently few deaths occur primarily from failure of the internal respiration. Sodium acetate may have some advantages, especially for the stage of collapse. As much as 80 grams within twenty-four hours have been injected, but perhaps this amount is slightly excessive in certain cases. As a general routine, sodium bicarbonate has been the most effective of the three salts. Its administration in collapse has several advantages and, in selected cases, concentrations of from 1 to 1.5 per cent. may be used. A weaker solution would probably be chosen which would be suitable for routine use in all cases of collapse. Early in the stage of reaction, as much as 60 gm. may be given within twenty-four hours. The most important indication for discontinuing its administration is the development of muscular cramps or twitchings. These symptoms may appear, although the urine remains acid, and may be considered as a reaction to the alkali. Several cases in which excessive amounts of alkali were tolerated without the appearance of this symptom terminated unfavorably.

There was a wide variation in the amount of alkali which resulted in the production of muscular contractions. The

quantity apparently varied in direct proportion to the severity of the disease, although Loeb has shown that the precipitation of the calcium salts by a carbonate gives rise to muscular contractions. If administration of alkalies is delayed until uremic symptoms develop, secretion of urine follows promptly after injection of sodium bicarbonate, but the final termination is usually unaltered. The most important single factor in determining the amount and frequency with which alkali should be injected is the quantity of urine excreted. Sodium bicarbonate, in 1.5 per cent. solution, in 2 liter quantities, has been injected as soon as patients come out of collapse, and repeated at intervals of from twelve to twenty-four hours until a free secretion of urine follows. Aside from mild convulsions, the only other untoward symptoms following the injection of alkali was a temporary hematuria. This occurred in three of the fifty-five cases; it was slight in amount and persisted for from two to four days.

32. Composition of the Blood in Asiatic Cholera.—In the stage of collapse in cholera a loss of water in the blood was regularly encountered by Aron, accompanied by a corresponding loss of chlorids (salts). This water loss was constantly high in the blood of persons who died of cholera. In the later stages of the disease, the blood again shows an almost normal content of water, but the salts are not replaced to the normal amount. Therefore, the blood at this stage has a diminished salt content and is hypotonic.

34. Specific Cure of Yaws.—After using salvarsan in twenty-five cases of yaws, Strong believes it to be an ideal specific for this disease. Three or four days after the injection of the drug, the granulomatous lesions begin to disappear and in the course of from ten to twenty days they usually have disappeared entirely leaving a perfectly smooth, pigmented skin where the lesions previously existed. The absorption of tumor masses measuring several centimeters in diameter and about a centimeter in thickness in so short a time, and under the influence of no local treatment whatever, has been striking and surprising. Even in cases in which large granulomatous masses or deep ulcerations existed, these were healed within from two to four weeks. None of the patients has shown any signs of relapse, although each received but a single injection, and over four months have elapsed since most of them were inoculated.

Mississippi Medical Monthly, Vicksburg

February

- 35 The Physician's Duty to the Public. T. Purser, McComb City.
- 36 Uses and Abuses of Quinin. F. M. Brougher, Belen.
- 37 The Differential Diagnosis in Coma. A. K. Naugle, Abbott.
- 38 Why Doctors Should Join Their County Medical Societies. G. C. Phillips, Lexington.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

January

- 39 Acromegaly: Pierre Marie's Disease. P. E. Launois and M. H. Cesbron, Paris.
- 40 *Present Status of Drug Addiction in the United States. L. F. Kebler, Washington, D. C.
- 41 *U. S. P. 1910. How May It Be Constructed? O. T. Osborne, New Haven, Conn.
- 42 Disability from Fracture of the Femur. O. H. Allis, Philadelphia.

40. Drug Addiction in the United States.—The thoughtful and foremost medical men have been and are cautioning against the free use of morphin and opium, particularly in recurring pain; and the amount they are using is decreasing yearly. Kebler claims that, notwithstanding this fact, and the fact that legislation, federal, state and territorial, adverse to the indiscriminate use and sale of opium and morphin, their derivatives and preparations, has been enacted during the past few decades, the amount of opium per capita imported and consumed in the United States has doubled during the last forty years. Not only has there been this increase in the use of opium, its preparations and derivatives, but large quantities of other habit-forming drugs have been used initially, introduced chiefly for medicinal purposes. For example, cocaine (cocain hydrochlorid) has been employed for about twenty-five years, and the amount consumed at present per annum is estimated at approximately 150,000 ounces, an amount ten times as great as actually needed. In addition to this, it is well-known that large quantities of acetanilid,

antipyrin, acetphenetidin and diacetyl-morphin, and smaller quantities of hydrated chloral, ecodein, para-amino-benzoldiethyl-amino-ethanol, etc., are used. The amount of opium imported per annum during the past twenty years is slightly less than 500,000 pounds. The average yearly decrease during the past ten years is about 20,000 pounds. The present deterring factors are antinarcotic legislation and publicity.

From a comparison of the amount imported here with that in countries having efficient restrictive legislation, like Austria-Hungary, Germany, Holland, Italy and Spain, Kebler says it is clearly evident that from 80 to 90 per cent. of the opium imported is used improperly. It is variously estimated by those who are conversant with the situation that the number of drug habitués in the United States varies from 1,000,000 to 4,000,000. Most of the states have enacted laws forbidding the indiscriminate sale of cocaine and cocaine-bearing products, and to a certain extent this also holds true for morphin and preparations containing it. Still, in many instances, there are some features which do not render such laws as effective as they might be. Many states are enforcing local laws regulating the sale of morphin, cocaine, etc., within their jurisdiction, but they are unable to control the introduction of these habit-forming drugs from localities outside of the state, and for this reason the officials find it difficult to make material headway. Manufacturers, importers and wholesalers, until recent years, have been supplying these agents to all comers, but recent activity shows that they are anxious to see the illegal use of such habit-forming drugs suppressed, notwithstanding the financial loss which they may encounter. It is a well-known fact that many wholesalers refuse to sell undue amounts of cocaine to retailers, and from this it can readily be seen that there is a decided movement on foot toward suppressing drug addiction, not only on the part of the public, but also of manufacturers and dealers in these commodities.

It is well known that there are many factors at work tending to drug enslavement, among them being the host of soothing syrups, medicated soft drinks containing cocaine, asthma remedies, catarrh remedies, consumption remedies, cough and cold remedies, and the more notorious drug addiction cures. It is often stated that medical men are frequently the chief factors in causing drug addiction. In order to obtain information on this subject, letters were addressed by Kebler to practicing physicians, sanitariums treating drug addiction under direct supervision, and sanitariums treating it both under direct supervision and in absentia only, throughout the United States. The data thus secured, with observations, are most interesting, but being published in tabular form cannot be abstracted.

41. Abstracted in THE JOURNAL, May 28, 1910, p. 1811.

Journal of Cutaneous Diseases, New York

February

- 43 Periapicalitis Mucosa Necrotica Recurrens (Chronic Recurring Necrotic Granuloma of the Buccal Mucosa). R. L. Sutton, Kansas City, Mo.
- 44 Fibroma Molluscum, or Universal Neurofibromatosis. A. Ravogli, Cincinnati.
- 45 Isolation and Growth of the Acne Bacillus. E. D. Lovejoy and T. W. Hastings, New York.
- 46 Dr. Henry Granger Piffard: In Memoriam. G. H. Fox, New York.

American Journal of Surgery, New York

January

- 47 Pyuria. H. A. Kelley, Baltimore.
- 48 *Pylorospasm. S. McGuire, Richmond, Va.
- 49 Transfusion of Blood: Its Indications and Technique. J. S. Horsley, Richmond, Va.
- 50 Importance of Educating the Public in Regard to Cancer. S. Leigh, Norfolk, Va.
- 51 Gastric Symptoms from the Surgeon's Viewpoint. L. Frank, Louisville, Ky.
- 52 *Tumors of the Jaw Occurring Most Frequently in the Negro. W. F. Westmoreland, Atlanta, Ga.
- 53 Diagnosis of Obscure Cases of Appendicitis with Especial Reference to "Protective Appendicitis" (Morris). M. Rogers, Birmingham, Ala.
- 54 Quinin Anesthesia for Reducing Fractures, for Rectal Operations and for Prevention of Immediate Postoperative Pain in Amputation Stumps. V. Pleth and V. W. Pleth, Seguin, Texas.
- 55 Surgery Outside of the Hospital. J. W. Alsobrook, Plant City, Fla.
- 56 Eight Cases of *B. Aerogenes Capsulatus* Wound Infection. G. R. White, Savannah, Ga.
- 57 Cure of Stricture of the Rectum Complicating Fistulas. C. S. Venable, San Antonio, Texas.

February

- 58 *Intestinal Resection with a Technic Combining Murphy Button, Hartley and Lilienthal Methods. W. L. Wallace, Syracuse, N. Y.
- 59 *Abdominal Injuries and Their Treatment. C. H. Goodrich, Brooklyn, N. Y.
- 60 Medicolegal Aspect of Roentgen Rays from the Standpoint of the Surgeon. R. D. Mason, Omaha, Neb.
- 61 Metatarsalgia. H. C. Riggs, Brooklyn, N. Y.
- 62 Local Anesthesia. A. E. Hertzler, Kansas City, Mo.
- 63 Treatment of Acute Gonorrheal Urethritis. P. D. Littlejohn, New Haven, Conn.
- 64 A Case of Osteitis Deformans. N. P. Rathbun, Brooklyn, N. Y.

48 and 52. Abstracted in THE JOURNAL, Jan. 14, 1911, pp. 142 and 143.

58. **Intestinal Resection.**—When making an intestinal resection, Wallace found that a lateral anastomosis with a Murphy button by a certain method may be done with such rapidity that an immediate resection may safely be accomplished. He uses the Hartley method in making the lateral anastomosis, dropping half of a Murphy button into each end of the gut which is left after resection, and, after closing the ends of the gut by the Lilienthal method, pushes the halves of the button together. Lilienthal simply ties off the gut with twine instead of turning in or sewing up the end. Wallace has now used it six times with six successes. In three cases of strangulated hernia, he resected, made a lateral anastomosis with the Murphy button by the Hartley method, tied off the ends of the gut with fine linen or silk by the Lilienthal method, cut off the ends of the silk short and dropped the gut back, closing the abdomen without a drain. In another case of strangulated hernia he did the same, except that on account of the evident infection, he left a rubber drain down to the closed peritoneum. In one case of tuberculous salpingitis in which resection of the gut was necessary, it was accomplished in this way without drainage. In one case of appendicitis, in a child of 8, the end of the cecum, 1½ inches above the root of the appendix, together with the appendix and its mesentery, were tied off with one ligature and cut away.

59. **Abdominal Injuries.**—Goodrich urges an immediate aseptic abdominal section in every doubtful case of abdominal injury. Some of the important points in the surgical treatment of abdominal injuries are explained by him as follows:

1. Apply active measures to overcome or lessen shock, unless signs of active hemorrhage make quick action imperative. A reasonable time (one-half to three hours) may be allowed in cases of profound shock, to promote a helpful reaction.
2. Cleanse the skin as thoroughly and as widely as in any other abdominal case, notwithstanding the presence of indication for rapid work.
3. Precede an exploration by an intravenous saline infusion or a transfusion of blood when symptoms of hemorrhage are marked. As Crile has noted, "We may in this way transform a hopeless case into an average risk."
4. Make the search for intra-abdominal injuries thorough and systematic.
5. Cleanse the peritoneum thoroughly of septic material and blood, or fluid of any kind. This is best done by large gauze sponges, followed by copious irrigation, leaving the abdomen partly filled with saline solution.
6. Secure absolute hemostasis and water-tight repair of all wounds and ruptures.
7. Introduce drains whenever viscera have been penetrated or ruptured.
8. Use intravenous infusions of normal saline solution freely postoperatively in cases of marked shock or acute anemia.
9. Adopt the Fowler position and the ice coil in all cases as soon as reaction from shock is obtained.
10. If intestinal paresis supervenes, lavage every four hours will accomplish more than enemata.

Goodrich records a recent recovery from intestinal paresis so extreme as to be accompanied by frequent fecal vomiting, by the use of this measure.

Maryland Medical Journal, Baltimore

February

- 65 Importance of Direct Endoscopy in General Medical Practice. J. R. Winslow, Baltimore.
- 66 Medical and Surgical Aspects of Tumors, Including Inflammatory and Neoplastic Formations. J. C. Bloodgood, Baltimore.
- 67 Advantages of Decompression in Treatment of Head Injuries. A. McGlannan, Baltimore.
- 68 The Faucial Tonsil—Its Relation to Systemic Disease and Results of Its Removal. S. Rosenheim, Baltimore.

Journal of Biologic Chemistry, Baltimore

December

- 69 The Refractive Indices of Certain Proteins: Serum Globulin. T. B. Robertson, San Francisco.
- 70 The Nitrogen Metabolism of the Coyote. A. Hunter and M. H. Givens, Ithaca, N. Y.

- 71 Comparative Analysis of the Urine of the Fox, Dog and Coyote. P. B. Hawk.
72 Fermentation of Citric Acid in Milk. A. W. Bosworth and M. J. Prucha, Geneva, N. Y.
73 Determination of Inorganic and Organic Phosphorus in Meats. H. S. Grindley and E. L. Ross.
74 *Persistence of Strychnin in a Corpse. M. P. Cram and P. W. Meserve.
75 Determination of Ammonia in Urine. O. Folin, Boston.
76 Determination of Total Sulphur in Urine. S. R. Benedict, New York.
77 Conception and Definition of the Term "Catalysor." A. E. Taylor.
78 Refractive Indices of Certain Proteins: Casein in Alcohol-Water Mixtures. T. B. Robertson, San Francisco.

74. **Persistence of Strychnin in a Corpse.**—On Nov. 15, 1909, a man of 53 died under suspicious circumstances. The body was buried on Nov. 19, 1909; on November 29 of the same year it was disinterred, and certain organs removed and sent to the late Franklin G. Robinson for analysis. Professor Robinson's notes record that he found strychnin, but, owing to illness, he was unable to appear personally at the trial. The body, therefore, was exhumed a second time on March 18, 1910, the other organs removed which were sent to Cram. The body had been frozen most of the time, but the grave when opened was full of water, which was allowed to drain off. An embalming fluid of acid reaction had been used when the body was first buried, which made it appear likely that any strychnin would be dissolved out. The method used for determining strychnin was the usual one of extracting with alcohol made acid with acetic acid, evaporating the extract to soft dryness, extracting the residue with water, extracting the acid water solution with chloroform, and then the same solution made alkaline with chloroform, the strychnin coming out in the last chloroform extract. The strychnin was then purified by absolute alcohol. From 454 grams of the lung, 133 grams of kidney, 446 grams of muscle, 850 grams of small intestine and 560 grams of brain, each being tested separately, no strychnin was obtained. From 803 grams of liver was obtained 0.0015 gram of strychnin, and from the spinal cord 0.0033 gram. The spinal cord itself weighed 25 grams. The note-books of Professor Robinson record that in 290 grams of stomach contents he found 0.0277 gram of strychnin, and in 45 grams of kidney 0.0003 gram of strychnin. The spinal cord, being better protected from the action of the water in the grave, which was acid from the embalming fluid, had retained the strychnin better than the other parts.

West Virginia Medical Journal, Wheeling

February

- 79 Pathology, Symptomatology and Diagnosis of Diseases of the Prostate. G. Timberlake, Baltimore.
80 Glaucoma. E. A. Hildreth, Wheeling.
81 The Physician—His Legal Rights and Responsibilities. T. Morrison, Keyser.
82 The Internal Secretions. G. D. Lind, Greenwood.
83 Hyperemia as a Curative Agent. H. G. Nicholson, Charleston.
84 Local Anesthesia in Rectal Work—Its History and Its Indications. J. M. Lynch, New York.

American Journal of Diseases of Children, Chicago

February

- 85 *Congenital Stenosis of Pylorus. A. D. Bevan, Chicago.
86 *Cerebrospinal Meningitis, Its Etiology, Diagnosis, Prognosis and Treatment. C. H. Dunn, Boston.
87 *Relation Between Carpal Ossification and Physical and Mental Development. E. Long and E. W. Caldwell, New York.
88 *Frequency and Significance of Albumin in the Urines of Normal Children. S. McC. Hamill, Philadelphia, and K. D. Blackfan, Cambridge, N. Y.

85. **Congenital Stenosis of the Pylorus.**—Bevan's conclusions are that congenital pyloric obstruction is a definite, well-established pathologic condition; that it produces, for him who has seen it, an easily recognized clinical picture; that it can, as a rule, be differentiated from other conditions simulating it; that if early recognized it can be permanently relieved by overcoming the obstruction by modern surgical methods; and that the individual so saved can grow up and develop in a perfectly normal way.

86. **Cerebrospinal Meningitis.**—The specific methods of treatment which in Dunn's opinion are available in the various forms of cerebrospinal meningitis, and which should be more widely tried, until further evidence proves or disproves their value, are: tuberculous—early and repeated lumbar puncture; epidemic—antimeningitis serum; pneumococcus—antipneumo-

coccus serum; streptococcus—antistreptococcus serum; influenza—early and repeated lumbar puncture; staphylococcus—homologous vaccine.

87. **Carpal Ossification and Physical and Mental Development.**—The investigations described by Long and Caldwell were made with a view to applying the ingenious method proposed by Rotch, that the stage of ossification of the carpal bones as determined by the radiograph may be used to standardize or grade growing children as to their capacity for physical and mental work. As a result of their investigation, Long and Caldwell are led to believe that the ossification of the one wrist of an individual is not the exact index of the ossification of the other wrist, and therefore it seems probable that the same inexact relation exists between the wrist and the remainder of the skeleton. Age, height and weight increase in general with advance in carpal ossification, but with many exceptions among both sexes. It would be impractical at least to regulate the mode of life of these children according to this classification alone, e. g., Class B includes a very bright child, 2 years, 6 months and 15 days old, and a very dull child of 6 years, 7 months and 29 days; Class D includes a child of fair intelligence, 2 years, 2 months and 2 days old, with a very bright child of 7 years and 29 days. They can find no relation between the degree of carpal development and quality of mind. Some idiots are as far advanced in carpal ossification as some normal children of good mentality and similar chronologic age. The relation between the stages of puberty and those of carpal ossification is too indefinite to warrant the latter's use as an index of physiologic development. And, finally, though carpal development alone is not an exact index, still when observed at intervals, and considered with other factors, it may become an aid in estimating the rapidity of growth of the skeleton in children. They believe that closer attention should be paid by the medical profession to the regulation of physical and mental tasks more in accordance with the individual child's capacity, and that development of the ossification centers of the skeleton may become a factor toward this result.

88. **Albumin in the Urine of Normal Children.**—In each specimen of urine, Hamill and Blackfan determined the color, the appearance, the specific gravity, the reaction (in twenty-four-hour specimens, the total acidity), the presence or absence of albumin, sugar, acetone, diacetic acid, indican, urobilinogen and phenol; and microscopically, the presence or absence of cells, casts, cylindroids and crystals. Four hundred and forty-five specimens of urine were examined. These were obtained from 124 children, ranging in age from 18 months to 14 years. During the period of examination the usual routine of life was followed, except that the children were kept from school. There was no relationship between the specific gravity and the form or amount of albumin. The reaction had no influence on the production of albumin. Sugar, acetone and diacetic acid were never found. They may, therefore, be considered as having no bearing on the production of albumin. Indican, phenol and urobilinogen, when present, were usually associated with albumin, but albumin was sometimes absent when they were all present, and the amount was never greater when associated with them than it was in the cases in which they were absent. Crystals, when present in amounts, such as are occasionally found in normal children, are in no way responsible for the associated albumin. The mild disturbances of the intestinal digestion, as shown by the examination of the stools, were not sufficient to account for the occurrence of albumin. The blood-pressure was within the normal range in all cases and, therefore, did not influence the albumin output. The albumin elimination was the same on mixed and exclusive milk diets. They found no children in whom the albumin excretion corresponded to the requirements for postural or orthostatic albuminuria, a rather surprising result in view of the frequency with which this condition is supposed to occur.

Thirty-two and one-half per cent. of the children showed occasional hyaline casts and cylindroids in the urine. The authors do not consider their "occasional presence" as indicative of a lesion of the kidneys, but rather as suggesting a temporary overtaxation of the kidneys resulting from variations in the habits of life of the individuals, which are too slight

to be recognized. Eighty-eight and seven-tenths per cent. of the urine of these 124 children showed albumin, 27.4 per cent. showed serum-albumin alone and in combination; and 85.4 per cent., an albuminous body precipitated by acetic acid in the cold. These two albumins were nearly always present in very slight traces, occasionally in slight traces and rarely in traces. In thirty-eight children the twenty-four-hour specimens showed nucleo-albumin in all but one, and in this case samples examined over prolonged periods of time showed nucleo-albumin frequently. In these thirty-eight children, the percentage of serum-albumin was very much larger (42.1 per cent.) than in the total number of cases examined. The authors believe, therefore, that it is possible to demonstrate in the urine of every presumably healthy child traces of an albuminous body precipitated by acetic acid. Consequently, this substance must be regarded as an exceedingly common, if not constant manifestation in the urine of children under 14 years of age, and as of no clinical significance. Hamill and Blackfan do not believe that serum-albumin in the amounts in which it appears in these children indicates a diseased condition of the kidneys any more than does the presence of occasional hyaline casts and cylindroids, and that its etiology may be considered the same as that given for these former elements.

Journal of the Medical Society of New Jersey, Orange

February

- 89 The Nasal Accessory Sinuses and the Eye. G. H. Ward, Englewood.
- 90 Injury to the Eye from Burns, Scalds and Chemicals. C. J. Kipp, Newark.
- 91 The Accessory Sinuses. T. R. Chambers, Jersey City.
- 92 A Few Fundamental Principles Applicable in Treatment of Diseases of Disturbed Metabolism. H. Beates, Philadelphia.
- 93 Indications for Operating in Extra-Uterine Pregnancy. W. O. La Motte, Riverside.

California State Journal of Medicine, San Francisco

February

- 94 Hyperchlorhydria. W. F. Cheney, San Francisco.
- 95 Value of Rectal Examinations. A. J. Zobel, San Francisco.
- 96 Functional Periodicity in Women and Some of the Modifying Factors. C. D. Mosher, Palo Alto.
- 97 Relation of Gastric Hemorrhage to Chronic Appendicitis. C. G. Levison, San Francisco.
- 98 Determination of Pus in Diseases of the Accessory Cavities of the Nose. H. Horn, San Francisco.
- 99 *Unusual Manifestations of Defective Feet. J. T. Watkins, San Francisco.
- 100 *Etiology and Treatment of Enuresis. E. C. Fleischer, San Francisco.
- 101 Criminal Abortion. J. H. Barbat, San Francisco.
- 102 Ophthalmologic Cases: Convergent Strabismus. F. A. Hamlin, San Francisco.
- 103 Rest in Treatment of Pulmonary Tuberculosis. R. A. Peers, Colfax.
- 104 Primary Carcinoma of Bronchus in the Mediastinum. H. R. Oliver, San Francisco.
- 105 Crusade Against the Anopheles. T. B. Reardan, Oroville.
- 106 Uncinariasis Among Mexican Track Laborers. J. W. Colbert, Albuquerque, N. Mex.

99. Manifestations of Defective Feet.—Watkins emphasizes the importance of always being on the outlook for what is called "pronated foot," a condition which is capable, without presenting subjective local manifestations, of giving rise to remote symptoms mistakable for those of lesions so dissimilar as sciatica, coccygodynia, uterine relaxation and allied disorders, a variety of backaches and spinal osteo-arthritis. The treatment of those defects for which pronated foot may be mistaken is either operative or mechanical. The explanations of the various subjective symptoms of pronated foot are found in the disturbances it inaugurates in the normal mechanics of the erect attitude. Watkins reports several cases in point and discusses the mechanism of walking from the anatomic viewpoint.

100. Etiology and Treatment of Enuresis.—With the object of determining the value of thyroid treatment of enuresis, Fleischer treated ten patients as follows: One-fourth grain thyroid extract was given three times a day, increasing to $\frac{1}{2}$ grain three times a day. Fluids were not allowed after 4 p. m., and the foot of the bed was decidedly elevated at night. Of these ten patients, eight improved; two did not improve. Of the eight who improved, in four cases circumcision had been previously performed without result. Fleischer believes that the postural and dietetic treatment are of undoubted value; their action is, naturally, combined. Mothers are

advised to give the children no fluid beyond a glass of milk for the evening meal, after 4 in the afternoon; then they are told to place blocks under the foot of the bed so that that part is raised about 8 inches. The object of this is to keep the urine from coming down and irritating the neck of the bladder, and it is often efficacious.

Military Surgeon, Washington, D. C.

February

- 107 *Aneurysms in the U. S. Army Medical Museum. D. S. Lamb, Washington, D. C.
- 108 Elementary Suggestions Regarding Plans for Our Large Naval Hospitals. F. S. Nash, U. S. Navy.
- 109 The New Type Naval Hospital. A. W. Dunbar, U. S. Navy.
- 110 The Sanitary Officer. W. W. Reno, U. S. Army.
- 111 Report of Venereal Diseases at Camp Stotsenburg, Pampanga, P. I. W. H. Wilson, U. S. Army.
- 112 Features of the Hernia Operation. A. McGlannan, N. G., Md.
- 113 Cases of Tuberculosis Sinuses Treated with Bismuth Paste. A. G. Chittick, N. G., Ind.
- 114 Report of Tropical Disease Board. Observations at Hanoi and Haiphong, Tonkin Province. W. P. Chamberlain, H. D. Bloomer and E. D. Kilbourne, U. S. Army.

107. Also published in *Washington Medical Annals*, January, 1911, and abstracted in *THE JOURNAL*, Feb. 11, p. 455.

Western Medical Review, Omaha, Neb.

February

- 115 *Stenosis of the Lower End of the Esophagus. H. L. Akin, Omaha.
- 116 Appendicitis. A. I. McKinnon, Lincoln, Neb.
- 117 Timely Ethical Problems. W. G. Hiltner, Lincoln, Neb.
- 118 Salvarsan in Syphilis. E. J. Angle, Lincoln, Neb.

115. Stenosis of Lower End of Esophagus.—Three cases are reported by Akin. He emphasizes several points, first of which is the importance of having the proper kind of bougie. The only reliable instrument, in his opinion, is a long 24 or 25-inch whalebone bougie, stiff enough so that it will not bend, but will go straight through where it is directed. His second point is the use of the silk thread swallowed the day before so as to allow it to become firmly engaged in the bowel below the stomach. This is a simple but highly commendable procedure, he asserts, because it enables the operator to introduce the bougie or dilator directly to the permeable point of the stricture and to use such force as is required to pass on into the stomach with a certain knowledge that his instrument is not going to deviate to the right or left and perhaps make false passage into the lung or pleural cavity. Akin favors dilatation of the stricture whenever this is possible.

Journal of the Michigan State Medical Society, Battle Creek

February

- 119 Surgical Treatment of Goiter. C. D. Brooks, Detroit.
- 120 Acute Poliomyelitis. G. L. Connor, Detroit.
- 121 Phases of Psychotherapy. C. W. Hitchcock, Detroit.
- 122 *A Business Man's Cold. J. V. White, Detroit.
- 123 Indication for Prostatectomy. F. B. Marshall, Muskegon.
- 124 Spina Bifida. N. S. MacDonald, Hancock.
- 125 Pregnancy and Fibroid Tumors of the Uterus. W. P. Manton, Detroit.

122. Abstracted in *THE JOURNAL*, Oct. 29, 1910, p. 1587.

Interstate Medical Journal, St. Louis

February

- 126 *Alterations of the Circulation in Goiter. C. C. Guthrie and A. H. Ryan, Pittsburg, Pa.
- 127 Abdominal Pain. H. A. Kelley, Baltimore.
- 128 Tuberculosis as it Concerns the Physician. L. F. Flick, Philadelphia.
- 129 A Frequent Etiologic Factor, Common to Facial Malformation and Acute Infectious Diseases. H. A. Potts, Chicago.
- 130 Uterine Hemorrhage: Its Relation to Uterine Cancer. F. Hinchey, St. Louis.
- 131 Artificial Feeding of Infant: Danger of Deficient Proteids. D. J. M. Miller, Atlantic City, N. J.
- 132 Case of Undescended Testicle. C. H. Chetwood, New York.

126. Alterations of the Circulation in Goiter.—Guthrie and Ryan record additional observations on the results following alterations of the circulation in goitrous thyroids, and further discuss these results in the light of other observations and considerations with a view of determining the factors concerned in their production. They found that marked anatomic changes occur in enlarged or goitrous thyroids of dogs after alteration of the circulation. The greatest changes observed occur when the circulation is reversed in the inferior thyroid vein by anastomosing this vein with the central end of the common carotid artery, or by making the anastomosis of the artery with the peripheral end of the internal jugular vein

below the point of origin of the inferior thyroid vein. The gross changes consist of a temporary swelling, followed by a marked decrease in size of the lobe on the operated side. The lobe feels much harder and denser. Microscopically, if the goiter be of the hyperplastic type, generally more normal staining colloid is seen after the operation; while if the goiter be of the colloid type, a decrease in the colloid substance is observed. In both cases the operated lobes in size, physical properties and histologic structure tend to revert to the normal. The authors believe that the change may rationally be interpreted from the standpoint of primary interference with the respiration of the tissues, which results in the death, disintegration and disappearance of abnormal tissue constituents. Also, accompanying the secondary effects due to the reactions of the tissues, absorption is probably increased so that the abnormal substances are quickly moved from the gland which accounts for their rapid disappearance. The more nearly normal tissue elements being more resistant or perhaps more favorably situated to revive, under the more nearly normal circulatory conditions established through the reaction of the tissues to the adverse condition, which indeed is strikingly similar to the current conceptions of an inflammatory reaction, resume and retain a more nearly normal function.

The reaction set up in the tissues is explainable as being due to the edema. But this may be only the indirect cause, for the accumulation of metabolic products together with substances originating from the death of tissue elements would probably act either together or the latter alone, more directly in producing an inflammatory reaction. On the whole, the results indicate that general symptoms of goiter are at least in part associated with deranged functions of the thyroid apparatus.

New Orleans Medical and Surgical Journal

February

- 133 Causes and Treatment of Backache in Women. A. de Roulet, Chicago.
- 134 Salvarsan in Syphilis. A. Nelken, New Orleans.
- 135 Treatment of Cardiac Insufficiency. J. B. Guthrie, New Orleans.
- 136 The Biology of *B. Lepra*. C. W. Duval, New Orleans.
- 137 Practical Use of the Cystoscope in Differential Diagnosis. R. G. Holeombe, Lake Charles, La.
- 138 Problems in Obstetrics. E. M. Ellis, Crowley, La.
- 139 Advisability of Immediate Repair of the Cervix Uteri After Delivery. P. B. Salatch, New Orleans.
- 140 Toxemia of Pregnancy, Its Nature, Cause and Treatment. O. W. Cosby and R. H. Blackman, Monroe, La.
- 141 When Is Gonorrhea in Women Cured? W. B. Chamberlin, New Orleans.
- 142 Ligation of the Ovarian Vein for Thrombophlebitis of Puerperal Origin. C. J. Miller, New Orleans.
- 143 Removal of a Ninety-Five Pound Fibroid of the Uterus. H. S. Cooran, New Orleans.
- 144 Hygiene and Sanitation. I. J. Newton, Monroe, La.

Virginia Medical Semi-Monthly, Richmond

February 10

- 145 Case of Adams-Stokes Syndrome. T. C. Harris, Kenbridge.
- 146 *Advanced Extrauterine Pregnancy. S. C. Carson, Greensboro, Ala.
- 147 Treatment of Some Forms of Cardiac Failure. L. F. Barker, Baltimore.
- 148 *Peculiar Elongated and Sickie-Shaped Red Blood-Corpuscles in a Case of Severe Anemia. R. E. Washburn, Charlottesville.
- 149 Mastoiditis: Report of the Last Year's Work. W. F. Mereer, Richmond.
- 150 Work Done on the Verumontanum. L. T. Preece, Richmond.

146. Abstracted in THE JOURNAL, Sept. 24, 1910, p. 1133.

148. **Peculiar Red Blood-Corpuscles in Severe Anemia.**—This patient has been under observation, at intervals, since 1907. She is a negress, aged 25, a native of southwestern Virginia and has lived there all her life. When first seen, Oct. 25, 1910, she complained of weakness, soreness and pain in the left side, and a sore on the left leg. She has never had good health. When a child she had measles. Menstruation began when she was eighteen and has been fairly regular, normal in amount, and with little pain. When a small girl, she had pneumonia, with pleurisy on the left side, and claims to have had pain in that side since that time. Three times within the last five years she has had chills and fever, supposedly malaria. She has never had rheumatism. There is no history of a chronic cough, but she is often troubled with epistaxis and sometimes spits up bloody mucus. She has shortness of breath on exertion, night sweats, and sleep starts, and is also troubled with swelling about the wrists and ankles. After

eating, she occasionally has severe abdominal pain and is often troubled with indigestion and constipation. There is no history of any kidney or bladder trouble, gonorrhea or syphilis. The woman is a cook and has always done house work. In September, 1910, she weighed 155 pounds, but has fallen off since that time.

About five years ago she first noticed that she became dizzy and short of breath on slight exertion; and was also troubled with swelling in the feet and ankles. About the same time, she knocked the skin off of the left shin and the wound became infected, causing a bad ulcer. Some time after this an ulcer started on the right leg, though she does not remember having hurt it. She was also troubled with severe pains in the abdomen. These pains would start on the left side and radiate to the region of the liver, and were sharp and stabbing in character. She returned to her home in December of the same year feeling much improved. In March, 1908, she was operated on for gall-stones, 107 being removed. She continued to have good health until the following April; at which time she complained of severe pain in her left side. This pain was more or less constant, worse in the day than at night, and also increasing on taking a deep breath and on pressure. She also complained of being constipated—the pain being worse then than when the bowels moved regularly. Physical examination showed the mucous membranes to be pale; tongue coated; lungs and liver negative. The heart was slightly enlarged, with a systolic murmur heard best at the apex and transmitted to the axilla. The average temperature ranged from 99 to 100 F., pulse from 80 to 100, blood pressure was 105. Blood examination, April, 1909, showed: red cells, 2,000,000; white cells, 11,000; hemoglobin (Sahli), 50 per cent. Differential white count was as follows: polymorphonuclears, 63 per cent.; small mononuclears, 25 per cent.; eosinophils, 4 per cent.; mast cells, 6 per cent. The red cells showed poikilocytes in a variety of shapes, the most common variety being of a crescent shape. At several subsequent examinations cells of the same shape were found.

St. Paul Medical Journal

February

- 151 Prognosis in the Initial Stages of General Paresis. C. R. Ball, St. Paul.
- 152 The Southern Minnesota Medical Association. W. T. Adams, Elgin, Minn.
- 153 The Minnesota Valley Medical Association. E. J. Davis, Minnehaha, Minn.
- 154 Then and Now: The Medical Profession in Minnesota Thirty Years Ago and Its Standing at Present. J. W. Andrews, Mankota, Minn.
- 155 Jaundice. J. S. Gilfillan, St. Paul.

Louisville Monthly Journal of Medicine and Surgery

February

- 156 Chronic Lesions of the Stomach. J. G. Sherrill, Louisville.
- 157 A Case of Glanders in a Physician. C. Skinner, Louisville.
- 158 The Medical Profession Must Change Its Tactics. W. J. Robinson, New York.

Colorado Medicine, Denver

February

- 159 Present Status of Bottle Feeding in Normal Infants. W. T. Little, Canon City.
- 160 Management of Difficult Cases of Bottle Feeding. H. B. Whitney, Denver.
- 161 Management of Breast Feeding. G. H. Cattermole, Denver.
- 162 Vaccine Therapy: Theories Regarding Certain Failures. G. B. Webb and G. B. Gilbert, Colorado Springs.
- 163 Infantile Indigestion. F. P. Gengenbach, Denver.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 4

- 1 *Medical Organization. W. Osler.
- 2 Anatomy and Morbid Anatomy in Clinical Surgery. C. B. Loekwood.
- 3 *Treatment of Gout and Rheumatism by Radium. W. His.
- 4 *Mechanical Effects of Right-Sided Pleural Effusion. A. C. Geddes.
- 5 *Treatment of 300 Nevi by Freezing. J. L. Bunch.
- 6 *Carcinoma of the Stomach in a Youth of Nineteen. J. R. C. Canney.
- 7 History of Yellow Fever in West Africa. Sir R. Boyce.
- 8 High Temperature After Labor and Its Treatment with Acetylsalicylic Acid (Aspirin). G. H. Fink.

1. Organization in the Profession.—Osler points out that there is an organization in the profession and an organization of the profession—the one deals with the mutual relations of medical men with each other and with the public, the other is concerned with his relations to the state, and with the faculty of medicine in its corporative capacity. There are numerous organizations, but the profession is not yet self-controlled through any one representative body, as it certainly should be in this democratic age. Than medical practitioners, says Osler, no men need more acutely the benefits of cooperation, and yet they are notoriously difficult units to unite. Once split off from the parent college or school, a majority of practitioners live lives of isolation, often, indeed, of great loneliness. Even in a city a very busy man may see surprisingly little of his colleagues and, what is worse, he may desire to see still less. Of the value to the local practitioner of a medical society and of a library all are agreed. The medical society may do three things. It is the most important single factor in the promotion of that unity and good fellowship which adds so much to the dignity of the profession. The second great function is postgraduate instruction; to each member the medical society should be a sort of clearing-house of his clinical experience. A third equally important function is the support of a library. A few good journals and the new books are all that the members should ask of the library committee. Osler then deals more particularly with the function of the county hospital in postgraduate education. As a class, he says, physicians do not appreciate enough the importance of continuous education in their professional life. To be up to date a man must keep in touch with the advance guard of the profession, and this is not easy to do in any course of reading, however thorough; he must come in contact with the men who are doing the work. While it is not too much to ask that a man should break away every few years from the routine of practice and go to a postgraduate school, there is another and easier way—the postgraduate school may be brought to him. Here comes in a function of the first importance in a county hospital, one can do his own postgraduate work.

3. Radium in Gout and Rheumatism.—Of 100 patients with chronic rheumatism treated by His with radium, forty-seven were improved, twenty-nine were considerably improved, five nearly cured, thirteen were uninfluenced by the treatment, and the result was not apparent in six. There were several cases of myalgia. A few of these patients have reacted in a most marked manner to the radium treatment, others were improved, and others, again, were absolutely uninfluenced. On the whole, His found that the younger the individual, the less advanced the illness, the better the results. Even in very long standing cases alleviation of pain may, at all events, be looked for. The results in gout were more striking. He was able to observe and treat twenty-eight patients for a considerable period. Of these four remained unaffected, while in twenty-four great improvement in the condition was achieved. Some of the patients have remained free from symptoms for a year after the termination of treatment. His was in a position to examine the blood for uric acid, both before and after the treatment, in eighteen cases. In fifteen the desired result was effected promptly; in a severe case of gout the blood was found to be free from uric acid after fourteen days' treatment by drinking water containing radium. He observed tophi in the ear disappear on two occasions during the treatment. The clinical improvement, however, did not always run parallel to the uric acid content of the blood. His noted marked improvement in a patient who was energetically treated, in spite of the fact that the blood retained its uric acid. In another patient, who had gouty nodules all over the body, no uric acid was present in the blood either at the beginning or toward the end of the treatment, and yet the patient had one attack after another during the entire time. In the majority of cases, at all events, His concludes that in the treatment of gout radium is a very powerful remedy, even if some persons are refractory to the treatment.

4. Right-Sided Pleural Effusion.—As a result of the consideration of his cases, Geddes is confirmed in his opinion that one cause of sudden death in cases of right-sided pleural

effusion may well be occlusion of the great veins as they approach the heart, and more especially occlusion of the inferior vena cava.

5. Treatment of Nevi by Freezing.—Bunch has successfully treated with carbon dioxid 300 nevi of various extent and size. Most of these lesions were sources of disfigurement, many of them being on the face; but some were in positions where only a sentimental feeling on the part of the parents, and no cosmetic necessity, seemed to make their removal desirable. Such were nevi of the vulva, of the penis, and of the margin of the anus, and they were interesting from the point of view of the possibility of sepsis; but Bunch has not seen one in these positions which gave any trouble or failed to react in the ordinary way or to heal up normally. Most of these patients were treated at the hospital and included capillary, stellate, cavernous and pigmented nevi; some were small and some were several inches in diameter, flat, or markedly raised above the adjacent healthy skin, forming prominent red or purple swellings. For all such cases, Bunch says, treatment by solid carbon dioxid cannot be improved on, but for large port-wine stains, involving part or whole of one side of the face, where a considerable area has to be treated at a single application, he prefers to employ liquid air.

6. Gastric Cancer in a Youth.—One of the chief points in this case is that it illustrates how misleading the abnormal age incidence of a disease may be in coming to a correct diagnosis. The temporary improvement, with proper medical care and nursing in the earlier stages of the case, is remarkable.

Lancet, London

February 4

- 9 Color Vision and Color Blindness. F. W. Edridge-Green.
- 10 The Position of Sir Charles Bell Among Anatomists. A. Keith.
- 11 Treatment of Extensive Dental Caries in Children by Tooth Extraction. J. F. Coyer.
- 12 "X" Bodies in Human Blood. A. Balfour.
- 13 Cases Illustrating Effects of Hyperemia by Elastic Bandage on Ununited Fractures. A. E. Barker.
- 14 Treatment of Skin Diseases by Hyperemia. W. K. Sibley.
- 15 *Magnesium Sulphate in Erysipelas. N. H. Choksy.

12. "X" Bodies in Human Blood.—These bodies were found in blood-slides made from a patient who was suffering from urticaria nocturna. The disease was of four months' standing. The patient was a white woman, aged about 18, married, and nursing a child 1 year old; the child was healthy. Every evening about 7 o'clock flat, solid, more or less elevated wheals, irregular in size and shape, began to appear all over the body. These wheals disappeared and others appeared till the early morning, when the eruption began to diminish, and about sunrise nothing was left and the patient looked normal, like any other person. The eruption was accompanied by a severe itching and burning sensation; there was no fever and no disturbance of any of the systems of the body. In one of the films, Balfour found typical "X" bodies in considerable numbers, free, and occasionally lying on the red cells. A fairly common form was a small body about one-eighth the size of a red corpuscle, spherical in form, and consisting of a faint capsule with a circular center staining deep blue. The majority, however, had centers more of a pale lilac than a blue color, and contained faintly staining material between their capsules and their centers. What may be called large and intermediate forms of a similar form were present, but in the former the capsule was not so defined, the appearance being rather that of a halo of more faintly staining substance surrounding a deeply stained spherical core. Very few forms with concentric rings were observed; and only one or two of large "solid" coccus-like type. Bodies described as fragmented were encountered. Some of these had only a chip, as it were, broken from them, or looked like biscuits from which one had bitten out a piece. Distinctly oval forms were seen, usually of considerable size, and also a curious oblong appearance. Small forms measuring 3μ in diameter were met with, one of which showed a segmentation of the central spot into four; another no dark center, but dark spots at its periphery; and yet another a kind of inner capsule. Many of the smaller forms were homogeneous, showing no dark centers whatever, while some of the larger forms, with distinct cores, showed granular material between their

capsules and their centers. In this there were sometimes small blue spots or granules. Others, again, were irregular in shape, being what may be called "knobbed" bodies. Bal-four found no trace of chromatin in these bodies; but lying free, there was a considerable amount of amorphous-looking material which took on a pale lilac stain like some of the smaller bodies. This was more plentiful in that part of the film where the bodies occurred. It will be seen, then, that the bodies are pleomorphic, although quite distinct from all the blood elements, and readily recognizable as specific entities.

15. Magnesium Sulphate in Erysipelas.—Four cases are reported by Choksy in which the immediate effects of the application of magnesium sulphate solution were extremely beneficial. Pain and swelling abated, fever decreased, and extension of the disease was controlled in the majority of cases. A saturated solution of magnesium sulphate in water (preferably strained through muslin) was applied round the limb or on the face as a mask, extending well beyond the inflamed area, in from 10 to 15 layers of gauze or a thin layer of absorbent cotton or lint, and covered with oiled-silk or wax paper. The dressing should be wetted as frequently as it gets dry, about once in two hours. It should be removed once in twelve hours for inspection and immediately reapplied. The affected area should not be washed during treatment.

Journal of Tropical Medicine and Hygiene, London

February 1

- 16 Trypanosome Diseases of Domestic Animals in Uganda. Sir D. Bruce.
17 Tropical Life as it Affects Life Insurance. J. Cantlie.

Australian Medical Journal, Melbourne

December

- 18 Tick Fever or Spirillosis and Monadinitis of Fowls. A. A. Brown.
19 Case of Gunshot Wound of the Heart. C. H. W. Hardy.
20 *Autoplastic Ovarian Transplantation and Its Clinical Significance. J. H. Nattrass.
21 *General Anesthesia. R. W. Hornabrook.
22 *Treatment of Acute Pneumonia by Continuous and Persistent Diaphoresis. G. M. Reid.

20. Autoplastic Ovarian Transplantation.—Nattrass is convinced that it is possible to remove the ovary from its normal position in the female body and to transplant it on to other tissues. In the experiments performed by him, ovaries were successfully grafted on to the kidney, spleen, subcutaneously on the external oblique muscle, on the peritoneum, periosteum and the external intercostal muscles. When the transplanted ovary is examined in the early stage, it is found to be firm in consistence, whiter and slightly larger than normal. This is shown by the microscope to be due to swelling of the cells of the stroma, which have undergone fatty degeneration. This degenerative change was found to be present in most of the specimens examined. The amount seems to be inversely proportional to the vascularity of the tissues receiving the graft, and directly proportional to the thickness and density of the graft itself. Thus there was more degeneration in a subcutaneous, than in a renal or splenic graft. In the older grafts there is a diminution in the size of the ovary. There is an increase in the amount of the fibrous tissue, a progressive absorption and repair of pathologic products, a continued development of egg cells, and production and maturation of Graafian follicles, although not nearly to the same extent as in the normal ovary. The grafts become firmly adherent to the adjacent tissues by dense fibrous bands. The graft when placed in its new position is undoubtedly nourished by transudation of fluid from the lymph spaces of the adjacent tissue, hence the periphery of the ovary, or the egg-bearing part, always retains its vitality; but later, blood-vessels become developed and vascular union is established, the graft thus receiving blood from the arterial system. A female dog whose ovaries were removed from the abdominal cavity and were grafted, one on the external oblique muscle, and the other in the sheath of the rectus muscle, repeatedly showed all the symptoms of sexual heat, i. e., vulvovaginal congestion, and sanguineous discharge, and was warded by the dog, showing that the ovaries, even though in this abnormal position, continued to carry on their functions as organs of internal secretion and to regulate the sexual life of the animal. Nattrass

believes that the antoplastic grafting of ovaries is a measure that ought to take its place and fulfil a definite purpose in conservative gynecologic surgery.

21. Also published in the *Australasian Medical Gazette*, December, 1910.

22. Treatment of Acute Pneumonia.—Reid claims that if free and persistent diaphoresis, which necessarily entails a primary dilatation of the skin capillaries, can be established in the first or congestive stage of a threatening pneumonia, the attack can be aborted. When the second or exudative stage has begun, and is progressing, the same method of treatment will by its action still prove effective in limiting the exudative process, and may, furthermore, have a vitally beneficial action in preventing the fatal accumulation of carbonic acid, and other morbid products engendered by the diminished lung function, and increased metabolism by removing the same from the system in or with the sweat. *Pari passu*, diaphoresis reduces body temperature, and checks tissue waste, etc. In effecting his object, Reid has trusted mainly to medicinal agents, with, in children, the additional aid of the hot mustard bath, and in adults the hot-pack or warm sponging. The drug which he mostly employs is a physiologically pure salicylate of soda, in four-hour doses, up to 15 or 20 grains, according to age, and, guided and controlled by the patient's temperature, taken and recorded every four hours. He has also used acetphenetidin in doses up to 10 grains every four hours with the same precautions. With both drugs he has been in the habit of combining general and cardiac tonics and stimulants. His results, in a limited number of cases, have been good, and he has specially noted the absence of cerebral symptoms where the diaphoresis was satisfactory. Several cases in which sweating was interrupted, or could not be properly established for obvious reasons, terminated fatally.

Australasian Medical Gazette, Sydney

December

- 23 Better Medical Organization. D. Hardie.
24 The Tendency Toward Nationalization of Medicine. J. H. L. Cumpston.
25 Bearing of Recent Advances in the Physiology of the Digestive Glands on Gastric Surgery. J. Flynn.
26 Ununited Intracapsular Fracture of the Neck of the Femur Successfully Operated On. M. Herz.
27 A Case of Retroperitoneal Abdominopelvic Lipoma. T. Fiaschi.
28 Surgical Dyspepsias, Especially Appendix Dyspepsia. G. Craig.
29 *General Anesthesia. R. W. Hornabrook.

29. Also published in the *Australian Medical Journal*, December, 1910.

Annales de Gynécologie et d'Obstétrique, Paris

January, XXXVIII, No. 1, pp. 1-64

- 30 Torticollis from Congenital Myopathy. A. Couvelaire.

Archives des Maladies de l'App. Digestif, Paris

December, IV, No. 12, pp. 689-748

- 31 *The Antitryptic Index for Serodiagnosis of Gastro-Intestinal Cancer. J. C. Roux and R. Savignac.

31. The Antitryptic Index for Serodiagnosis of Cancer.—Roux and Savignac have simplified the antitrypsin test devised by Müller and Jochmann and modified by Fuld and Gross. They found the test positive in 89 per cent. of fifty-three cases of certain cancer and in 80 per cent. of the suspects. Except possibly in exophthalmic goiter, tuberculosis and early in pregnancy, the test was negative in the controls, and the conflicting findings possible in the conditions named would seldom, they think, lead to any confusion in diagnosis of cancer. They are convinced that negative findings may be regarded as almost certainly excluding malignant disease. Their technic requires only an hour to complete the test. They use a mixture of equal parts of milk and 2 per cent. solution of agar, filtered while still hot. The whole is then heated to 100 C. in the water bath, then cooled to 60 C. and poured out in a thin layer on Petri dishes. One drop of blood-serum is mixed with 1, 2, 3, 4 or more drops of a 1 per cent. solution of trypsin, in turn, and 1 drop of each of the dilutions is placed on one of the Petri dishes, and near it is deposited a control drop of the pure trypsin solution. The dishes are then incubated for an hour at 50 C. The drop of trypsin digests out the milk casein in the agar mixture and

the antitryptic index is the number of drops of the solution mixed with the serum which are required to overcome the antitryptic power of the serum. Four drops is the highest normal range, and any index over this is strong evidence of the existence of malignant disease. The details of fifty-three cases are given in full and the findings tabulated—the whole forming, they think, an important brief in favor of the differential importance of this simple test.

Archives des Maladies du Cœur, Etc., Paris

January, IV, No. 1, pp. 1-62

- 32 Prognosis and Treatment of Arrhythmia. H. Vaquez.
33 "Blood Diseases." (Les syndromes hématiques associés.) M. Labbé and Laignel-Lavastine.

33. **Blood Diseases.**—Labbé and Lavastine report two cases of chronic purpura and hemophilia in a girl of 16 and a woman of 34, the latter presenting also the signs of pernicious anemia. They comment on the fact that the so-called blood diseases are rather syndromes due to histochemical changes in the blood, resulting from a variety of causes. The clinical evolution of the cases and the action of the treatment instituted show that the three syndromes were not interdependent but merely casually associated. Under serotherapy the tendency to hemophilia was arrested in both patients; the first patient recovered, but the pernicious anemia in the other continued its fatal course unmodified.

Bulletin de l'Académie de Médecine, Paris

January 10, LXXV, No. 2, pp. 29-40

- 34 Advantages of Pylotomy for Removal of Kidney Calculi. M. Le Dentu.
January 17, No. 3, pp. 41-58
35 Hectine in Syphilis. H. Hallopeau.
36 *Case of Rapid Actinomycosis. E. Schwartz.

36. **Actinomycosis.**—Schwartz' patient was a farmer who felt a sting on his cheek while sitting in the grass; a hard and painful tumor developed at the spot. It was excised the sixth week and proved to be an actinomycotic process. The true nature of the process had never occurred to any one or potassium iodid would have been given and operation not attempted, as it is liable to induce metastatic embolism. Letulle has recently encountered a case of circumscribed actinomycotic pleurisy in which the focus was excised and a few weeks later the patient succumbed to a metastatic abscess in the brain.

Bulletins de la Société de Pédiatrie, Paris

December, XII, No. 9, pp. 501-567

- 37 *Developmental Defects Connected with Suprarenal Lesions. (Dystrophies en relation avec des lésions de capsules surrénales: Hirsutisme et progeria.) E. Apert.
38 Hydrocephalus Following Meningitis. R. Voisin.
39 "Scapulum Valgum" in Rachitis. (Élévation congénitale de l'omoplate chez un enfant atteint de malformations multiples.) Nageotte-Wilbouchewitch and E. Apert.
40 Slight Hemiplegia. Nageotte-Wilbouchewitch.
41 *Insufficiently-Fed Infants. (Étude clinique de l'hypoalimentation chez les nourrissons.) P. Merkleu.

37. **Developmental Defects Connected with Suprarenal Lesions.**—Apert reviews the necropsy findings in thirty-five cases of disease of the suprarenal cortex on record and describes the symptoms that had been observed in the individuals during life. They form a special syndrome different, he declares, from that of Addison's disease, but almost equally distinct. In fact there are two syndromes, he says, one resulting from excessive functioning and the other from defective functioning of the suprarenal cortex. The former is characterized by excessive development of the hair and of adipose tissue and of the body in general, with disturbances in the genital functions, while defective development in these directions is the result of imperfect development of the suprarenal cortex. He applies the term "hirsutism" and "progeria" to these different types and states that the former may reveal the presence of a tumor, possibly a cancer, in the suprarenal cortex, the removal of which is urgently indicated, while in the progeria type—senile dwarfism—organotherapy is indicated, the suprarenal capsule itself being administered and not an extract of the medulla.

41. **Insufficiently Fed Infants.**—Merkleu comments on the crying of the infant when it does not get enough food at a

meal, its restlessness and its gradual exhaustion and dropping to sleep, the whole picture being very different from the fatigue and slumber of the well-fed healthy child. Even during its sleep the child is still restless, and it whimpers at times, while the slightest noise rouses it, when it appeals anew for the nourishment it needs without having the strength to make its appeals very insistent. There is also, he states, a marked tendency to a false constipation, not enough food being obtained to make normal stools; the walls of the intestine, suffering from lack of nourishment, grow too weak to move the feces along. Sometimes this supposed constipation is the first sign to call attention to the fact that the child is not thriving. In other cases, the stools are regular but they have the aspect of those with ordinary enteritis; even diarrhea may be observed. The stools may be fluid even when the bowels can be moved only with a suppository. These diarrhetic stools alternated with periods of constipation in one of the four cases reported in detail. The possibility of insufficient nourishment should never be forgotten as, if gastro-intestinal infection is assumed and the food still further reduced, serious trouble may follow. In two of his cases the infants vomited frequently; as a rule, the vomiting in these cases follows not long after the meal. The true cause for the vomiting can be detected by noting the amount of food the child is obtaining and the improvement that follows an ampler ration. One of the four children vomited in the morning before it had had any food. Another sign of defective nourishment is the small amount of urine although, like the constipation, it is a false oliguria; it was pronounced in three of the four cases reported. The way the child nurses is also characteristic, sucking slowly and stopping often; or it sucks and no swallowing movements can be detected. Some infants give up when they realize the futility of their efforts, and lie with open eyes or in a somnolent condition, while others fret incessantly. The flabbiness of the muscles is another sign, while the wrinkled skin and pallor also attract attention; but the infant's eyes are bright and its glance is vivacious until the defective nourishment becomes actual inanition. If recognized in time and the child is properly fed, it recuperates, he says, with astonishing rapidity.

Lyon Médical, Lyons

January 1, CXVI, No. 1, pp. 1-56

- 42 Postoperative Inflammatory Tumors in the Omentum. (Épithéomes post-opératives.) X. Delore.
January 8, No. 2, pp. 57-96
43 Improved Technique for Induced Pneumothorax. (De quelques moyens pratiques destinés à prévenir les accidents immédiats du pneumothorax artificiel.) B. Lyonnet and M. Piéry.
January 15, No. 3, pp. 97-132
44 Pathogenesis of Progressive Scleroderma. C. Roubier and A. Lacassagne.
January 22, No. 4, pp. 133-168
45 Primary Melanosarcoma of the Rectum. A. Chalier.

Presse Médicale, Paris

January 18, XIX, No. 5, pp. 41-48

- 46 *Differential Importance of Albumin in Sputum. M. Gantz and R. Hertz.
January 21, No. 6, pp. 49-56
47 Meningeal Form of Actinobacillosis. P. Ravaut and Pinoy.
48 Congenital Myxedema from Defect in Thyroid Development. G. Roussy and J. Clunet.
49 Ptosis of Liver. (L'hépatoptose avec interposition de viscères entre le foie et la coupole diaphragmatique.) D. Chilaïditi.
50 Grafted Artery. (Cas de greffe artérielle.) A. Pirovano.
January 25, No. 7, pp. 57-64
51 Serodiagnosis of Echinococcus Disease. J. P. Urioste and A. Scaltritti.

46. **Diagnostic Importance of Albumin in Sputum.**—Gantz and Hertz applied tests to determine the presence of albumin in the sputum of 125 patients, each examined two or three times. The group included only sixty with known tuberculosis. The simplicity of the albumin test and its reliability in revealing an inflammatory process in the lung or pulmonary edema commend it for general adoption, they assert, as a valuable bedside test. The albumin reaction is not obtained in bronchial catarrh and it is dubious in fibrous pulmonary tuberculosis, but it is positive in advanced and incipient tuberculous pulmonary lesions, in pneumonia and embolism and in even slight pulmonary edema. The test was made by adding 2 c.c. of acetic acid and 10 c.c. of dis-

tilled water to 10 c.c. of sputum. The mixture was then stirred briskly with a glass rod, filtered and the filtrate boiled, when the albumin was thrown down. It was sometimes necessary to add a little sodium hydroxid when the fluid was too acid.

Revue de Gynécologie, Paris

January, XVI, No. 1, pp. 1-88

- 52 Artificial Vagina Made from Transplanted Intestine: Seventh Case on Record. J. Abadie.
53 Rupture of Large Blood Vessels in Abdominal Contusions. Ducuing and Florence.

Berliner klinische Wochenschrift

January 23, XLVIII, No. 5, pp. 153-196

- 54 Cyst Formation in Kidney, Liver and Spleen. (Cystenbildungen der Niere, Leber, Milz und ihre Entstehung.) H. Coenen.
55 Improved Radiologic Examination of Gastro-Intestinal Tract. G. Holzknecht.
56 *Salvarsan. (Zur Wirkungs- und Anwendungsweise von Salvarsan.) F. Lesser.
57 Pfannenstill's "Two-Route" Treatment of Lupus of the Nose. (Die Behandlung des Lupus cavi nasi mittelst Iodnatrium und Wasserstoffsuperoxyd nach der Methode von Dr. S. A. Pfannenstiel.) O. Strandberg.
58 Improved Technic for Staining *Spirochaeta pallida*. E. Klausner.
59 *Apical Percussion Findings. (Zur diagnostischen Bewertung der Befunde über den Lungenspitzen.) E. Laser.
60 *Stammering. (Zur Psychologie und Therapie des Stotterns.) O. Aronsohn.

56. **Salvarsan and the Wassermann Reaction.**—Lesser emphasizes that medication in syphilis should be guided by the reaction to the Wassermann test, as he believes that only when the test is permanently negative can the disease be regarded as inactive or cured. The aim should be, he thinks, to give the salvarsan in doses that will tone up the organs and enable them to manufacture the necessary antibodies, giving up the idea of trying to kill all the spirochetes at one stroke. This tonic action on tissues and organs is realized better with small than with large doses; the latter have a toxic action and impair functioning rather than stimulate it in the various organs. His experience has been that the best technic on these principles is to inject 0.1 gm. of salvarsan, in suspension in oil of sweet almonds, once a week, according to the technic for injection of the insoluble mercurial salts. He thus injects 0.6 gm. of salvarsan in all in about 6 c.c. of oil. A week after the sixth injection the Wassermann test is applied and if the findings are still positive he continues the injections. These small doses are convenient for outpatients, and he advocates having the salvarsan put on the market in 0.1 gm. doses already mixed with the oil.

59. **Puzzling Physiologic Apical Findings.**—Laser has encountered a number of cases in which patients had been sent to a sanatorium for lung diseases on account of supposed pathologic percussion findings at the apices, but time revealed that the apices were physiologic. He comments on the trail of broken engagements, distress and poverty liable to follow a mistaken assumption of tuberculosis, and describes the features of the percussion findings at the apex which differentiate the physiologic from those with tuberculous processes. The patients in the cases he has encountered were mostly girls, inclined to be pale and thin, complaining of lassitude and cough, and some with mucous expectoration. The area of resonance over the right apex was abnormally small; frequently the right apex dragged behind, and the breathing sound was more distinct here than in the left apex; especially over the right supraspinous fossa the expiration sounded peculiarly loud and long, but there were never any râles, bacilli in the sputum or fever. These findings persist unmodified for years and if other persons not suspected of tuberculosis are examined systematically, as Laser has done on a large scale, similar findings will frequently be discovered in the healthy. He is inclined to explain them as the result merely of an unusually wide lumen of the right bronchial tube—a physiologic occurrence. In some people both apices present the same findings, and they are liable to occur in slender men as well as in women. Blümel has recently called attention to similar findings in persons unable to breathe freely through the nose, and in looking over his records Laser has also found it noted that some of the patients in question were mouth-breathers.

60. **Stammering.**—Aronsohn explains stammering as a psychologic infirmity. These individuals are generally morbidly afraid of laying themselves open to ridicule and consequently they strive to suppress emotional stress on what they are saying. Treatment should be along psychologic lines, he affirms. It is irrational to try to train the muscles to coordination when the trouble is in the mind and not in the muscles. The main point is to teach the individual to think simply and to express himself simply and genuinely, paying no attention to the way he speaks. Reading exercises are useful adjvants except when the patient does not stutter when reading aloud.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

December 30, XIII, No. 23, pp. 881-928

- 61 *Hernia in the Linea Alba. (Hernien der Linea alba und ihre Bedeutung für die innere Medizin.) L. Müller. Commenced in No. 22.

61. **Epigastric Hernia.**—Müller summarizes in turn the principal points of sixty-eight articles that have been published bearing on hernia in the linea alba and its importance for internal medicine. The insignificance of the objective findings in comparison with the serious stomach and intestinal disturbances is a prominent feature. In one of Sebba's cases, a woman of 46 had suffered for eighteen years from gastro-intestinal disturbances with repeated green vomiting; finally symptoms of ileus developed. This led to the discovery of the epigastric hernia hidden behind the unusually thick layer of adipose tissue in the abdominal wall. Richter warns that the hernia may easily escape detection unless the patient is examined standing with the trunk bent forward. In the dorsal decubitus the hernia becomes spontaneously reduced and escapes discovery. A history of work requiring much bending forward and backward, carrying heavy loads, and other factors tending to weaken the upper abdominal wall, may give the clue to the source of the trouble, as these factors are seldom encountered in the history of gastric ulcer. The increased intensity of the symptoms after physical exercise also speaks more for hernia than for ulcer; the discomfort with the latter is generally associated with food. Temporary relief from discomfort is often obtained with ulcer when the patient lies on the right side, but with hernia, relief is obtained by reclining on the back. The tenderness also is more localized and constantly at the same point. Gastric ulcer is more common in anemic girls, and hernia in robust, hard-working men. Stomach colic and localized pain in the linea alba may sometimes result from purely nervous causes, from intercostal neuritis after influenza, from gall-bladder disease, pancreatitis or appendicitis, enteroptosis, and retroflexion of the uterus. In two cases reported by Mezger the disturbances were relieved by operative treatment of the epigastric hernia but recurred later and an accompanying or causal gastric ulcer was discovered. Ury and Strauss have reported eight similar cases and suggest that the traction from the hernia led to development of the ulcer. Kelling thinks that irritation of the nerves from the presence of the hernia may lead to secondary ulceration in the stomach by reflex action. Capelle has reported that the thirty-five patients with epigastric hernia who have been given operative treatment at the Breslau surgical clinic, were all apparently cured but reexamination a year later showed that the cure had been permanent in only nine; the others had more or less disturbances and the hernia had recurred in six. In seven cases non-absorbable sutures and cicatricial adhesions were probably responsible for the trouble; seven other patients complained of gastric disturbances and an ulcer was probably responsible in two. A truss is of little use for epigastric hernia as it will not stay in place at this point.

Deutsche medizinische Wochenschrift, Berlin

January 26, XXVII, No. 4, pp. 145-192

- 62 *Epidemic Poliomyelitis. (Heine-Medinische Krankheit.) A. Baginsky.
63 Esch's Cholera Hemoglobin Culture Medium. A. Friedrichs.
64 *Syphilis of the Stomach. (Syphilis des Magens.) M. Sieghelm.
65 *Febrile Liver Syphilis. (Klinischer Befund und pathologisch-anatomischer Befund bei zwei Fällen von tertärer fieberhafter Leberlues.) L. Kirchheim.

- 66 Improved Technic for Epiphanin Serodiagnosis of Syphilis. W. Weichardt.
 67 *Myeloid Chloroma. E. Paulicek and L. Wutscher.
 68 Primary Typhlitis. K. F. Herhold.
 69 Physiologic Action of Thallium. A. Buschke.
 70 *Traumatic Sarcoma. E. Heinrich.
 71 *Sodium Thiosulphate for Removal of Iodin Stains. (Natrium hyposulfurosum als Jodabwaschmittel.) F. Snoy.
 72 Children's Sanatorium. (Die Kinderheilstätten vom roten Kreuz in Hohenlychen.) A. Bruck.
 73 Biogenesis and Ontogenesis. (Haeckels biogenetisches Grundgesetz und das ontogenetische Kausalgesetz von Oskar Hertwig.) F. Keibel.

62. **Epidemic Poliomyelitis.**—Baginsky remarks that the term "spinal paralysis" will have to be dropped as the disease is so variable and is liable to include meningeal, bulbar and spinal symptoms. He urges sending out a question blank to the physicians in the district to get a general oversight of the conditions prevailing in the recent Berlin epidemic. It was noted at Graz that more cases developed in the surrounding country than in the town itself.

64. **Syphilis of the Stomach.**—Siegheim summarizes what has been published on the subject of gastric ulcer, gastric tumor and pyloric stenosis developing as a syphilitic lesion and a fourth form—hyperplastic cellular infiltration leading to fibrous induration. It is only three years since Brunner was able to compile from the literature thirteen cases in which an operation had been performed on the stomach on a mistaken diagnosis, the lesion in question proving to be of syphilitic origin. Surgical treatment of tertiary syphilitic lesions in the gastro-intestinal tract, Siegheim exclaims, in future should be referred to only as a historical reminiscence. The Wassermann reaction may clear up the diagnosis, as in a case he reports from his own experience: A man of 39 acquired syphilis and was given repeated thorough courses of mercurial and iodid treatment during three or four years. Sixteen years later occasional attacks of vomiting and oppression in the gastric region after eating were accompanied by loss of weight and other symptoms, dilatation of the stomach, lack of free hydrochloric acid and presence of lactic acid with radiographic findings typical of stenosis of the pylorus. All this, in connection with the fact that the patient belonged to a "carcinoma family," pointed to gastric cancer in an advanced stage. As a last glimmer of hope the Wassermann test was applied; the findings were strongly positive, and under energetic mercurial treatment all the symptoms subsided and the patient rapidly recovered apparently complete health and has no further gastric disturbances. The peculiar severity of the syphilis in this case is evident in the serious recurrence after sixteen years in the form of a gumma in the pyloric region leading to stenosis and consequent dilatation of the stomach. Einhorn has reported a similar case except that in his patient there was never any lack of free hydrochloric acid. In Siegheim's case the motor functioning of the stomach became normal but no free hydrochloric acid could be found at the last examination although the gastric functioning was apparently normal. He adds that his case teaches the importance of direct treatment of the syphilis so long as the Wassermann reaction is markedly positive.

65. **Febrile Syphilitic Lesions in the Liver.**—In Kirchheim's two cases the tertiary lesions in the liver had involved the adjoining diaphragm with perforation in one case and propagation to the right lower lobe, empyema and chronic inflammation of this part of the lung. In the other case the participation of the diaphragm in the process entailed a syndrome simulating acute pneumonia, although there had been no initial chill and the sputum was not characteristic. In the second week pleurisy with effusion developed requiring repeated tapping. The fever persisted after subsidence of the pneumonia but repeated examinations failed to reveal the clue until in the ninth week the liver was found to be enlarging and the progressive cachexia pointed to a subphrenic abscess and staphylococci were cultivated from the pus. Hemorrhagic nephritis followed with death the fifth month after the development of the pneumonia-like syndrome. The microscope disclosed typical gumma. In both cases secondary infection of the gumma in the liver was responsible for the protracted course and final fatal termination. Specific treatment had not been given in either case as there had been nothing to suggest

syphilis until, a few days before death, one patient acknowledged old syphilitic infection; specific treatment then came too late. In a third case three small gummas in the liver had involved the diaphragm but had caused no further trouble, the patient succumbing later to a brief perforation peritonitis. Klemperer has asserted that ulcerating gumma alone is sufficient to cause fever; in his cases all symptoms disappeared under specific treatment.

67. **Myeloid Chloroma.**—Paulicek and Wutscher give the particulars of a case in which a chronic myeloid leukemia in a young man blended into chloromatosis. The Roentgen-ray treatment given the patient may have been responsible for the development of the latter.

70. **Traumatic Sarcoma.**—A man aged 41 was hit in the calf by an iron rod. The open wound healed in two weeks but a swelling persisted and the point became painful so that by the end of five months he had to give up work and take a course of rest and compresses for the assumed varicose disturbances. No improvement followed and the lesion was excised. The microscope showed a round-celled sarcoma, and the thigh was amputated at once but metastasis in the spine developed in a few months. The insurance company accepted without question the direct connection between the industrial accident and the following malignant disease.

71. **To Remove Iodin Stains.**—Snoy calls attention anew to the power possessed by sodium thiosulphate to cleanse the skin and linen of the stain left by tincture of iodine. He applies a warm concentrated solution of the sodium hyposulphite (as it is more generally called), to the iodine stain. A chemical change rapidly takes place, the two chemicals blending to form sodium iodide and tetrathionate which are both very soluble and readily wash off the skin and tissues. He has never observed any injurious by-effects from the procedure on either skin or linen.

Medizinische Klinik, Berlin

January 22, VII, No. 4, pp. 127-164 and Supplement

- 74 *Scarlet Fever and Its Complications. (Scharlachfieber und seine Komplikationen.) H. Lüdke.
 75 *Symptomatology of Cerebral Embolism. (Gehirnembolie.) B. Hippel.
 76 Serotherapy of Urticaria. P. Linser.
 77 Acute Syphilitic Yellow Atrophy of the Liver. W. Braunschweig.
 78 Respiratory Exercises in Treatment of Bronchial Asthma. L. Hofbauer.
 79 Peroneus Paralysis After Administration of Salvarsan. (Zur neurotoxischen Wirkung des Salvarsans.) G. Walterhöfer.
 80 New Technic for Determination of Tubercle Bacilli. (Neuere Methoden zum Nachweis von Tuberkelbazillen in Sputum und in pathologischen Sekreten und Geweben.) M. Kawai.
 81 Salvarsan in Syphilis. E. Tomaszewski.

74. **Scarlet Fever Complications.**—Lüdke says in the course of his study of the subject that the temperature curve is a valuable guide to the prognosis; even the slightest rise after the disease has begun to decline indicates some complication, and reduction in the amount of urine is the most certain sign of severe nephritis. He states that one attack of scarlet fever generally confers immunity, and that the character of the prevailing epidemic determines whether the disease is to be mild or severe. Special attention must be paid to the middle ear with scarlatinal sore throat; tenderness in the mastoid region and any rise in temperature should be watched for. Even with mild scarlet fever the child should stay in bed three weeks, he declares, and not be allowed to get up until repeated examination of the twenty-four hours' urine shows the absence of albumin. The disease may occur merely as an ordinary sore throat and thus escape detection.

75. **Symptomatology of Embolism in Cerebral Vessels.**—Hippel has recently encountered two cases without the usual triad of symptoms—apoplectic seizure, loss of consciousness and hemiplegia. The first patient was a young man and hemiplegia developed insidiously, the left side becoming paralyzed for a few days and then the hemiplegia subsided and the patient felt comparatively well for two days, but then symptoms typical of meningitis developed and he died in coma. Necropsy revealed embolic obstruction of the right middle cerebral artery. Wernicke has reported a similar case in a woman of 73, death occurring from asphyxia. Hippel's

patient, after subsidence of the hemiplegia, showed no symptoms of embolism, merely the syndrome typical of meningitis. Death occurred two weeks after the first sign of trouble. Walker has reported three cases of cerebral embolism with symptoms suggesting merely acute meningitis. In Hippel's second case a boy of 8 convalescing from diphtheria suddenly developed symptoms of meningitis; there was no tendency to hemiplegia and no apoplectic seizure, but necropsy disclosed extensive embolism of the right middle cerebral and internal carotid arteries involving the finest ramifications.

Monatsschrift für Kinderheilkunde, Leipsic

IX, No. 9, pp. 455-549

- 82 Influence of Heat on Infant Organism. H. Kleinschmidt.
- 83 Buttermilk in Infant Feeding. (Buttermilchernährung des Säuglings.) M. Menschikoff.
- 84 Respiratory Metabolism in New-Born Infants. (Zur Physiologie des neugeborenen Kindes. II.) W. Birk and F. Edelstein.
- 85 Duration, Extent and Course of Physiologic Decline in Weight of New-Born Infants. (Zur Physiologie des Neugeborenen.) W. Pies.
- 86 Lime Metabolism in Rachitis. (Kalkstoffwechsel bei Rachitis.) W. Birk and A. Orgler.

Münchener medizinische Wochenschrift

January 24, LVIII, No. 4, pp. 177-232

- 87 *Hemorrhages During Early Pregnancy and Their Relation to Abortion. L. Seitz.
- 88 Pharmacologic Research on Mixed Anesthesia. (Mischnarkose.) H. Fühner.
- 89 *Metabolic Research During Exclusive Milk Diet. (Stoffwechseluntersuchungen bei der Karellschen Milchkur.) C. Hegler.
- 90 Stimulating and Coagulating Action of Epinephrin. (Zur kreislaufanaleptischen und telhämostyptischen Wirkung des Nebennierenextraktes.) R. von den Velden.
- 91 Dosage of Roentgen Rays. (Methode zur Messung der Röntgenstrahlung in der Therapie.) H. Meyer.
- 92 *Salvarsan in Syphilis. B. Spiethoff.
- 93 Cervical Cesarean Section. (Zur Methode und Indikationserweiterung des zervikalen Kaiserschnitts.) G. A. Walcher.
- 94 *Improved Technic for van Deen Blood Test. Wackers.
- 95 Regional Variability in Susceptibility to Iodin. (Empfindlichkeit gegen Iod.) P. Fleischmann.
- 96 Radiotherapy of Large Epithelial Defects. C. Widmer.
- 97 Historical Contribution to Treatment of Syphilis with Arsenic. G. Kirchgaessner.

87. Hemorrhage During the First Months of Pregnancy and Its Relation to Abortion Later.—Seitz states that hemorrhage in the first four months of pregnancy occurred in 87 of the 25,000 lying-in cases at the Munich maternity, the patients regarding it as recurring menstruation, and in an additional 273 there was atypical hemorrhage, but abortion did not follow at once in any instance. The fetus however had in some cases suffered so that only 145 of the children were carried to normal term and left the clinic in good health. Treatment of the hemorrhage has not much prospect of success in preventing serious injuries to the fetus except when the hemorrhage is due to trauma or endometritis. With trauma, the hemorrhage is the result of separation of some portion of the placenta, and treatment should aim to prevent any contractions of the uterus which might separate more of it. Strict rest in bed should be enforced. Only with bed-rest for from six to eight weeks is it possible to tide the patient past the critical period when she is subject to habitual abortions at the period in question or has been having long-continued hemorrhages. Opium should be given as indicated to prevent the uterus from contracting. Long-continued hemorrhage during the first two months seems to be inevitably fatal for the fetus, but during the third and fourth month it displays remarkable resistance. In conclusion he states that in two cases the ovum was expelled without decidua after hemorrhage during the second month, but to his surprise the pregnancy continued and a healthy child was born at term: there had evidently been a twin pregnancy and after expulsion of one fetus the other continued its growth.

89. Restriction to Milk in Treatment of Obesity.—Hegler records the metabolic findings in a number of persons taking the Karell cure, namely restriction to less than a quart of milk a day, the patient staying in bed, the bowels being kept loose with a laxative mineral water, with massage given daily—this treatment being kept up for from five to ten days. In one case the patient weighing 451 pounds, lost 101 pounds in the course of eighty days during which the Karell course had been repeatedly given and the patient never allowed over

700 calories a day. The general health was much improved and the patients felt stronger in every case. Practical experience seems to confirm the advantages of the Karell course, he states, although theoretically much can be said against such a starvation method of treatment.

92. Salvarsan.—Spiethoff has encountered a second case of collapse several hours after injection of salvarsan. His first case was mentioned in these columns Oct. 8, 1910, page 1331. In the second case the collapse occurred during the daytime, five hours after an intravenous injection of 0.45 gm. in an alkaline solution. The danger was promptly recognized and stimulants applied, soon restoring the patient, a robust young woman in the second stage of syphilis. In the other case the collapse occurred in the night after subcutaneous injection, and nothing was known of it in time. Since then Spiethoff has made the injections exclusively in the morning. The heart was not quite normal in either of these cases, but the collapse, he believes, was unmistakably the result of arsenic intoxication. His experience with salvarsan in 200 cases of syphilis confirms, he thinks, the advantages of the Iversen technic, first intravenous and then after four days a subcutaneous injection, with another intravenous injection four weeks later. Great attention must be paid to the heart both before and after the treatment and tobacco and alcohol must be avoided for a time. One young man attended a party eight days after injection of 0.6 gm., and he drank a great deal and smoked cigarettes, neither of which had ever previously affected him. But the next day acute heart weakness developed with which he had to contend for weeks. The action of the three poisonous substances together, the nicotine, alcohol and salvarsan, proved too much for his heart. Myocarditis and heart defects contra-indicate the use of salvarsan, Spiethoff insists, as also affections of the central nervous system localized in vital centers. Any local reaction to the salvarsan might prove dangerous under these conditions. In one of his cases a man had well compensated mild aortic insufficiency but no other pathologic findings could be detected in the heart. A few days after subcutaneous injection of 0.3 gm. salvarsan, signs of heart weakness became apparent, proving fatal on the eleventh day. Necropsy revealed unsuspected degeneration of the myocardium which had evidently become aggravated under the influence of the medication.

94. Improved Technic for Test for Occult Blood.—Wackers applies the test to the fluid to be examined diffused over the walls of a moist filtering paper funnel. It is astonishing, he says, how this magnifies the findings and does away with the uncertainty in case of highly colored urine. The advantages of the simple guaiac-turpentine test thus "enriched" are evident in case of convalescence from hemorrhagic nephritis, for example, permitting detection of even the slightest trace of blood in the urine. The test can be made with as little as 10 c.c. of urine.

Wiener klinische Wochenschrift, Vienna

January 26, XXIV, No. 4, pp. 115-152

- 98 *Pancreatic Extract in Epinephrin Glycosuria. (Hemmung der Adrenalinglykosurie durch Pankreaspräparate.) O. v. Fürth and C. Schwarz.
- 99 Origin of Melanotic Skin Pigments. K. Kreibich.
- 100 *Serotherapy of Cerebrospinal Meningitis. (Genickstarre und Heilserum.) E. Schepelmann.
- 101 Nail Extension for Fractures. (Nagelextension aus dringlicher Indikation.) H. Ehrlich.

98. Research on Epinephrin and Other Glycosuria.—Fürth and Schwarz report experimental research which has shown that injection of pancreas extract, turpentine or other irritating substance into the peritoneum injures the kidneys to such a degree that their functioning is seriously impaired and they are unable to eliminate salt and sugar as under other conditions. This simple explanation of the checking of the glycosuria which follows injection of epinephrin, by the injury of the kidneys after injection of almost any irritating substance into the peritoneum, destroys, they say, the foundations for Zuelzer's assumption of some chemical hormone inhibiting the epinephrin glycosuria when pancreas extract is injected into the peritoneum. Their findings also explain the familiar fact that in diabetes any injury of the kidneys is liable to reduce the output of sugar in the urine.

100. **Serotherapy in Epidemic Meningitis.**—Schepelmann reports an unusually severe case of epidemic cerebrospinal meningitis in a previously healthy woman of 26. No benefit seemed to be derived from the usual measures, including twice repeated lumbar puncture, but the thirteenth day of the disease a prompt turn for the better followed lumbar injection of antimeningococcus serum. The temperature dropped with sweating and recovery was soon complete. The only by-effects were recurring harmless urticaria and, the first day, there was some weakness of the heart requiring stimulants. He reviews the literature on the subject of serotherapy of meningitis, drawing the conclusion that all other measures have merely symptomatic action—the serotherapy alone is a causal remedy. The mortality of the disease has dropped since its introduction in Germany to two-thirds or a quarter of what it used to be, and the course of the disease is much milder and shorter. The earlier the injection is made, the better the results, and a single large dose is better than repeated small doses. Next to diphtheria, he declares, ranks the serotherapy of meningitis. No serious by-effects from its use have been reported.

Zeitschrift für Kinderheilkunde, Berlin

November, I, No. 2, pp. 139-206

- 102 *Pathogenesis of Digestive Disturbances in Infants. (Verdauungsstörungen im Säuglingsalter.) H. Bahrdt, F. Edelstein, L. Langstein and E. Welde.
- 103 Bacterial Content of Infant Feces. S. Kramsztyk.
- 104 Iron Content of Human Milk and Its Relation to Anemia in Infants. (Eisengehalt der Frauenmilch.) H. Bahrdt and F. Edelstein.
- 105 Behavior of Camphor in Infant Organism. (Zur Kenntnis der Ausscheidung von Glucuronsäure im Säuglingsalter.) F. W. Schlutz.

December, No. 3, pp. 207-314

- 106 Sugar Content in Infants' Blood. (Blutzuckeruntersuchungen bei Säuglingen.) S. Coblner.
- 107 Action of Various Sugars in Dyspeptic Infants. (Wirkung der verschiedenen Zuckerarten bei ernährungsgestörten Säuglingen.) J. S. Leopold.
- 108 *Diagnostic Importance of Glycuronic Acid in Infants' Urine. (Klinischer Wert der neueren Glucuronsäure-Reaktion für die Beschreibung des Harnes der Säuglinge.) E. Mayerhofer.

January, No. 4, pp. 315-422

- 109 Experimental Psychology in Children. (Assoziationsversuche an Kindern.) T. Goett. Commenced in No. 3.
- 110 Influence of Phosphorus-Cod Liver Oil on Metabolism of a Rachitic Infant. C. Towles.
- 111 Elimination of Gastric Ferments in Infants' Urine. (Ausscheidung der Magenfermente im Säuglingsharn.) H. Pechstein.
- 112 *So-Called Alimentary Fever. P. Heim and K. John.

102. **Pathogenesis of Digestive Disturbances in Infants.**—Bahrdt and his coworkers have devised a method for quantitative determination of the volatile fat acids. The apparatus combines a vacuum and steam distillation, and they record the findings with human and cows' milk, infants' stools and dog stomach content and stools. Their research was undertaken to determine the actual source and nature of the hypothetical toxins developing in the course of digestion which are assumed to be responsible for the so-called alimentary intoxication.

108. **Diagnostic Importance of Glycuronic Acid in Infants' Urine.**—Goldschmiedt described last year a simple, rapid and sensitive test for glycuronic acid in the urine, and Mayerhofer here reports the findings in ten infants. They confirm the importance of the test for clinical purposes as the reaction was found almost invariably negative in healthy infants but it became promptly positive with any disturbance in the child's health, especially any febrile diarrheic trouble. In advanced stages, the findings may become negative again as ability to eliminate glycuronic acid becomes exhausted. The test is made by adding to 1 drop of urine 2 drops of a 10 or 15 per cent. alcoholic solution of alpha naphthol. The mixture is then poured cautiously on top of 3 or 4 c.c. of concentrated sulphuric acid. Colored rings form at the zone of contact between the two liquids, and on the side toward the sulphuric acid an intensely green ring forms in case of the presence of glycuronic acid in the urine. To have the test absolutely certain, the nitrites must first be excluded, which is easily done with the diphenylamin reaction. A positive alpha naphthol reaction in combination with a negative diphenylamin reaction reveals the presence of glycuronic acid in the urine, and this finding parallels the digestive disturbances and disappears as conditions return to normal. The findings with this test

explain the danger of giving camphor to infants suffering from inanition. Hochsinger recently reported serious symptoms of intoxication in an infant with cholera infantum and inanition who had been given small doses of camphor.

112. **Alimentary Fever.**—Heim and John suggest that what has been called alimentary fever is in reality more a stasis fever—a stagnation of heat, and they present arguments and evidence to sustain this view.

Zentralblatt für Chirurgie, Leipsic

January 28, XXXVIII, No. 4, pp. 105-152

- 113 Operative Treatment of Cleft Palate. A. Codivilla.
- 114 *Improved Technic for Operations on the Thorax. (Handgriffe am Zwerchfell und Herzen für Thoraxoperationen.) H. Teske.

114. **Improved Technic for Operations Within the Thorax.**—Teske found on laboratory animals that the dangers from opening up the thoracic cavity could be obviated by mechanical means to prevent the diaphragm from making excessive excursions. Traction on the manubrium before opening the chest has this effect, and he suggests traction on the costal arches on both sides as liable to prove effectual in man. After the chest is opened he pushes down the bulging diaphragm with the tip of his little finger, or a spatula, repeating this rhythmically, and he found that the respiration became slower and regular at once when this was done. In applying the compression to the diaphragm, he manages so as to give a little support to the heart at the same time. By this means it is possible to ward off the momentary arrest of the respiration as the thorax is opened up, which he regards as the chief factor in pneumothorax shock.

Zentralblatt für Gynäkologie, Leipsic

January 28, XXXV, No. 4, pp. 137-176

- 115 Lymph Follicles in Mucosa of Cervix Uteri (Gehäuftes Vorkommen echter Lymphfollikel in der Schleimhaut der Portio vaginalis uteri.) H. Hauser.
- 116 Cancer in Stump of Cervix Uteri. R. v. Fellenberg.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 19, XXXII, No. 9, pp. 91-98

- 117 Incubation Period in Malaria. M. Gioseffi.
- January 22, No. 10, pp. 99-114
- 118 Case of Tuberculous Process in Body of Uterus. P. Romeo.

Riforma Medica, Naples

January 1, XXVII, No. 1, pp. 1-56

- 119 Advantages of Proper Proportion of Animal Food: Tests on Vegetarians. (Influenza delle proteine animali nei vegetariani.) P. Albertoni.
- 120 *Cancer Involving Stomach and Spleen. (Lezione clinica.) G. Baccelli.
- 121 *Acute Sepsis in Children. A. Baginsky.
- 122 Variability of Diseases. G. Banti.
- 123 Symptoms with Disease of Parietal Lobe of the Brain. (Sindrome parietale.) L. Bianci.
- 124 *Omentopexy for Ascites with Valvular Defect. C. Bozzolo.
- 125 *Prophylaxis of Malaria. A. Celli.
- 126 Treatment of Surgical Tuberculosis, Especially of the Soft Parts. A. d'Antona.
- 127 Salvarsan in Syphilis. T. De Amicis.
- 128 Myelopathic Albumosuria. (Sul morbo di Kahler.) E. De Renzi.
- 129 Induced Pneumothorax. (Il pneumotorace artificiale guarisce la tisi? Ed in qual modo?) C. Forlanini.
- 130 Pharmacologic Study of Mercurial Compounds. (Albuminati mercuriosi e albuminati mercurici in rapporto all'azione farmacologica dei diversi composti mercuriali.) G. Gaglio.
- 131 *Liver Percussion Findings on Left Side. (Sull'ottusità epatica vertebrale e paravertebrale sinistra.) P. Grocco.
- 132 Sydenham's Chorea a Curable Encephalopathy. V. Hutinel.
- 133 The Sugar in the Blood. (Lo zucchero del sangue.) R. Lépine.
- 134 *Present Status of Specific Treatment of Tuberculosis. (I nuovi orientamenti della patologia e della clinica della tubercolosi in rapporto alla terapia specifica.) E. Maragliano.
- 135 *Chronic Hypothyroidism. E. Marchiafava.
- 136 *Serotherapy in Syphilis. G. Marinesco.
- 137 Salvarsan. A. Murri.
- 138 *Acetonuria and Its Influence in Treatment of Diabetes Mellitus. C. v. Noorden.
- 139 Exostosis and Talalgia. (Le esostosi sotto-calcaneae e la talalgia.) P. Reclus.
- 140 *Sign of Metastasis with Cancer of Pylorus. I. Tansini.
- 141 *Phloridzin Test of Liver Functioning. (Nuove indagini sul valore semeiologico della glicosuria floricinica, considerata come segno d'insufficienza epatica.) I. Teissier.

120. **Study of the Patient.**—The *Riforma* opens its twenty-seventh year with a special number containing brief articles from twenty-six leading internists. Baccelli closes his bedside lecture on a case of cancer involving presumably the

stomach and spleen, with the remark that as Cato, in ancient Rome, used to close all his speeches, on every occasion, with the words "Carthage must be blotted out," so he never lets an opportunity pass to reiterate that the study of the patient is the fundamental basis of all medical training, that the laboratory is made for the clinic, and that the clinic is the supreme authority at all times and on all occasions.

121. Acute Sepsis in Children.—Baginsky reports a case of general pneumococcus sepsis evidently originating in the tonsils. Pneumococci were found also in the appendix. In a second case staphylococci were responsible. He has noticed signs of primary visceral tuberculosis in twenty-four children dying from malignant scarlet fever in the last few years, and also in nineteen cases of malignant diphtheria but no signs of tuberculosis or syphilis were apparent in the majority of his cases of fulminating sepsis in children.

124. Omentopexy for Recurring Ascites from Valvular Disease.—Bozzolo reports a case in which the tendency to recurring ascites was completely cured by the Talma operation—omentopexy—to provide a collateral circulation. The patient was a woman of 30 who had had several attacks of acute articular rheumatism leaving a valvular defect with cardiac cirrhosis of the liver and abdominal dropsy. There were no signs otherwise of adhesive pericarditis and no traces of hepatitis were found at operation. A week later, the ascites had recurred and in the third week 6½ liters of fluid were withdrawn, and 8 liters again nearly three weeks later; after this the dropsy gradually subsided and by the end of two months there was no further trace of ascites and there has been no recurrence during the year and a half to date. Bozzolo knows of only one other case on record in which ascites from a cardiac defect was treated with omentopexy, and the result was equally successful.

125. Prophylaxis of Malaria.—Celli says that effectual prophylaxis of malaria requires time, organization, education, quantities of quinin and patient perseverance before it will be possible to eradicate the century-old plague of malaria in the endemic zones in Italy. The region is too vast for destruction of the mosquitoes by physical, chemical or biologic means, but with the aid of screening and quinin it would soon be possible to stamp out malaria even with persistence of the mosquitoes if it were not for the prejudice, the hatred of innovations among the authorities and the apathy and ignorance of the population, the obstacles and deficiencies of the rural public health service, the indifference of employers and the indolence of the local authorities. Preventive and curative quinin treatment is the natural base for the antimalaria campaign, he reiterates. This will cure and keep well the people in the endemic zones while the country is being drained and rendered fit for colonization—the ideal aim.

131. Vertebral and Paravertebral Hepatic Dulness on the Left Side.—Grocco calls attention to the extension on the left side of the area of hepatic dulness when the liver is enlarged. He has found the upper limit of the dulness extend for 7, 8, 10 or even 12 cm. beyond the median line in the back—a most instructive sign in some cases.

134. Present Status of Specific Treatment of Tuberculosis.—Maragliano comments on the increasing complexity of the morbid conditions as the tuberculosis progresses, other factors coming into play, secondary infection and the toxic products from disintegration of cells and bacteria, so that the primary influence of the tubercle bacilli is gradually overshadowed by the crowd of other pathogenic elements which in time dominate the situation. There is a vast difference, he reiterates, between tuberculosis and phthisis; the latter is a complex of dystrophic changes set in motion by the tubercle bacillus but having long outgrown its influence. Specific treatment of tuberculosis acts only on the primal tubercle bacilli and their toxins, and it is absurd to expect it to combat the other factors. If physicians will bear this in mind they will appreciate better the limitations of tuberculin treatment and not be disappointed when it proves impotent against the subsidiary but gradually overmastering factors.

135. Chronic Thyroid Insufficiency.—Marchiafava reports the case-histories of two men and a woman, between the ages of 44 and 55, who suffered for months or years from severe

neuromuscular prostration, apathy and somnolency; they were incapacitated for business by dropping to sleep at any moment and snoring. The appetite and digestion remained normal but the face was swollen, although not edematous, and there was a tendency to obesity and chilliness; the skin was dry, the pulse weak and slow but regular, the gait uncertain and languid, the voice hoarse. The syndrome suggested possibly chronic uremic poisoning, but there was no headache or visual disturbance. He attributed the trouble to thyroid insufficiency and his diagnosis was confirmed by the prompt recovery under thyroid treatment. His records include two other cases of chronic hypothyroidism in which similar benefit was rapidly realized under organotherapy. In about two weeks all the patients had regained their strength and normal poise and resumed an active life. One patient had taken previously a long course of iodid as a preventive of dreaded arteriosclerosis, and this might have been responsible for the defective functioning of the thyroid; in the second case there had been a preceding attack of Malta fever which might have been the causal factor. The urine findings suggested chronic nephritis, but all these signs disappeared under thyroid treatment. The somnolency was the symptom that brought the patients to the physician, and the cure under thyroid treatment throws possibly some light on the mechanism of sleep. He warns that albumin and tube-casts in the urine must not always be ascribed to nephritis; his cases show that they may be the result of secondary changes in the kidneys from defective thyroid functioning and will subside as the latter is regulated.

136. Serotherapy of Syphilis.—Marinesco injected a few syphilitics with serum from other syphilitics who had been injected with salvarsan, but the results were disappointing.

138. Acetonuria in Diabetics.—The various types of diabetic acetonuria are here reviewed by von Noorden and the dietetic measures involved are discussed in detail.

140. Abdominal Sign of Intestinal Metastasis of Pylorus Cancer.—Tansini has noticed that with cancer at the pylorus the abdomen is sunken in, but that after metastasis has developed in the intestines the abdomen is no longer sunken in but has a normal aspect. In three such cases there was nothing to indicate the involvement of the intestines except the lack of this characteristic retraction of the abdominal walls which he has found constant with cancer at the pylorus. He was not positive enough in regard to the new sign to refrain from an operation on the pyloric cancer on that account alone. But in each instance the laparotomy revealed inoperable metastasis in the intestines.

141. Phloridzin Glycosuria and Insufficiency of the Liver.—Teissier presents evidence to show that the glycosuria which follows injection of phloridzin may be retarded or prevented by defective liver functioning even when the kidneys are intact. With diseased kidneys the liver may influence in part the reaction to the phloridzin test. The experiences with it show that the biologic phenomena are not simple but complex reactions, and that in pathology as in biology the functional synergy of the organs must be taken into account.

Hospitalstidende, Copenhagen

January 4, LIV, No. 1, pp. 1-24

142 *Direct Broncho-Esophagoscopy for Removal of Foreign Bodies. (Fjernelse af fremmede Legemer fra Lungen og Spiserøret.) E. Schmiegelow.

January 11, No. 2, pp. 25-48

143 Changes in the Secretion of the Cervix Uteri During Pregnancy. (Forandringer i Cervikalsekretet ved Svangerskab.) O. Jersild.

January 18, No. 3, pp. 49-72

144 *Salvarsan in Syphilis. C. Rasch.

145 Tenosynovitis in the Forearm. (Tenosynovitis i Iste Kulisse pa Antibrachium, ledsaget af Traktionsperiostitis paa Processus styloideus radii.) K. Poulsen.

January 25, No. 4, pp. 73-104

146 *Inherited Predisposition to Tuberculosis. N. J. Strandgaard.

147 The Air in Pneumothorax. (Undersøgelser over Pneumothorax.) F. Tobiesen.

142. Foreign Bodies in Lungs and Esophagus.—Schmiegelow describes nine cases in which under direct visual inspection it was possible to remove the foreign body promptly and without injury.

144. **Salvarsan.**—Rasch remarks in this discussion of his experience with salvarsan, that this drug will always stand as a milestone in the progress of medicine on account of the way in which it was introduced, instead of the manufacturing chemists casting their uncritically produced and untried remedies into physicians' hands. He adds that it is not every day that we encounter a remedy which seems to cure two diseases, relapsing fever and fowl spirillosis, while it has a powerful curative influence on two others, syphilis and frambesia, and is proving useful also in a fifth, quinin-proof malaria. He advocates giving salvarsan in syphilis in conjunction with mercury or in combination with other old antisyphilitic measures—such as antimony and potassium tartrate or chromium and gold compounds—which have recently been shown to have a destructive action on trypanosomes. A rational revival and combination of remedies has often given better results in Rasch's practice than a correspondingly large dose of a single drug, while the toxic action was much less. Ehrlich has also stated that his research on chemotherapy has confirmed the probable advantages of this method.

146. **Inherited Predisposition to Tuberculosis.**—Strandgaard has been studying conditions in eighty-nine families in which he has known of 197 cases of tuberculosis, and tabulates the details for comparison, listing the stage and extent of the pulmonary affection, the age at which it developed, the special symptoms and complications and the course. In twenty-three of the cases a parent and child were affected, in the others, brothers and sisters only. He does not draw any general conclusions.

Ugeskrift for Læger, Copenhagen

January 26, LXXIII, No. 4, pp. 105-140

148 *Recurring Mastoiditis. S. V. W. Jantzen.

149 *Unusual Causes for Restlessness in Infants. (Et Par vigtige Affektioener hos spæde Børn.) F. Jørgensen.

148. **Recurring Mastoiditis.**—Jantzen tabulates the details of twenty-one cases of recurring mastoiditis in which a second operation was required; the total mastoid operations at Mygind's clinic during the period 1905 to date was 225. Only one of the patients with recurrence was an adult. The interval ranged from a few months to five years. He discusses the causes for recurrence and the means to avoid and treat it, reviewing considerable literature on the subject.

149. **Unusual Causes for Restlessness in Infants.**—Jørgensen discusses adhesive balanopostitis and fissure of the anus as liable to make infants fret and cry when none of the usual causes for restlessness can be discovered. He thinks that fissure of the anus is much more common than is generally recognized.

Correction.—Serodiagnosis of Syphilis.—The temperature specified in the sixteenth line of abstract 95, page 547, Feb. 18, 1911, should have been 55 C. instead of 65 C., as printed.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

MODERN TREATMENT. The Management of Disease with Medicinal and Non-Medicinal Remedies. In Contributions by American and Foreign Authorities. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia. Assisted by H. R. M. Landis, M.D., Director of the Clinical Department of the Phipps Institute (University of Pennsylvania). In Two Volumes. Vol. II. Cloth. Price, \$6 net. Pp. 900, with 88 illustrations. Philadelphia: Lea & Febiger (1911).

MODERN DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN. A Treatise on the Medical and Surgical Diseases of Infancy and Childhood, with Especial Emphasis on Clinical Diagnosis and Modern Therapeutics. For Practitioners and Students of Medicine. By Herman B. Sheffield, M.D. (Co-Author of "Practical Pediatrics"), Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital. Cloth. Price, \$4.50. Pp. 619, with illustrations. Philadelphia: F. A. Davis Co., 1911.

TRANSACTIONS OF THE FOURTH INTERNATIONAL SANITARY CONFERENCE OF THE AMERICAN REPUBLICS. Held in San José, Costa Rica, Dec. 25, 1909, to Jan. 3, 1910. Cloth. Pp. 209, with illustrations. Published and Distributed Under the Auspices of the Pan-American Union, John Barrett, Director-General, Washington, D. C., 1910.

MEMORANDA ON POISONS. By Thomas Hawkes Tanner, M.D., F.L.S. Eleventh Edition. By Henry Leffmann, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania. Cloth. Price, 75 cents net. Pp. 167. Philadelphia: P. Blakiston's Son & Co., 1911.

PRACTICAL DIETETICS WITH REFERENCE TO DIET IN DISEASE. By Alida Frances Pattee, Graduate Department of Household Arts, State Normal School, Farmington, Mass. Sixth Edition. Cloth. Price, \$1.50. Pp. 475. Mount Vernon, N. Y.: A. F. Pattee, 1910.

SOME PLAIN FACTS ABOUT CONSUMPTION OR PULMONARY TUBERCULOSIS. Prepared by F. G. Stroud, M.D. Paper. Free on Receipt of Stamp. Pp. 7. Moorestown, Burlington County, N. J.: Board of Health, Chester Township (1911).

THE SHIP-SURGEON'S HANDBOOK. By A. Vavasour Elder, M.R.C.S., L.R.C.P., Surgeon, White Star Line. Second Edition. Cloth. Price, 5 shillings net. Pp. 387. London: Baillière, Tindall and Cox, 1911.

REPORT OF COMMISSION ON OCCUPATIONAL DISEASES TO HIS EXCELLENCY GOVERNOR CHARLES S. DENEN. January, 1911. Paper. Pp. 219, with illustrations. C. R. Henderson, Secretary, University of Chicago.

PLASTIC AND COSMETIC SURGERY. By Frederick Strange Kelle, M.D., Fellow of New York Academy of Medicine. Cloth. Price, \$5. Pp. 511, with 522 illustrations. New York: D. Appleton & Co., 1911.

WHO'S WHO. 1911. [BRITISH.] An Annual Biographic Dictionary. Sixty-Third Year of Issue. Cloth. Price, \$2.50 net. Pp. 2246. New York: The Macmillan Co., 1911.

TRUTHS: TALKS WITH A BOY CONCERNING HIMSELF. By E. B. Lowry, M.D., Author of "Confidences." Cloth. Price, 50 cents. Pp. 95. Chicago: Forbes & Co., 1911.

ANNUAL REPORT OF THE ASYLUM FOR CHRONIC INSANE, MILWAUKEE COUNTY. For the Year Ending Sept. 30, 1910. Paper. Pp. 55. Wm. F. Bentler, M.D., Supt.

New Patents

Recent patents of interest to physicians.

- 965555. Dispensing device for soda fountains. William H. Becker and C. W. Steed, St. Louis.
- 965556. Abdominal bandage. Josef Beltermanu, Mannheim, Germany.
- 965273 and 965557. Making cuprammonium solution. Henry Bernstein, Philadelphia.
- 965276. Pocket sputum cup. John A. Brooke, Wilkes-Barre, Pa.
- 965564. Sanitary cover for flesh-contact implements. George H. Coates, Worcester, Mass.
- 965165. Shaker bottle. John L. Dunuock, Baltimore.
- 965174. Stethoscope. Nathan Fuchs, Chicago.
- 965704. Valve for carbonated liquid receptacles. George Goldberg, Amsterdam, Netherlands.
- 965630 and 965631. Briquet for making oxygen. George F. Jaubert, Paris, France.
- 965393. Einar H. Meyer and J. M. A. Stillesen, Niagara Falls, Ontario, Canada.
- 965533. X-ray screen or shield. Charles H. Meyers, Buffalo, N. Y.
- 965219. Quick-threading surgical needles. Martinus J. C. Nyborg, Minneapolis, Minn.
- 965257. Antiseptic mouthpiece cover. William H. Waldron, San Francisco, Cal., and L. R. Krumm, Columbus, Ohio.
- 966221. Truss. Walter Lange, Zwickau, Germany.
- 966225. Artificial leg. James A. Long, Fair Mount, Ga.
- 966050. Spirometer. George W. Ramage, New York.
- 966136. Compound or emulsion and production of same. Julius Stockhausen, Crefeld, Germany.
- 965966. Formalin vaporizer. Jena J. Van Dandague, Montreal, Quebec, Canada.
- 966642 and 966643. Medicament and making the same. Albert D. Barr, Batesville, Ark.
- 966786. Producing medicaments. Albert D. Barr, Jersey City, N. J.
- 966787. Supporting belt or truss. Henry L. Benner, East Mauch Chunk, Pa.
- 966900. Disinfectant. George H. Garnet, Allentown, Pa.
- 966748. Combined stopper and connection for water-bottles. Jacob Honecker, Cleveland, Ohio.
- 967125. Syringe. John B. Huppert, Pittsburg.
- 966838. Antiseptic body germ protector. Herman Jaffee, Hoboken, N. J., and E. M. Dorstewitz, New York.
- 966840. Automatic mercury dropper. Ernest C. Ketchum, Boston.
- 967136. Hypodermic syringe. John E. Lee, Conshohocken, Pa.
- 966696. Method and apparatus for marking x-ray negatives. Walter H. Merrill, Washington, D. C.
- 966863. Abdominal supporter. Laura N. Saemann, Oak Park, Ill.
- 967081. Abdominal supporter. Samuel H. Sublett, Sr., Hatton, Ark.
- 966872. Pasteurizing apparatus. August Tiesse, Chicago.
- 967488. Making barium sulfite. Le Roy Baker, St. Louis.
- 967736. Suspensory bandage. Samuel D. Delp, South Bethlehem, Pa.
- 967638. Bed-pan. Daniel Hogan, Hoboken, N. J.
- 967533. Cushion for bed-pans. Amanda R. Logan, East Chelmsford, and M. A. L. Barelle, North Reading, Mass.
- 967805. Bone-saw. August Meyer, Oakland, Cal.
- 967547. Strap for surgical bandages, corsets, etc. Mary C. Ninde, Fort Wayne, Ind.
- 967840. Medicinal soaps. Walter Schoeller and W. Schrauth, Berlin, Germany.
- 967450. Combined mixer and sprinkler. Zalmon G. Sholes, New York.
- 967852. Dispensing container. Clarence E. Stubbs, Baltimore.
- 967584. Casein derivatives or compounds and making the same. Rudolf Tambach, Ludwigshafen-on-the-Rhine, Germany.
- 967269. Surgical appliance. Smith G. Tibbs, Akron, Ohio.
- 967688. Topical medicated pad. Charles P. L. Titherley, Formby, England.
- 967469. X-ray apparatus. Harry F. Waite, New York.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 10

CHICAGO, ILLINOIS

MARCH 11, 1911

CESAREAN SECTION, WITH SPECIAL REFERENCE TO THE TIME OF OPERATION AND ITS TECHNIC *

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One familiar with the history and progress of abdominal surgery must be impressed with the similarity in the development of ovariectomy and Cesarean section. The latter operation is much older than ovariectomy, but the indications for its application are less definite and positive, and it has been universally regarded as a final and desperate effort at delivery when other measures have been tried and have failed. Like ovariectomy in its early development, Cesarean section has been fostered under the care of a few operators, who have struggled on in their efforts despite the discouragement of a heavy mortality. That the Cesarean operation is so far behind ovariectomy and hysterectomy in professional favor and in general application when indicated is due for the greater part to the fact that the surgeon competent to do the operation rarely has access to the patient until she is exhausted, often infected, by futile efforts at instrumental delivery. With patients afflicted with ovarian and uterine tumors no other operation is considered prior to ovariectomy and hysterectomy, and the operations are eminently elective, instead of being, as too often obtains with the Cesarean section, operations of emergency.

The patients requiring delivery by abdominal hysterotomy who are so fortunate as to be confined in maternity hospitals, where every modern facility and surgical skill are at command, compose only a small proportion of the great number who meet the same issues of life and death amid the disadvantages of confinement in their own homes.

The late Dr. R. P. Harris, of Philadelphia, writing in 1889, reported that there had been 175 Cesarean operations in the United States with 110 deaths. He also states that from April, 1884, to February, 1885, six Cesarean sections were done in this country and all of the mothers and children died.¹ Lusk reports on high authority that in the lying-in hospital in Vienna during the nineteenth century up to 1880, not one woman had survived Cesarean section. On equally high authority, he reported that in Paris up to 1873 there had not been one successful Cesarean section in eighty years. I beg to follow this report of Lusk showing the results of the operation prior to the antiseptic era, and the report of Harris after the antiseptic era, but prior

to the perfection of aseptic methods and before the general adoption of Sanger's technic, with present-day results.

In Germany the operation has attained a high degree of perfection in the hands of Sanger, Leopold and Olshausen. The latter (Olshausen) has reported a series of sixty-five cases with a mortality of 4.6 per cent. Reynolds, of Boston, reports in 1907 thirty cases without a death. In all these cases the operation was primary; it was elective, and the patients had not been subjected to repeated examination and efforts at delivery. These results mark the standard that can be attained by early examination, hospital facilities and surgical skill.

Dr. Asa B. Davis, of the Lying-in Hospital in New York, reports (September, 1910) that in a service of 68,200 obstetrical cases at that hospital there were 256 Cesarean sections performed. The maternal mortality was 14.06 per cent.; the fetal mortality 20.08 per cent. Of these, seventy-eight operations were performed by Dr. Davis, with a maternal mortality of 16.67 per cent. Of these thirteen deaths, the report gives among causes of death the following: "prolonged labor, sepsis, suppression of urine; midwife in charge for twenty-four hours"; another "prolonged labor, sepsis before admission to hospital"; and "prolonged attempt at high forceps by private physician; general streptococcemia." Twelve of the sixty-seven women had had repeated Cesarean sections; one had undergone the operation three times and one five times. In some of these cases the operation was necessitated by multiple sarcoma of abdominal and pelvic viscera, or by carcinoma of cervix and vagina; and there were seven cases of eclampsia. A study of this report will convince one that if every reasonable advantage be utilized, if the operation be not delayed and if the patient is not infected beforehand, this operation can be done under proper hospital conditions, in uncomplicated cases, with a mortality as low as that of ovariectomy.

As with all abdominal operations, the splendid results of the present time have been made possible by the discovery and perfection of aseptic surgery. In 1876 Porro made the great contribution to the operation which has forever attached his name to the radical operation. To Cesarean section as previously performed he added hysterectomy. By this procedure both hemorrhage and sepsis were materially lessened. It gave a great impetus to the operation, and in labor complicated by uterine neoplasms will remain a standard and perfected operation. The greater number of the Cesarean operations done by me have been based on this indication, and consisted of the Porro operation with retroperitoneal treatment of the pedicle. It is an ideal operation under such conditions.

* Read before the Southern Surgical and Gynecological Association, at Nashville, Tenn., Dec. 14, 1910.

1. American System of Obstetrics, 1889, Philadelphia, Lea Bros. & Co.

In 1882 Säger made his epochal contribution to the technic of Cesarean section. Previous to this time, after incision of the uterus and delivery of fetus and placenta, the uterine walls were left to be approximated by the physiologic contraction of the uterus. Säger demonstrated the importance of suturing the uterine incision with deep sutures down to, but not including, the uterine mucosa, and adding a neat suturing of the peritoneum over the entire length of the incision. As a result of Säger's addition to the technic of the operation, and the simultaneous improvement in aseptic surgery, the operation was at once followed by unprecedented success and has attained its present high place as an operation of choice.

The operation as practiced by Säger consisted of the median abdominal incision midway of the abdomen; turning the uterus out of the abdomen before opening it; two or three sutures were placed at the upper angle of the abdominal incision and tied after the uterus was delivered to protect the subjacent peritoneum; a sheet of rubber was then placed beneath the uterus to protect the lower peritoneum; the cervix was constricted with rubber tubing to control hemorrhage; the uterus was incised through its anterior wall vertically; fetus and placenta delivered; the rubber tube removed as soon as uterine contraction obtained; the uterine sutures were of silk and were placed as already described; before any of the sutures were tied the uterine cavity was washed out with an antiseptic solution, and the uterine cervix dilated to insure drainage. The uterus was then returned to the abdomen, and the abdominal incision closed.

As in all abdominal operations, this operative procedure as devised by its author has been simplified with experience. It was soon discovered that the elastic tube placed around the cervix produced atony of the uterus and predisposed to post-partum hemorrhage; also that it frequently encircled the child's head and interfered with delivery. The constricting tube was first replaced by manual compression of the uterine arteries by an assistant. Later even this was found to be unnecessary, as the hemorrhage can be effectually controlled by the pressure of a gauze towel packed into the uterine incision while the sutures are being placed. The uterus need not be brought out through the abdominal incision, and all exposure and handling of the abdominal viscera should be avoided. At the beginning of the operation an assistant should place his hands flat on the abdominal wall, one on each side, hold the uterus steady, and keep the abdominal wall closely in apposition with the uterus. A double tenaculum at the upper angle of the uterine incision, another fixed in the lower angle, will give the operator perfect control of the uterus while incising and suturing that organ. The utmost care should be observed to protect the peritoneum from the amniotic fluid. Davis assures us that in no instance has he found it necessary to dilate the cervix to secure drainage. No application of any kind should be made to the uterine cavity after the fetus and placenta have been delivered. The suture material best adapted for the uterine incision is chromic catgut, No. 2. The after-treatment is the same as that of other abdominal operations.

The operation should be performed with the same deliberate care and expedition as are observed in other abdominal operations. There seems to be a general impression on the part of surgeons that exceptional rapidity bordering on haste should characterize the steps of the operation. There is no valid reason for this.

Davis makes the abdominal incision above the umbilicus, and the uterine incision just below the fundus of that organ. I do not believe that the site of the incision is of essential importance. The abdominal wall at the full term of pregnancy is thin and relaxes easily. As soon as the abdominal incision is made and the uterus exposed, long gauze pads wrung out of warm salt solution are placed within the abdomen to hold back the omentum and intestines and protect peritoneal surfaces while the uterus is being emptied and closed.

Unfortunately, in the majority of cases, the operator has no choice as to the time of election for the operation, the patient being usually in active and prolonged labor when he is called on to operate. When the patient is under observation in advance and choice of time for operation can be made, it is preferable to operate after labor has assuredly begun. To elect this time from the menstrual history is inaccurate and will not infrequently result in the delivery of a premature child. No dilatation of the cervix or preliminary vaginal operation, other than thorough cleansing of the vagina, should be done.

With the demonstrated results of Cesarean section, as now obtained, the scope of the operation must necessarily be widened and its application greatly extended. What is most needed at the present time (and this thought has inspired this paper), is an active interest on the part of all abdominal surgeons, and such a campaign of education as was successfully applied some years since in behalf of early operation in other conditions requiring prompt surgical intervention. It is established that the primary Cesarean operation in skilled hands has a mortality quite as low as uncomplicated ovariectomy and clean hysteromyomectomy. With repeated examinations, cervical dilatation and application of forceps, carried out with crude and desultory observance of aseptic precautions, the mortality of abdominal hysterotomy is unnecessarily increased. The cooperation of the surgeon and the general practitioner is necessary to correct this fatal error.

Fourth and Chestnut Streets.

THE MOBILIZATION OF JOINTS BY MEANS OF THE RUBBER BANDAGE

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The mobilization of joints is a common field of neglect. The patient with a stiff joint following fracture is often told that time alone will bring a restoration of the normal range of motion, which is in a degree true, but the patient so dismissed feels, and is, neglected, for much time can be saved for him by proper treatment. Not this alone, but many a brilliant success in fracture treatment is greatly overshadowed in the patient's estimation by the resultant stiffness following the removal of splints. In addition to the cases in which time alone usually successfully obtains the normal range of motion, is the group of immovable joints, and cases of limited range, which, if neglected, do not improve, and which, with the exception of those of bony ankylosis, exuberant callus or displaced fragments following fracture—cases of mechanical obstruction to be relieved alone by operation—brilliantly respond to proper treatment in various degrees.

The causes of the stiff joint following fracture, exclusive of the results of direct injury of the joint, are: edema, atrophy, shortening and loss of elasticity of muscles and the periarticular tissues; cicatricial contraction and fibrous changes, more common in suppurating open fractures, and traumatic arthritis. This stiffness of joints, as is well known, obtains not only in the structures directly involved but in the related joints of the extremity, due to a coincident sprain or to enforced quiet, as a part of the dressing; i. e., stiff knee after fracture of thigh; stiff elbow, wrist and fingers after fracture of arm.

TREATMENT

Massage, hot and cold baths, high dry heat, active motion, *less passive motion*, and the method of mobilization by means of the rubber bandage to be now described, and which is not intended to replace or minimize the importance of the first mentioned measures, constitute the treatment.

Gradual strong flexion and extension is obtained by the application of a rubber bandage of the ordinary 2½ inch variety, or of double weight for most of the dressings. The manner of the application is made in accordance with the indications and requirements of each case,

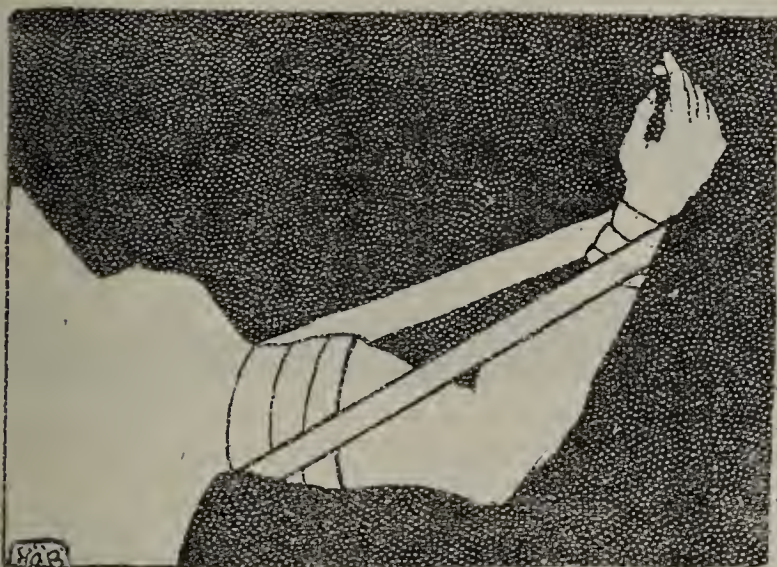


Fig. 1.—A method of securing flexion of the elbow-joint by means of a rubber bandage.

and is so made that the contraction of the bandage takes place in the line of the desired increase of motion; that is, in the line of normal movement.

The elastic contraction of the rubber bandage by its gradual, even, confidence-gaining quality, overcomes, first, the voluntary and spasmodic contraction of the guarding, protecting muscles and tires them out. Complete relaxation is so obtained, at which stage the contraction of the rubber bandage is exerted on the shortened, contracted structures and mechanically stretches them. By this means, at one sitting, a range of motion far greater than can be obtained by passive movement is realized, which is not followed by so great an irritative reaction and which is not so painful as effective passive movement. The patient's confidence in making greater active movements is also greatly increased by the demonstration of the degree obtainable with the rubber bandage, and his cooperation from now on is obtained.

A small amount of pain and discomfort is permissible during the treatment, the length of which is controlled by the patient's fortitude and disposition, the rule to be strictly adhered to being that the joint should not be tender on the following day. The first several applications are made every second day, after which they should be made daily.

Joints of false or fibrous ankylosis, in which there is no danger of making active a quiescent infection, should be broken up under anesthesia, the reformation of such ankylosis prevented, and the mobility increased by beginning on the second day following the forcible procedure, the application of the rubber bandage method.

TECHNIC IN SPECIFIC CASES

The Elbow-Joint.—For flexion: Secure the initial extremity of the rubber bandage without stretching by several circular turns around the forearm, just above the

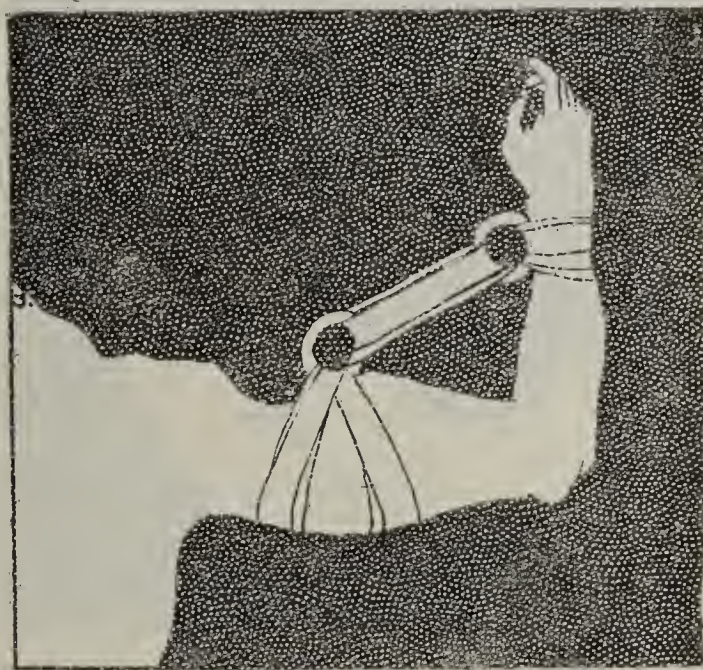


Fig. 2.—Another method of securing flexion of the elbow-joint; curtain rings are secured to the arm and wrist, through which the rubber bandage is drawn.

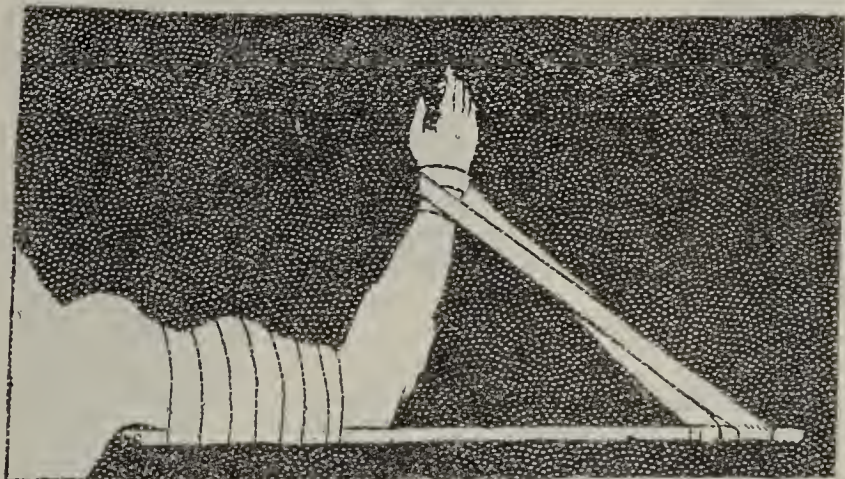


Fig. 3.—Method of securing extension of the elbow-joint. A straight splint is secured to the arm by means of a roller bandage and extension is made from the distal end of this by means of the rubber bandage encircling the wrist.

wrist; carry the stretched bandage to the upper end of the arm, making one unstretched circular turn around the limb, and then return with stretched bandage to the starting place above the wrist, where a single circular unstretched turn is made. Repeat the application between the wrist and arm several times with the bandage on the stretch, omitting the circular turns (Fig. 1). In certain cases it is of advantage to modify this dressing and those portions of the following in which the rubber bandage is secured by completely encircling the limb, by fastening by a gauze or muslin bandage at such places a large wooden curtain ring of the ordinary variety, the stretched rubber bandage being then carried through these rings instead of surrounding the limb, so insuring security and avoiding any possible constriction of the circulation (Fig. 2).

For extension: Fasten securely to the arm, by an ordinary gauze bandage, a firm, straight posterior splint, somewhat longer than the length of the complete upper extremity. Secure the initial extremity of the rubber bandage by several unstretched circular turns around the forearm just above the wrist; carry the stretched bandage to and around the free extremity of the posterior splint, and return with stretched bandage to the starting-place, repeating the application between forearm and splint a half a dozen times (Fig. 3).

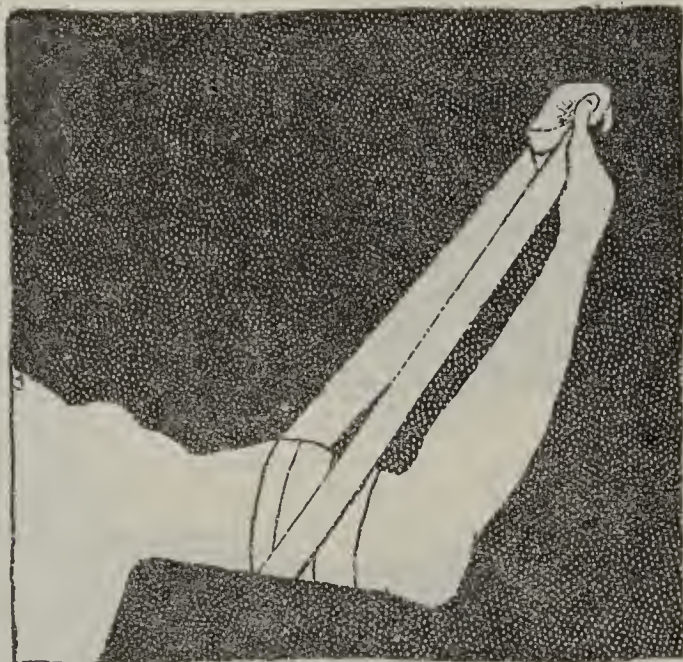


Fig. 4.—Method of securing extension of the wrist. The rubber bandage encircles the arm above the elbow and the hand around the palm.



Fig. 5.—Method of applying the rubber bandage to secure flexion of the knee-joint. The patient sits on a chair and the bandage encircles the ankle and the leg of the chair.

The Wrist.—For flexion: Flex the supinated forearm on the arm at a right angle. Secure the initial extremity of the rubber bandage by several unstretched turns transversely around the hand; carry the stretched bandage over the flexor surface of the forearm to the lower end of the arm and make a single unstretched turn around the arm just above the elbow. Return with the stretched bandage over the flexor surface of the arm to

the hand, and repeat the application between the hand and the arm several times.

For extension: Flex the pronated forearm on the arm at a right angle. The stretched bandage is carried over the extensor surface of the forearm; otherwise the application is the same as for flexion (Fig. 4).

For Finger and Thumb Joints.—For flexion: Completely cover and include the hand in a rubber bandage, the applications over the dorsum of the hand being made with unstretched bandage, and those over flexor surface or palmar surface being made with stretched bandage, securing by unstretched turns around the wrist. This may be combined with bandages for mobilization of the wrist-joint as described above.

For extension: Apply the stretched rubber bandage around the fingers and around the projecting extremity of a suitable posterior splint.

These hand bandages may be applied in Dupuytren's contraction, after operative extirpation of the contracted cirrhotic palmar fascia, and should also be instituted as early as possible after cases of suppurative tenosynovitis to prevent and break up the adhesions between the tendons and tendon sheaths.

The Knee-Joint.—For flexion: A strong chair of a height such that the feet of the seated patient hang free of the floor is necessary. These conditions can be met



Fig. 6.—Extension of the knee-joint. With the limb on a long posterior splint held by loose gauze bandages, the rubber bandage is made to enclose the knee-joint and the splint, thus producing traction.

by the ordinary chair for an adult being placed on and at the edge of a firm table, box or platform. The patient is seated in the chair and secured by a broad bandage carried around the patient's body and back of the chair. A surcingle supplies the purpose very well. Fix the initial extremity of the rubber roller by several unstretched circular turns around the leg just above the ankle; carry the stretched bandage to and around the lower end of the corresponding leg of the chair, and back again to the starting place. Repeat the applications with stretched bandage several times (Fig. 5).

For extension: The method by pulley and weight is usually superior to the application of rubber bandage with a posterior splint, and is always to be used in cases of extreme contraction. When the flexion is slight and approximates the complete extension, the rubber bandage method is of value. Application: With the limb on a long strong posterior splint held by loose gauze bandage, place the initial extremity of the rubber roller at the lower end of the thigh just above the knee-joint, and fix by making one or two circular turns over the thigh, and around and including the posterior splint. Repeat the turns a half dozen times with the rubber bandage on the stretch. Repeat the same rubber bandage at the upper end of the leg just below the knee (Fig. 6).

I wish to give full credit to Moinburg of the Bier Clinic, Berlin, for originating the idea of making use of the rubber bandage in the mobilization of joints.

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THE CONTROL OF PASTEURIZATION*

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AND

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The proper control of milk pasteurization is highly important at the present time—not only to the sanitarian and the public, but also to the conscientious milk-dealer.

Pasteurization as commonly practiced is the heating of milk to a temperature varying from 140 to 185 F. for varying periods of time. This heating may or may not effect the results intended, and the product consequently may or may not be free from the constituents which are intended to be removed or destroyed by the process.

Pasteurization has been lauded and condemned. The misunderstandings are based on the different meanings of the term with reference to the amount of heat applied, the time of exposure and the results accomplished. Practically, pasteurization is resorted to for two reasons: first, and very extensively, to enhance the keeping qualities of the milk. This is accomplished by destroying or materially reducing the number of acid-producing bacteria. Inasmuch as this kind of pasteurization is for commercial purposes the lowest temperature which will serve to accomplish the desired result is employed. Milk treated in this way is not usually rendered safe from a sanitary standpoint, but is nevertheless, often advertised and tendered to the public as germ-free and safe milk. The conception of pasteurization held by some men is that the process described above is intended when pasteurization is recommended as a means of procuring a safe milk-supply for large cities, or when pasteurization is accepted in lieu of testing cows for tuberculosis or of instituting adequate inspection of dairies for contagious diseases.

Secondly, pasteurization is resorted to as a means of securing a safe milk-supply that could not otherwise be procured in large enough quantity to supply our rapidly increasing urban populations. In this case the pasteurization must be controlled and cannot be carried out in the manner ordinarily practiced in a purely commercial way for the simple purpose of enhancing the keeping qualities of the product.

Municipal authorities are becoming more and more active in safeguarding of cities against frequently contagious and infectious diseases, and in this work have frequently traced such infections to the milk-supply.

The need of safeguarding milk-supplies is becoming more and more imperative by reason of the relatively low price of milk and milk products, which has compelled the farmer to practice intensive dairying in order to make the business at all profitable. This has reacted on the dairy cows. The animals have been kept with the prime object of minimizing loss of energy. Exercise in the open air has been sparingly allowed. In housing the proper means of ventilation and lighting have often been disregarded. With these essential conditions neglected the resistant forces of the overworked dairy cows have been materially lowered, and a field has been prepared for the spread of tuberculous infection.

The effort thus far made to eradicate tuberculosis in cattle has served to demonstrate very clearly that for

the present at least the killing and disposing of all tuberculous animals is impractical. Compensation by the state for animals condemned and destroyed is in many sections impossible on account of the magnitude of the valuations involved. The segregation of the animals according to the Bang system necessitates the pasteurization of the milk, if it is to be used. This pasteurization, in order to be effective against the spread of tuberculosis, must be properly carried out.

Our efforts to inspect the dairy farms supplying our large cities, for infectious diseases, such as typhoid fever, scarlet fever, etc., are at present rendered ineffective by the concerted opposition of the dairymen, physicians in charge of the cases, and health officers residing in the rural communities.

It is certain that this factor of human contagion cannot be controlled in Chicago without increasing the present force of inspectors manifold. From a medical standpoint, it will always be difficult or impossible to recognize the prodromal stage of measles, incipient tuberculosis, abortive cases of scarlet fever, mild non-exudative cases of diphtheria, and especially the so-called typhoid carriers.

The only practical way to eliminate the spread of contagious diseases under present conditions seems to be the proper pasteurization of the milk; and here again improper pasteurization would serve merely to foster a false sense of security. If the public is to be safeguarded, it must be adequately safeguarded, and this means that pasteurization practiced for the purpose of destroying the disease-producing bacteria must be subject to control by health authorities.

In taking up the subject of control of pasteurization, due consideration should be given to the various kinds of standards which may be made use of. These for the purposes of this paper will be classified under the following three headings: (1) chemical standards; (2) physical standards, and (3) bacterial standards.

CHEMICAL STANDARDS

Chemical standards have been suggested from time to time for control of the pasteurized product, but in practice they have not proved satisfactory. It is a well-known fact that milk heated above 176 F. fails to show the blue color when the Stork test for enzymes is applied. Our investigations have shown that the results obtained by this reaction are not very uniform and are dependent on a number of factors, including primarily the degree of temperature, and, to a certain extent, the time of exposure. Pjaden, working in the Kaiserliche Gesundheitamt, found that the amount of peroxidases on which this reaction depends varied considerably in the milk obtained from different breeds of cows. Finally, it is of great importance to recognize that certain bacterial products developing in consequence of bacterial multiplication in pasteurized milk have the property of transferring oxygen, and hence may be classed with the peroxidases. The other reactions for peroxidases, such as the guaiac test and the aloin test, are subject to the same influences and errors as the Stork reaction. Practically, then, the Stork test, or any test depending on the recognition of the peroxidases in the milk, is valuable only in determining that the milk has been recently heated above 176 F. It would of course also serve to detect all forms of boiled or sterilized milk.

The tendency at the present time, however, is to heat to as low a temperature as possible and only for a period such as will serve to kill all pathogenic organisms and a sufficient number of saprophytes, and at the same time

* Read at the annual meeting of the American Public Health Association, Milwaukee, Wis., September, 1910.

preserve the natural flavor and chemical composition of the milk. Exposure to heat above certain limits so alters the physical condition of milk that the cream does not rise naturally, but remains more or less completely emulsified. The public commonly judges the quality of milk by the amount of cream that has risen, especially in bottled milk, in which the cream line can be so clearly determined. Thus the demand to apply sufficient heat to destroy the peroxidases would necessitate the production of a pasteurized product of inferior commercial value, speaking of values as they are now appreciated. Such a demand would necessarily be harmful at the present time to the business interests of the dealer who is trying to place on the market a safe milk.

which 99 per cent. of the bacteria are killed when the required amount of heat is applied. After having determined either experimentally or theoretically the amount of heat required, it then becomes necessary to control this factor properly. This can be done most satisfactorily by equipping the pasteurizing machine with an apparatus regulating automatically the supply of heat or steam, so as to produce the required temperature of the outflow of the pasteurized product. Furthermore, a recording apparatus should be installed, to record during operation the temperature of the pasteurized product as it flows from the heater. The thermometer of this recording apparatus must be kept merged in the milk in such a way that it is not exposed

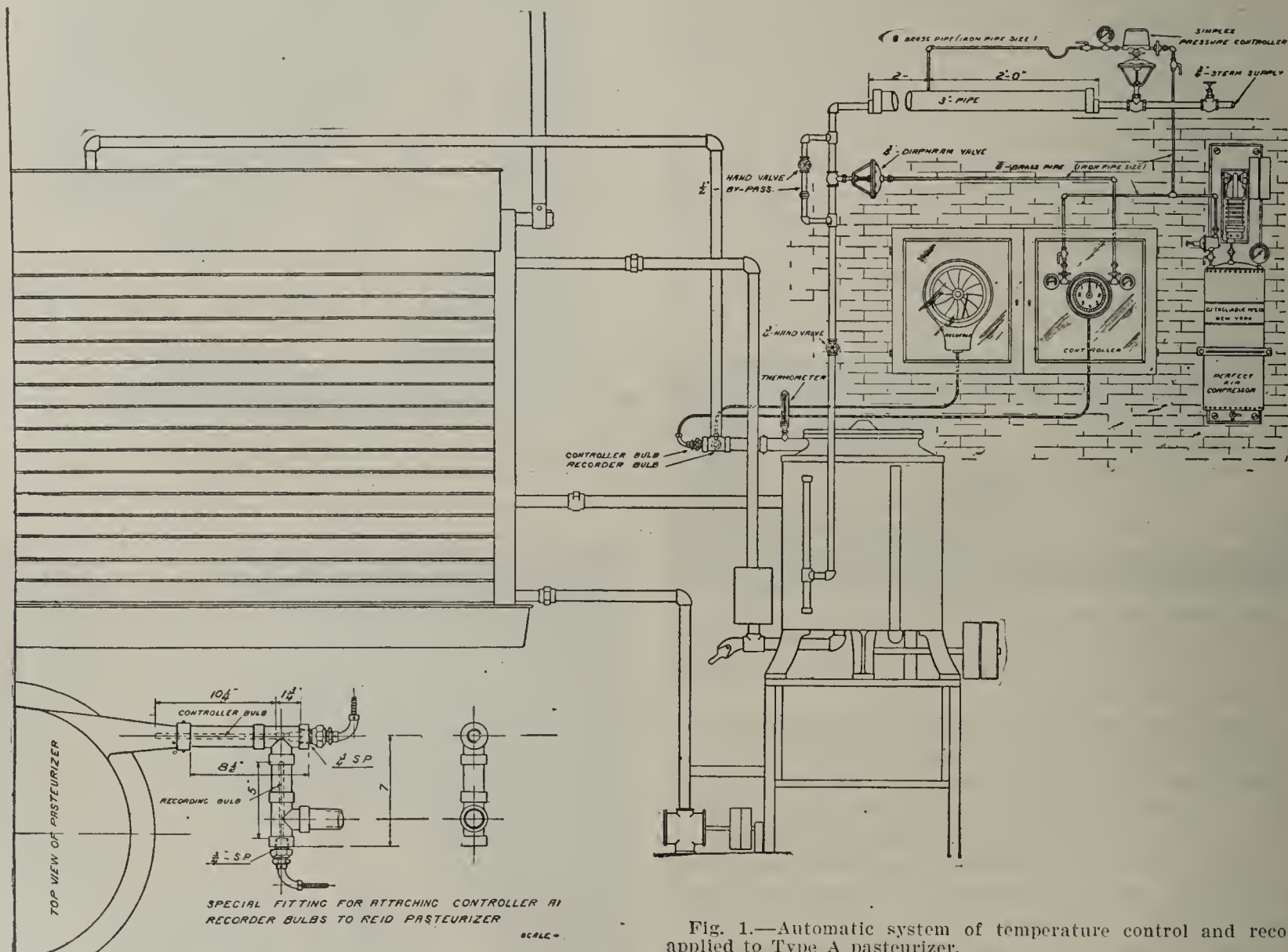


Fig. 1.—Automatic system of temperature control and recorder applied to Type A pasteurizer.

PHYSICAL STANDARDS

Physical standards, such as the degree of temperature employed and the time of exposure are most valuable in properly controlling pasteurization. In the case of continuous or so-called flash pasteurization, the degree of heat to be applied should be made to conform to certain minimum theoretical temperature standards plus such additional heat as may be required to kill about 99 per cent. of the bacteria in the raw product, both of which requirements will be discussed later. We have found that the time of exposure varies so much and is so indefinite of determination in the different types of flash machines, that it is practically impossible to prescribe the required amount of heat for a given type without determining this experimentally. The pasteurizer so operated should be equipped with a feed-pipe, which is so constructed that the pasteurizer cannot be fed in excess of its normal working capacity; that is, in excess of the working capacity of the machine at

to escaping steam or any other sources of heat than the heated milk. The records of the recording thermometer are made in a closed chamber, which may be kept under lock and key in the control of the sanitary officer or superintendent of the establishment, as the conditions may require. Daily temperature records show more accurately the lesser degrees of fluctuation, while weekly records are more convenient in those cases in which it is necessary to keep the records under lock and key in control of the sanitary officer. Temperature records kept in this manner indicate to the sanitarian the degree of efficiency, and to the operator of the plant are a valuable means of obtaining more perfect and uniform pasteurization. Commercially, this means less sour milk and less complaint from dissatisfied customers.

Whenever a holding device is employed whereby the milk is held at the temperature of exposure for a longer period of time, the control by graphic records becomes

somewhat more difficult. The mechanism of the pasteurizer, or rather pasteurizing system, is more complex and of the two important elements, namely, the temperature and the time of exposure, the time of exposure is relatively difficult to control.

The temperature may be controlled by an automatic regulator and recording apparatus, as indicated for continuous pasteurization. The time of exposure, however, may be changed by changing the mechanism of the machine. Such changes can readily be detected by an inspector on the ground, but cannot be indicated by any simple graphic record, although practically such a recording apparatus could probably be constructed. Diagrams showing the construction of satisfactory temperature-regulating and recording devices are herewith appended.

a temperature of 71 C. or 160 F. for one minute is sufficient to kill the tubercle bacillus in milk.

For holding devices the heat requirements determined experimentally by Rosenau should guide us in determining the required time and temperature. Rosenau concluded from his experiments that tubercle bacilli and other pathogenic bacteria in milk lose their infective properties when heated to 60 C. (or 140 F.) and maintained at that temperature for twenty minutes, or to 65 C. (or 149 F.) for a shorter period of time.

The minimum temperature requirements usually set are, therefore, for the continuous type of pasteurizer, 160 F. for one minute; for the machine equipped with a holding device, 140 F. for twenty minutes.

The percentage reduction standard usually adopted is a 99 per cent. reduction in the bacterial content of

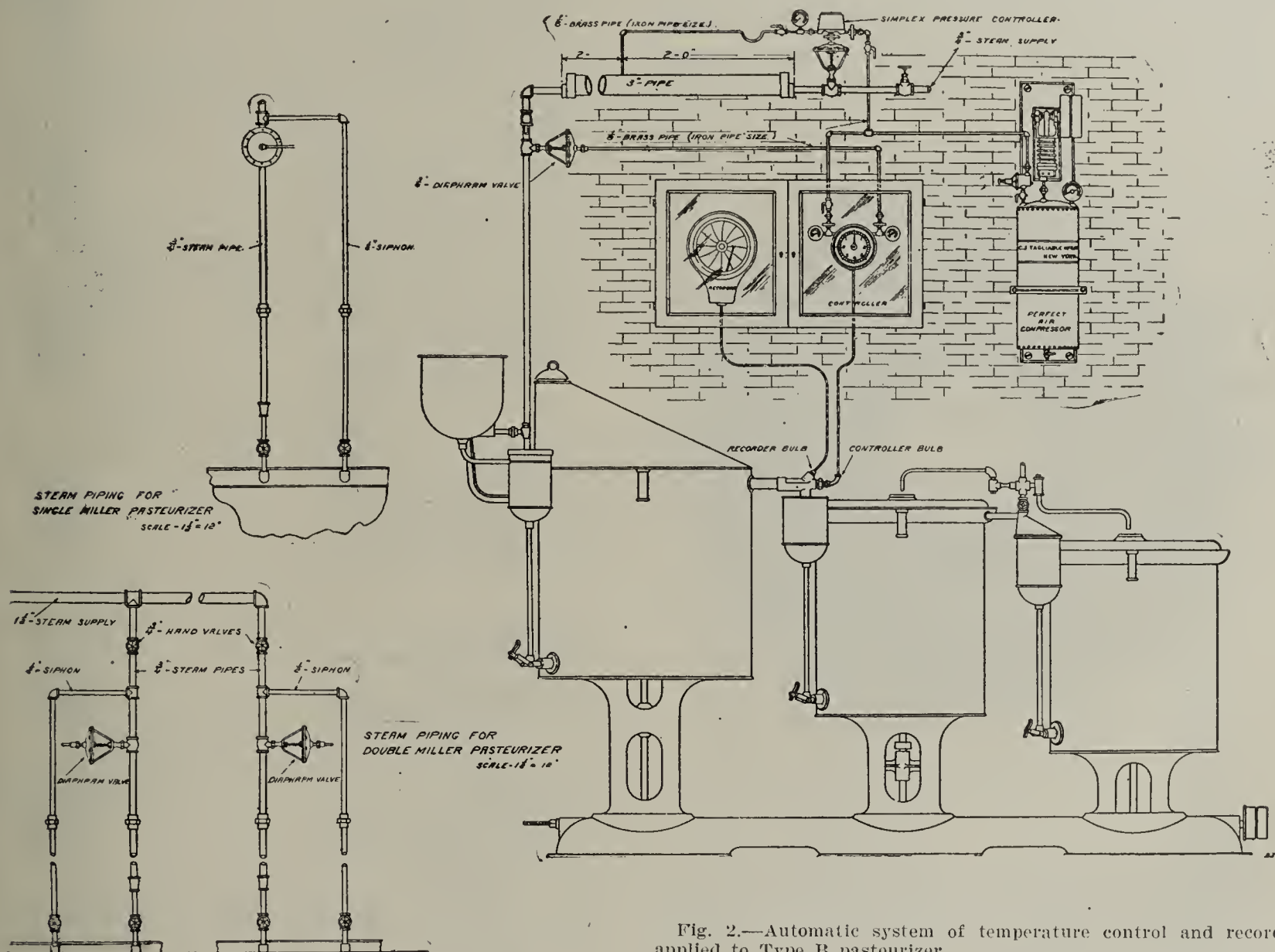


Fig. 2.—Automatic system of temperature control and recorder applied to Type B pasteurizer.

BACTERIAL STANDARDS

Bacterial standards should be threefold: a minimum temperature requirement, a percentage bacterial reduction standard, and a maximum permissible bacterial count.

Temperature standards should be determined by the thermal death-points, so far as we have definite knowledge of them, of the ordinary pathogenic bacteria conveyable in milk. A safe guide in the case of flash pasteurization is the degree of heat and time required to kill the tubercle bacillus, since it is the most difficult of the ordinary pathogenic micro-organisms to destroy, and inasmuch as one cannot hope to destroy spores with pasteurization temperatures. For this type of pasteurization, therefore, we should be guided by the results of Russell and Hastings, who determined that exposure to

the raw product. This, however, is not applied strictly, but in conjunction with a minimum allowable count of 100,000 per cubic centimeter, it being recognized that it is perfectly possible to produce a satisfactory product from initially good milk without an absolute 99 per cent. reduction, and on the other hand that a 99 per cent. reduction in an initially bad milk may still contain too many bacteria for safety. The strict application of the 99 per cent. standard places a premium on the use of raw milk having an initially high bacterial content. This is of course undesirable and is readily eliminated by application of the double standard (percentage reduction in conjunction with minimum allowable count).

During the past six months some seventy pasteurizing establishments have been subjected to bacterial investi-

gation in the city of Chicago. A few representative results of these tests are here included.¹

A study of the results of these seventy investigations reveals two interesting facts aside from the matter of temperature records. First, the percentage bacterial reduction under practical working conditions, as judged by the samples taken directly from the machine, is in general satisfactory for all five types of pasteurizers examined. Second, there is present in almost all establishments, irrespective of the type of machine used, a very constant and uniform element of recontamination. The significance of such recontamination may be considered from two angles, but depends in the last analysis on the extent to which it occurs. If the recontamination is extensive, it may mean practically the nullification of the work of pasteurization. In fact, instances have been noted in which the product of the plant contained more bacteria than the initial raw milk. On the other hand, if the recontamination is slight it may serve a very useful purpose, that is, it may be the means of

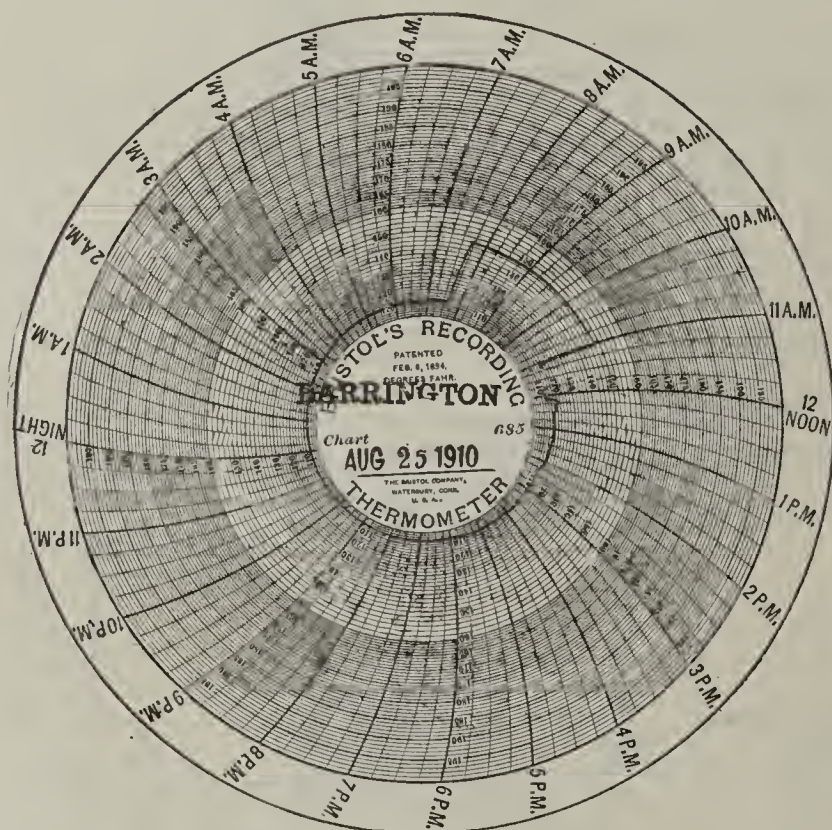


Fig. 3.—Graphic temperature record

introducing a few acid-forming bacteria, and thus improve rather than impair the quality of the product by causing it to sour naturally.²

If the bacterial count is sufficiently low to indicate a reasonable degree of safety from the standpoint of other bacteria, the reinoculation with acid-producers is of distinct advantage, inasmuch as it refutes the objection commonly raised that pasteurized milk putrefies when it is kept too long.

As a matter of fact, it is probably impossible in the control of pasteurization on a large scale to eliminate entirely the element of recontamination. Particularly

TABLE 1.—BACTERIOLOGIC INVESTIGATIONS OF PASTEURIZING PLANTS IN CHICAGO, JANUARY TO JULY, 1910

PLANT 1.—TYPE A MACHINE—CONTINUOUS *		
June—Temp., 160° F.; cooled, 45° F.		
Serial No.		Bacterial Count.
1376	Raw	17,000,000
1377	Pasteurized 160° F.....	8,700
1378	From cooler 45° F.....	55,000
1381	Bottled	120,000
PLANT 6.—TYPE D MACHINE—CONTINUOUS †.....		
August—Temp., 165° F.; cooled, 48° F.		
Serial No.		Bacterial Count.
2860	Raw	650,000
2861	Pasteurized from machine 165° F..	4,500
2862	Cooler 48° F.....	7,600
2863	Bottle filler	127,000
2864	Bottle uncapped	108,000
2865	Bottle capped	66,000
PLANT 7.—TYPE B MACHINE—CONTINUOUS ‡		
April—Temp., 160° F.; cooled, 54° F.		
Serial No.		Bacterial Count.
979	Raw	69,000
980	Pasteurized 160° F.....	2,000
981	Cooler 54° F.....	14,000
982	Bottle uncapped	16,000
983	Bottle capped	14,000
PLANT 11.—TYPE E MACHINE—HELD-TIME, 10 MINUTES §		
March—Temp., 150° F.; cooled, 60° F.		
Serial No.		Bacterial Count.
570	Raw	50,000
571	Pasteurized 150° F.....	4,500
572	Pasteurized, held 10 minutes.....	2,500
573	Pasteurized bottle filler.....	3,200
574	Pasteurized	8,500
PLANT 19.—TYPE E MACHINE—HELD 20 MINUTES		
March—Temp., 147° F.; cooled, 60° F.		
Serial No.		Bacterial Count.
803	Raw	5,000,000
806	Held in can 20 minutes.....	22,000
807	Cooler	36,000
808	Bottle uncapped	77,600
809	Bottle capped	84,000
PLANT 21.—TYPE F MACHINE—CONTINUOUS ||		
March—Temp., 150° F.; cooled, 45° F.		
Serial No.		Bacterial Count.
734	Raw	450,000
735	Pasteurized	7,000
737	Cooler	10,000
738	Bottler	10,500
739	Bottle uncapped	8,600
740	Bottle capped	50,000
PLANT 21		
May—Temp., 150° F.		
Serial No.		Bacterial Count.
1240	Raw	1,900,000
1241	Pasteurized 150° F.....	8,000
1242	Cooler	9,000
1243	Bottle uncapped	9,300
1244	Bottle capped	16,000
PLANT 32.—TYPE D MACHINE—CONTINUOUS		
May—Temp., 162° F.; cooled, 42° F.		
Serial No.		Bacterial Count.
1139	Raw	1,500,000
1140	Pasteurized 162° F.....	2,200
1141	Cooler 42° F.....	1,500
1142	Bottler	2,000
1143	Can	8,500
PLANT 35.—TYPE B MACHINE—CONTINUOUS		
January—Temp., 164° F.; cooled, 50° F.		
Serial No.		Bacterial Count.
98	Raw	701,000
99	Pasteurized	2,300
100	From cooler	6,000
101	Bottled and capped	10,000
PLANT 51.—TYPE E MACHINE—HELD 20 MINUTES		
August—Temp., 143° F.		
Serial No.		Bacterial Count.
2999	Raw	21,000,000
3000	Pasteurized 143°	56,000
3001	Held 20 minutes.....	less than 1,000
3003	Bottle filler	18,000
3004	Bottle uncapped	16,800
3005	Bottle capped	17,900

PASTEURIZING MACHINES

* Type A.—A jacketed cylinder. Milk flows in at bottom, upward through center of cylinder and out at top. The jacket is filled with live steam.

† Type D.—Milk flows straight down over a heated cone.

‡ Type B.—A hollow cylinder with metal core. Milk flows in at bottom, upward in a thin stream between the core and jacket, and out at top. Heat is applied from outer jacket.

§ Type E.—Milk flows down in a spiral groove over a heated cone.

|| Type F.—A long trough in which hollow revolving disks are set at right angles to axis of trough. Disks are filled with steam. Milk flows along trough and is retarded by the disks.

Holding device may be attached to any of these types.

1. For complete tables, see reprints.

2. The fact that commercially pasteurized milk sours in the same manner as raw milk may be explained by one of two assumptions: (1) that there has been recontamination with acid-forming bacteria; (2) that a "resistant minority" of lactic acid bacteria has survived the heat of pasteurization. Ayers reports that a small percentage of the lactic acid bacteria may resist a temperature as high as 150° F., and also that one strain of *Streptococcus lacticus* had a thermal death-point of 168° F. (Bull. 126, U. S. Dept. of Agric., Bureau of Animal Industry). We are inclined to believe that the element of recontamination is the more important of the two, judging from the fact that samples taken from the pasteurizing machine proper do not usually develop acidity, while bottled samples taken from the same plants at the same time almost invariably develop about the same acidity as the raw samples.

is this true when there are numerous small dealers to be covered who cannot afford the services of a bacteriologist. Nevertheless, it is obvious that this point should be closely studied and the effort made to reduce the recontamination to a minimum. It is of course a bacteriologic problem, and should be handled by a trained bacteriologist rather than by the ordinary milk inspector who has had little or no laboratory experience. That there is much recontamination still going on in Chicago is to be expected considering the fact that the work of pasteurization is at present in a transitional stage.

The control of conditions at the pasteurizing plant, however, is fairly simple compared to the control of the conditions under which pasteurized milk is marketed. In a large city, this feature of the work is necessarily difficult. It means the additional necessity of securing proper methods of cooling, of preventing the practice of selling kept-over samples, and of educating the entire milk-producing and distributing industry in the proper care of the pasteurized product. It involves the uprooting of old preexisting practices, which have been in vogue for years and are therefore extremely difficult to eradicate.

From a study of the accompanying monthly averages of the bacterial counts of raw milk, pasteurized milk from plants, and pasteurized market samples collected in Chicago, it appears that the general run of the pasteurized market samples is considerably higher than that of the samples from plants, and that in a general way the bacterial counts of market samples follow closely the temperature curve of the weather.

TABLE 2.—MONTHLY AVERAGES OF BACTERIAL COUNTS,
JANUARY TO JULY, 1910

	Total Examin- ations.	Average per c.c.	Per Cent. Below 500,000.
January, 1910.			
Pasteurizing plants	41	40,700	100
Pasteurized market	112	277,800	84
Raw	64	1,067,000	45
February, 1910.			
Pasteurizing plants	41	213,000	88
Pasteurized market	155	938,000	69
Raw	61	1,768,000	46
March, 1910.			
Pasteurizing plants	80	334,000	85
Pasteurized market	154	1,580,000	45
Raw	17	1,664,000	35
April, 1910.			
Pasteurizing plants	36	124,000	94
Pasteurized market	120	694,000	78
Raw	43	5,948,000	70
May, 1910.			
Pasteurizing plants	39	79,700	95
Pasteurized market	76	1,273,000	63
Raw	61	4,892,000	57
June, 1910.			
Pasteurizing plants	28	371,000	75
Pasteurized market	66	1,492,000	53
Raw	44	4,507,000	25
July, 1910.			
Pasteurizing plants	74	185,000	95
Pasteurized market	129	3,106,000	49
Raw	588	12,235,000	19

During the month of January, 1910, the average bacterial count of market samples was 277,800 per cubic centimeter; in February, 938,000 per cubic centimeter. In March, which was an unusually warm month for this time of the year, the average rose to 1,580,000 per cubic centimeter. With the cool weather of April it fell to 594,000, and in the warmer months of May and June reached 1,273,000 and 1,492,000 per cubic centimeter respectively, while in the heat of July the average of market pasteurized samples reached the excessive figure of 3,106,000.

Obviously the control of the marketing of pasteurized milk in Chicago is still unsatisfactory, although it

should be noted that the averages of this product are in every instance lower than those of the raw milk for the corresponding period, and that the percentage of samples, which may be considered reasonably safe (under 500,000 per c.c.) is much greater in the pasteurized series than in the raw.

The lesson to be drawn from the above figures is clearly that the temperature at which the product is delivered or sold must be subject to control, as well as the process of pasteurizing, if a safe market product is to be supplied to the consumer. This can probably best be attained by the passage of an ordinance establishing a maximum temperature, say 50 F., at which milk may be transported, sold or held for sale. Until such a measure is obtained in Chicago, it is manifest that there will continue to be undue multiplication of bacteria in the interval between pasteurization and delivery to the consumer, especially during the warmer months of the year. Such an ordinance has been advocated during the past few months—and is now scheduled to come up for passage during the fall of 1910.

A study of the more detailed monthly reports² from which the above-mentioned averages are derived is interesting in that it gives a better idea of the general run of the bacterial counts, and brings out more sharply the contrast between the raw and pasteurized series.

TABLE 5.—PASTEURIZED SAMPLES, FRESHLY BOTTLED
AND ONE DAY OLD, TAKEN FROM PLANTS

101	Freshly bottled	10,000
102	One day old	1,200,000
124	Freshly bottled	37,000
125	One day old	70,000
174	Freshly bottled	8,000
175	Freshly bottled	3,600
176	One day old	3,500
177	One day old	404,000
212	Freshly bottled	25,000
213	Freshly bottled	45,000
214	One day old	18,000
215	One day old	94,000
297	Freshly bottled	1,380,000
299	One day old	4,800,000
298	One day old	256,000
334	Freshly bottled	92,000
335	Freshly bottled	127,000
336	One day old	182,000
337	One day old	210,000
353	Freshly bottled	21,500
354	Freshly bottled	24,500
355	One day old	800,000
356	One day old	800,000
422	Freshly bottled	12,000
423	Freshly bottled	14,400
420	One day old	36,500
421	One day old	45,000
433	Freshly bottled	116,000
434	Freshly bottled	135,000
435	One day old	315,000
436	One day old	372,000
467	Freshly bottled	43,500
468	Freshly bottled	32,900
469	One day old	760,000
470	One day old	470,000

The detailed February report³ of pasteurized market samples presents another important lesson which must be applied to the control of the marketing of milk, that is, the fact that many of the high bacterial counts in market milk occur as a result of the common practice prevailing in milk depots and retail stores, of selling left-over milk from the previous day's supply. This factor no doubt accounts for more of the high counts in pasteurized market milk than appears in the tables, inasmuch as it is not always possible for the inspector to obtain accurate information as to the age of bottled samples. Table 5, showing the bacterial counts of freshly bottled samples and samples one day old taken from pasteurizing plants, illustrates the extent to which bacterial multiplication occurs under ordinary practical conditions in the pasteurizing establishment proper.

3. For this, see reprints.

To meet this phase of the problem an ordinance has been proposed for passage, which requires that the date of bottling or pasteurizing shall appear on every bottle of milk, both raw and pasteurized, offered for sale in the city of Chicago. This measure, if it successfully passes the city council, will make it possible for the consumer to determine at the time of purchase whether or not a fresh product is being vended.

By way of comparison, in order that the progress already made in the direction of a purer milk-supply, may not be lost sight of, Table 6 is submitted showing the condition of the raw milk during the month of July, 1910. These samples were taken entirely from railroad platforms and represent the condition of the milk as it arrives in the city during the warmer weather. The urgent need of protection of the milk-supply is well emphasized by these results, the average of which reaches the enormous figure of 12,548,000 per cubic centimeter.

RAW MILK TAKEN FROM RAILWAY PLATFORMS, JULY, 1910 *

Serial No.	Bacteria per c. c.	Serial No.	Bacteria per c. c.
2187.....	240,000	2302.....	150,000
2188.....	7,850,000	2303.....	335,000
2189.....	74,000,000	2304.....	385,000
2190.....	6,800,000	2305.....	810,000
2191.....	3,350,000	2306.....	67,000
2192.....	8,200,000	2350.....	100,000,000
2193.....	54,000,000	2351.....	720,000
2195.....	8,100,000	2352.....	100,000,000
2259.....	11,000,000	2353.....	685,000
2260.....	35,000,000	2354.....	8,800,000
2261.....	13,400,000	2355.....	3,350,000
2262.....	40,000,000	2356.....	2,400,000
2263.....	5,200,000	2357.....	500,000
2264.....	4,200,000	2358.....	38,000
2265.....	100,000,000	2359.....	3,100,000
2266.....	145,000	2385.....	3,300,000
2267.....	10,000	2386.....	11,300,000
2268.....	21,700,000	2387.....	20,000
2297.....	1,550,000	2388.....	295,000
2298.....	54,000,000	2389.....	38,000
2300.....	2,700,000	2390.....	300,000
2301.....	300,000	2391.....	24,400,000

183 Samples; 12,548,000 average bacteria per c. c.

* A portion only of this table is given here; for complete table see reprints.

At the present moment, it cannot be justly claimed that pasteurization in Chicago is under satisfactory control. In fact, little more can be done in this paper than to point out a few important lessons, which are to be drawn from the experiences of the last eighteen months. Results as shown by the some 4,000 bacterial examinations made during the present year are not ideal. Nevertheless, it is our belief that there has been a sufficiently great improvement over the raw product formerly sold in the city to justify the effort which has been expended.

Tumors in Cerebello-Pontine Angle.—T. Schwartz reports in the *St. Petersburg. med. Wochenschrift*, January 14, the details of two cases in which the syndrome was apparently identical and typical of a circumscribed tumor in the cerebello-pontine angle. One patient died before the contemplated operation; the tumor in the other case was successfully removed at two sittings. Borchardt, who performed the operation, has compiled twenty-eight cases from the literature of the last two years with 50 per cent. recoveries. Schwartz states that his experience confirms the necessity for refraining from lumbar puncture in a case of a suspected brain tumor; in his first case although only 10 c.c. of fluid were released, intolerable headache followed and death occurred forty hours later, while removal of the tumor was being considered. In the two cases reported the Wassermann reaction was positive in the blood but not in the cerebrospinal fluid; necropsy revealed nothing suspicious of syphilis in the fatal case. The severe headache had improved and also the pulse under mercury and iodid in this case, evidently from the influence of the medication on the complicating hydrocephalus revealed by necropsy.

INJURIES OF ABDOMINAL VISCERA WITHOUT EXTERNAL SIGNS OF VIOLENCE *

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Subcutaneous or non-penetrating injuries of the abdominal viscera are of such frequent occurrence, and their early diagnosis so important, that it is somewhat surprising that they are not recognized earlier in the majority of cases than is the rule at present. A study of the early symptomatology of these visceral lesions is therefore desirable.

I shall consider only those injuries resulting from external violence of such character as does not produce any surface trauma of the abdomen, or at least leaves only slight evidence of external injury. I shall also further limit my subject by excluding injuries of the urinary tract.

Penetrating wounds of the abdomen naturally point to and make easy, comparatively speaking, the diagnosis of associated visceral lesions. When the internal injury is not accompanied by external abdominal trauma the diagnosis is usually difficult. Damage to other parts of the body often diverts the attention of the physician and the patient and the less apparent early abdominal symptoms are overlooked. Unfortunately, there are no signs that are pathognomonic of visceral trauma. In some instances symptoms appear early, while in others manifestations of the injury are delayed for hours or even days.

Many cases have been reported in which, after having suffered gross injury to some of the abdominal viscera, the patient has worked on for hours at hard manual labor before succumbing. In other cases the severity of the symptoms is often out of proportion to the existing lesions. Intense shock, pain and excessive vomiting may accompany an injury of no moment. The following case illustrates this:

CASE 1.—A. H., aged 45, male, at 4 p. m., four hours after last meal, while prying up the root of a tree with a pick, wrenched himself when the root pulled loose. He did not fall and was not struck on the abdomen. Pain in the splenic region followed immediately. It was sharp and lancinating in character, increased rapidly and was accompanied by nausea and faintness. I saw him twenty minutes after the accident, sitting on the edge of his bed, bending over with his hands pressed against his stomach. His skin was pale, cold and clammy with perspiration; pulse was rapid but fairly strong; respiration short and shallow; temperature 97.6 F. He complained of intense pain in the left hypochondriac region. There was some tenderness in the same region, and marked rigidity of all the abdominal muscles, especially in the left upper quadrant. Peristalsis was quite active and he had vomited once. Leukocyte count was 6,950. All symptoms gradually subsided, rigidity disappearing first. By the next day he was feeling all right except for a little localized soreness.

Cases have been reported in which mistaken diagnoses, based on alarming symptoms, have led to unnecessary operations. Again, the resultant injury often bears no relation to the degree of violence that produced it. Severe visceral lesions may follow slight accidents, and *vice versa*. For these reasons any symptoms, no matter how slight, referable to the abdomen, should be given due weight in any case in which the patient has been subjected to external violence. In no other class of cases is an early diagnosis so necessary. In most instances it

* Read in the Section on Surgery of the American Medical Association, at the Sixty-First Annual Session, at St. Louis, June, 1910.

* For lack of space, an extensive table of cases is omitted from THE JOURNAL. It appears in the Transactions of the Section and in the author's reprints.

is life-saving. A delayed diagnosis nearly always means a fatal termination.

In discussing the subject I wish to consider the different elements wholly from the standpoint of their relation to the question of diagnosis, and shall take up:

1. The nature of the violence as a causative factor in the production of the injury.
2. The character and extent of the injury.
3. The symptomatology and diagnosis.
4. Deductions from a synopsis of cases collected from the literature.

As to the nature of the violence: Deaver's classification of the forces which cause injuries to the abdominal viscera as compressive, percussive and concussive, is sufficient. Each variety of violence tends toward certain forms of trauma. Therefore it is most important to ascertain, as definitely as possible, the exact details of the accident. How did the accident occur? Was the injured one's part in the accident active or passive? Was he struck by a rapidly or slowly moving, a large or a small, a hard or a soft object? Was the force great or slight? Was he crushed or run over? Did he fall from a greater or less height, or was he thrown some distance? What part of the body received the impact or the brunt of the violence?

Compressive or crushing violence, according to the way in which it is expended, may bruise, tear or rupture both the hollow and the solid viscera. When the violence is in the nature of a crushing force, a steady direct compression, the solid viscera can be crushed or torn, and the hollow ones can be torn, bruised or have their blood-supply damaged.

Compression applied over the abdomen in a progressive manner, as when the body is rolled in a narrow space between two objects, or run over by a heavy-tired automobile, may burst a loop of intestine. The solid or hollow organs may be torn loose from their supports in the same way. These injuries are possible also when the compression is produced by the forcible doubling up of the body, as in railroad accidents or when the subject, caught in a stooping or sitting position, is crushed by a heavy weight falling on his head or shoulders.

Extreme or violent muscular action can, under certain conditions, produce visceral injury.

By percussive violence we mean that received from the impact of a rapidly moving object. Horse kicks, a blow from a piece of wood thrown from a circular saw, or flying objects in an explosion, are examples of percussive violence. This form of violence may rupture the solid viscera and likewise the hollow organs, if they are distended at the time of the injury.

Both compressive and percussive force produce visceral trauma by direct violence.

When the impact of the violence is received on any part of the body other than the abdomen, visceral injury may result from concussion, or as one might say, by *contre-coup*, the force being indirect or transmitted. In this way the solid organs and the hollow viscera, when heavily loaded, can be torn loose at their point of attachment, the tears often extending into the substance of the organ. The following case illustrates the results of concussive violence:

CASE 2.—R. T., aged 28, male, at 11 p. m. was thrown from a rapidly moving automobile, was struck on his shoulder but not run over; was able to crawl to the street curb and vomited before he reached it; was brought home in a state of collapse and was unconscious for two hours. He was ashy pale and vomited persistently. He complained of great pain in the upper abdomen and gave all the evidences of shock. There

were bruises on the head, right shoulder and on the back near the right hip, none on the abdomen.

I was called in consultation the fourth day, two hours before death. The man was almost moribund and gave all evidences of profound general peritonitis. He had *facies abdominalis* to a decided degree. The abdomen was distended to its fullest extent and was tender all over. There was an entire absence of peristalsis. The liver dulness was obliterated and there was some dulness in both flanks, but the patient's condition did not allow me to determine if it was movable or not. The pulse was rapid and thready, about 140, temperature over 102 F.; respirations were shallow. The patient complained of great general pain and had vomited recently, what the doctor called stercoraceous matter. I was allowed only a partial post-mortem examination. No bruises or ecchymoses on the abdomen. The abdominal cavity was full of fluid blood and clots and there had been general peritonitis. There was a tear, about an inch and a half long, in the liver along the falciform ligament. I could find no other lesion.

Sometimes the mere forcible jolting or jarring of the solid viscera causes rupture of their substance. This is more likely to occur if the organ is enlarged or softened by any morbid state. Wind concussion from explosions is another possible source of visceral injury.

Certain circumstances tend to lessen the liability to intra-abdominal injuries from external violence. The amount of clothing will sometimes soften the force of the blow, and at least prevent the occurrence of any surface traumatism. A fat abdominal wall will lessen the liability to injury from percussive force, while it might increase the danger if the force was either compressive or concussive.

CASE 3.—R. B., aged 62, male, weight about 200 pounds, railroad superintendent, at 6 p. m., six hours after eating, accidentally fell or slid from the seat of a farm wagon. He dropped forward on the flank of the near horse, striking on the left lower ribs and upper abdomen. He fell only about three feet and struck against the rounded soft rump of the horse, and then slid off to the ground, landing on his knees. He was helped up and carried to the nearest house, a few rods away. He complained of intense pain in the region of the stomach. The doctor who saw him thirty minutes later found three lower left ribs fractured posteriorly and gave morphin to relieve pain in the upper abdomen. There were no marks of violence on the surface of the abdomen.

I first saw the man at 4:30 p. m. the following day, twenty-two and one-half hours after the accident. He was then lying on his back, slightly propped up in bed, with his knees drawn up. The expression on his face was anxious and indicative of suffering. The respirations were shallow and rapid; the pulse could scarcely be counted; temperature was subnormal. He was still vomiting and the abdomen was much distended and rigid. There was total absence of peristalsis. Great irritability of the bladder and constant desire to urinate were present. The patient's mind was slightly clouded, but he would rouse up enough to answer questions. There was great restlessness, with constant moving of the hands and arms. I made a diagnosis of rupture of the spleen and advised an immediate operation. Sudden collapse occurred soon after and the patient died before anything could be done, twenty-four hours after the accident. I was allowed to make a post-mortem examination of the abdomen only. The abdominal cavity was full of fluid blood and clots. There were two ragged tears near the upper border of the spleen. Death was due to hemorrhage.

I am sure that the weight of the patient and his fat abdominal wall influenced materially the results of what otherwise would have been an accident of no moment.

If the abdominal muscles are contracted and rigid in anticipation of a blow, as in athletic contests, the viscera are less likely to be injured than if the violence is unexpected and the abdominal wall is relaxed and soft.

The likelihood of internal injury being caused by external violence is materially influenced by the con-

dition of the viscera themselves. The presence of morbid conditions in any organ greatly increases its liability to injury. An enlarged viscus, by its increase in size and weight, offers, as one might say, a larger target. A congested or softened spleen, or an inflamed and edematous intestine, is much more easily torn than a normal one. Adhesions resulting from previous inflammations, by abnormally fixing any organ, may increase its liability to injury from violence. One of my own cases is illustrative:

CASE 4.—D. R., aged 61, male, dairyman, with history of having been gored in the abdomen by a bull twenty years previously, about 4:30 p. m., four hours after last meal, was stooping over to bandage a horse's leg and received a kick on the shin. As he straightened up he was squeezed between the horse's flank and the side of the stall, the abdomen receiving the brunt of the violence. When helped to his house a few minutes later he complained of great pain in the lower abdomen, over and above the bladder. He was nauseated but did not vomit. He looked ashy pale and the skin was cold and clammy. When first seen, about half an hour after the accident, he was lying still with his legs flexed. He complained of intense pain in the lower abdomen and of feeling chilly. There was marked general rigidity of the abdominal walls and the greatest tenderness was in the left lower quadrant. No dulness could be demonstrated. Peristalsis was absent and there was irritability of the bladder. The patient still gave some evidence of shock, but the pulse was of fair quality and its rate only slightly increased. Respirations were short and shallow. A diagnosis of probable visceral injury was made, and immediate exploratory operation was advised but refused. The patient could not pass urine and was catheterized. The urine was negative and contained no blood. Nausea continued, followed after ten or twelve hours by vomiting. Absence of peristalsis persisted and there were no bowel movements. Abdominal distention commenced in four or five hours. The pain over the bladder steadily increased. By 8 o'clock next morning, about sixteen hours after the accident, the pulse was 115 to 120 and thready, and the temperature was over 100 F. The abdomen was much distended, tender and rigid. Death occurred about fifty-six hours after the accident.

Post-mortem examination, made by Dr. Stanley P. Black, disclosed general peritonitis with extravasated intestinal contents. The intestines were more or less adherent from inflammation following the accident of twenty years previous. On the right side an adherent loop of the small intestine had been torn at the point of adhesion, an opening slightly over 1 inch in length being present.

A stomach distended with food, fluid or solid, or with gas, is more easily bruised or torn than an empty one. Therefore the relation of the time of the last meal and stool to the time of the receipt of the violence is of importance.

The part of the body impinged on, when violence is received, materially influences the nature of the resulting injury.

If the blow is delivered on the lower abdomen, injury to the small intestine, sigmoid or caput coli, may be suspected. Blows on the upper abdomen are not apt to injure the intestine unless received in the middle line and so directed as to crush the intestine against the spine, in which case the omentum and mesentery are also frequently involved. Violence received in either loin offers little danger to the intestines, except possibly the colon or duodenum, on account of their more fixed relations.

Force applied to the upper abdomen in the middle or on either side, as well as when delivered in the lumbar region, may injure the liver, spleen or pancreas.

Violence, of a crushing or gliding nature, delivered on the abdomen, too high for the intestines or too low for the liver or spleen, most frequently injures the mesentery.

A blow over a hernial sac, containing an intestinal loop, is often productive of injury to the intestine.

The character and extent of the injury to the viscera will depend on the nature and degree of the force, its application and the condition of the abdominal contents at the time of the accident.

The injury may be in the nature of a contusion, a crushing of the tissues, a tearing or a rupture of any of the viscera or their supports and attachments. It will also vary according as the organ affected is hollow or solid.

The damage may be direct and immediate to the organ itself, or it may be indirectly caused by injury to the blood-supply of the viscera affected.

The extent of the lesion will vary greatly. It may range from a slight bruising or abrasion of the peritoneal covering of the part affected to an extensive laceration of the substance, or even more or less complete disintegration of the whole of the viscera involved.

The state of the abdominal walls and the condition of the abdominal contents materially influences the degree and extent of the injury.

In considering the nature of these abdominal injuries, it is well to take up the different organs separately, dividing them into two main classes, the solid and the hollow viscera.

The solid viscera may be bruised, crushed or torn. A rupture of a solid organ is practically the same as a tear, except as to the mechanism of its production.

According to most authorities, the liver is the most commonly injured of the solid viscera, except, of course, the kidneys, which I am not considering, but in the accompanying series of cases collected from the literature, injuries of the spleen outnumber those of the liver. The liver may be crushed when the compression force is severe and applied directly over the region of this viscus, but this form of injury is not so common as the tears resulting from indirect violence, in which case the rents occur at or near the attachment of the supporting ligaments. Another form of tear is practically a rupture of the liver tissue resulting from extreme jarring or shaking of the organ. This is more apt to occur if the liver is enlarged or softened.

The spleen is subject to the same traumatism as the liver, except that rupture of the splenic pulp is, by far, the most common form of injury to this organ. The spleen is so much smaller and lighter than the liver that it is less likely to have tears in its substance resulting from traction on its supports. Its small size, deep-seated position, and its surroundings, also afford greater protection against direct crushing.

The enlarged spleen is much more liable to injury than a normal one. Consequently splenic injuries are more common in tropical or malarial countries. According to Cantlie, most of the tears or ruptures of the spleen occur on its inner surface, especially when the organ is enlarged, owing no doubt to the fact that the outer surface is tougher than the inner one. "A spleen can therefore have its inner surface ruptured by a blow on the abdomen over the splenic area, without any evidence of injury on its outer surface." This is due to concussion.

The normal spleen is most likely to rupture at the height of its functional activity, *i. e.*, some hours after eating.

Traumatism of the pancreas seldom occurs and is usually associated with injury of other organs.

The omentum and various mesenteries can be torn, bruised or crushed, but an injury to them is generally

associated with corresponding traumatism to the intestine or other organs.

In women it is always well to remember the possibility of rupture of ovarian cysts or ectopic gestation sacs.

The hollow viscera liable to injury are the stomach, intestines, gall-bladder and ducts, the thoracic duct and the large blood-vessels.

The stomach may be torn in any of its parts, but the most common seat of injury is near the pyloric end. The tears may be small or extend completely across the stomach. When the latter occurs, it is always at the pyloric end (Deaver). The stomach is so well protected by its surroundings that it is seldom injured except when distended with food or gas, and in most instances injury of the stomach is associated with trauma of the liver or other viscera.

The intestines may be torn, crushed or ruptured. The injury may be slight or extensive, single or multiple, and may involve any portion from the pylorus to the rectum. The more fixed parts of the small intestine are most frequently affected, the upper end of the jejunum and lower ileum furnishing about 75 per cent. of all intestinal injuries, the duodenum nearly 5 per cent., the large intestine a little over 3 per cent., while 17 per cent. covers other parts of the small intestine. The extent of the rupture or tear is generally in proportion to the degree of violence.

When the intestine is crushed or torn by traction on its fixed points, the tear may be large. When it bursts from localized hyperdistention of one of its loops, resulting from external compression, the perforation in the inner coat is generally small and round, while the peritoneal coat is torn to a much greater extent, just as is seen in a blow-out of an automobile tire, the inner tube showing only a small opening while the outer casing is ripped open for several inches.

Tears and contusions of the intestine generally occur near its mesenteric attachment, while ruptures are usually found opposite the mesentery. When a loop of intestine, contained in a hernial sac, is injured, the lesion is apt to be single and in many instances the damaged intestine, as soon as it is relieved of its distention by leakage of gas and fecal contents, drops back into the abdominal cavity, leaving the hernial sac soiled with the extravasated matter.

Rupture of the gall-bladder or of the bile ducts is rare, occurring most frequently in the presence of stones or some prior pathologic condition of these viscera, and is almost always associated with trauma of the liver. According to Deaver the cystic duct is the part most commonly affected.

As it is an accepted fact that an early diagnosis is absolutely necessary if anything is to be done in these cases, the symptoms of the first few hours are the important ones. The later manifestations, coming on when the patient is beyond relief, are so easily appreciated that a discussion of them is not needed. I shall therefore confine myself, as much as possible, to the consideration of these earlier signs.

The fact that the symptoms vary so much and that none is constant, makes an early diagnosis, in most cases, a matter of extreme difficulty. In many instances it is practically impossible. For these reasons a diagnosis of suspicion or presumption should be adhered to until the element of internal injury can be positively eliminated.

Unfortunately, the severity of the early symptoms does not always correspond to the degree of injury. An extensive trauma may be followed by only slight primary

manifestations. On the other hand, injuries of much less degree are often associated with a display of most alarming symptoms.

The train of symptoms is really governed more by the nature than by the degree of the trauma. In injuries of the solid viscera shock and signs of hemorrhage predominate, while a tear of the intestine or stomach is followed, more or less quickly, by the evidences of peritonitis. Where the intestine is simply bruised, without any perforation of its coats, or its mesentery injured the peritonitis may not develop until a necrosis permits leakage of its contents.

Pain is probably the most important symptom; not that it is the most constant or dependable one, but because it is generally the first and because it is the symptom that appeals most to the patient and influences him to apply to a physician for help. Unfortunately, it is often very slight and does not last long. It may be immediate or not appear for hours. Its relation to the degree of trauma is not a constant one, often being present in inverse ratio to the amount of injury. The character and severity of this symptom varies greatly. It may be slight or intense and agonizing. It is not like the pain of the ordinary functional or inflammatory abdominal troubles, but is like the pain that accompanies ruptured extra-uterine pregnancy, sharp and lancinating, as if something had given away or torn loose. It is often described by the patient as deep-seated and radiating. It is the pain of torn peritoneum and not that of inflammation, which appears later. The degree of the initial pain is often much influenced by the amount of shock present. In extreme shock the patient often makes but little complaint of pain, but as reaction sets in and the shock lessens, appreciation of his suffering becomes more evident.

The initial pain is generally localized, either at the site of the injury or at some point more or less distant, even beyond the region of the abdomen. The secondary or inflammatory pain follows the course of the extravasated blood or visceral contents, and as a rule is more generalized. Therefore this initial pain is important only as it calls our attention to the fact that an injury has occurred and that it may, by its location, indicate the probable site of the injury.

Next to pain, shock, varying in degree, is the most common accompaniment of intra-abdominal injuries. Like pain, it does not bear a constant relation to the gravity of the injury, but generally speaking the greater the injury the more profound the shock. The mere presence or the amount of initial shock, *per se*, is of no real diagnostic value and if profound often obscures rather than helps to make a diagnosis. Contrary to this, its progress or course is of the utmost import from a diagnostic and prognostic standpoint.

Rupture of hollow viscera is likely to be associated with early and deep shock, from which the patient rallies, except in the few instances in which the nature and extent of the injury is sufficient to cause death quickly. On the other hand, lacerations of the solid organs, in which hemorrhage is the cause of the symptoms, produce shock, which though slight at first steadily increases as the hemorrhage continues.

Progressively deepening and secondary shock are most serious manifestations.

Nausea and vomiting are often early symptoms, but as a rule do not appear until a short time after the occurrence of the accident. Early vomiting is not of much importance, but persistent or late vomiting is usually indicative of serious injury. The quality of the vomitus

will sometimes aid in diagnosis. The presence of blood in it will indicate trauma of the stomach or duodenum, but its absence will not exclude injury of these viscera. In large tears of the stomach vomiting is likely to be absent, or if present may or may not contain any blood.

Tenderness, either local or general, is commonly found. If early it is usually quite marked over the seat of the visceral injury. Later on when peritonitis intervenes, after rupture of the stomach or intestines or following marked hemorrhage, the tenderness, together with the pain, becomes general or may appear at a point quite distant from the site of the injury.

Another symptom closely associated with tenderness is rigidity. This may vary from a slight local stiffness or tenseness of the muscles to a board-like rigidity of the whole abdominal wall. This condition, in degree, bears a more definite relation to the amount or seriousness of the internal injury than any other manifestation. As a rule it occurs early and from that standpoint, although it may last only a short time, is of the utmost importance in helping to a timely diagnosis. When localized it bears a general relation to the site of the injury and often, in the absence of other leading symptoms, indicates the part of the abdomen to approach in operative procedure. Where there is general rigidity close observation may distinguish a greater resistance in some one part than in others. A board-like rigidity of the whole abdominal wall, when associated with shock, vomiting and pain, following any form of external violence, is always to be taken as presumptive testimony of serious injury. According to Deaver the so-called "checker-board" abdomen is almost pathognomonic of grave intra-abdominal lesions.

Some rigidity may be present with bruising of the abdominal walls, but it does not progressively increase. Usually it is not apparent under light palpation, appearing only when pressure is made on the bruised and tender muscle.

Distention is generally a late accompaniment of trauma of the abdominal viscera. When it appears early, to any extent, it usually means gross injury with extensive extravasation of intestinal contents, both fluid and gas. The distention that appears later and comes on gradually is the result of intestinal paralysis, the earliest sign of which is lessening or cessation of peristalsis. This diminished or absent peristalsis is, to my mind, one of the most important signs that we have, though in the cases reported and in the articles written on this subject it is rarely mentioned, but one or two writers laying any stress on it. I think I place more dependence on it than on any other symptom, not only in the class of cases under consideration, but in the matter of diagnosis of all acute inflammatory and accidental troubles of the abdominal cavity, whether of internal or external origin. I think auscultation is as important as an aid to diagnosis in abdominal diseases as it is in those of the chest, and yet I know of no other means of examination that is so universally neglected. O. C. Gaub of Pittsburg has shown experimentally that peristalsis is obliterated very quickly, after a blow on the abdomen, to return inside of a few hours if the resultant injury is not serious. He reports some cases, in which operation was performed in the presence of peristalsis, other symptoms indicating visceral trauma, in which no injury could be found. Claybrook also emphasizes the importance of this symptom.

Early aperistalsis may only indicate that the abdomen has received some shock or violence, and does not necessarily show that an injury has been done, but if three

or four hours after the violence, when reaction has taken place, there is still silence on auscultation and this condition persists, it is almost conclusive proof that the injury is of some moment. When aperistalsis recurs, or when it commences some hours after the receipt of the injury, it is always indicative of serious trouble. It appears more promptly and is more complete and persistent with perforations of the intestines than when associated with other visceral lesions.

Dulness on percussion is not a very dependable sign. If a movable area of dulness can be positively demonstrated, it is good proof that a quantity of fluid, blood or intestinal contents, is free in the peritoneal cavity. But a moderate amount of gaseous distention will obscure it and fresh adhesions will prevent the movement of the fluid when the body position is changed. The absence of liver dulness, asserted by some to be almost pathognomonic of intestinal perforation, is certainly deceptive.

The expression of the patient's face is of prime importance; the so-called facies abdominalis is a frequent accompaniment of serious visceral lesion. It is not a part of the symptom-complex of shock and, as a rule, does not appear until reaction sets in. It is rarely absent, but it may be present to only a slight degree. It is practically always absent when the injury is trivial. The expression is one of distress and anxiety, as if the patient were conscious of impending danger.

Early restlessness is common, especially when the amount of shock is slight. On the other hand, the patient lies quietly if there is profound shock, or, when, later, the peritoneum is inflamed. A reclining posture is generally assumed, the patient lying on his side with the thighs flexed, or he may sit up, leaning forward, with the knees drawn up toward his chin.

Thirst is quite common, especially when there has been much hemorrhage. In a few cases bowel movements occur early, but when the injury is of any extent, especially when the intestine is involved, the paralysis of the intestine precludes all possibility in that direction. A movement containing blood, if it does occur, may be of some value, according to the nature of the blood, in determining the location of the intestinal injury.

Irritability of the bladder is a common and moderately early symptom, commencing as soon as the pelvic peritoneum is irritated by the presence of a quantity of blood or infected by escaped bowel contents. It is in reality one of the earlier manifestations of a commencing general peritonitis, septic or otherwise. The urine in most instances will be negative unless the bladder or kidneys are involved, therefore its examination is useful only in eliminating the question of injury to these organs.

The temperature and pulse are those of shock, internal hemorrhage or peritonitis. The initial temperature is apt to be subnormal, rising as reaction sets in and going above normal with the development of peritonitis. An early, rapid and marked rise of temperature following abdominal injury is suspicious of intestinal rupture and leakage. A secondary fall of the temperature, to below normal, is indicative of serious trouble (Le Conte).

The pulse is variable, rapid, weak and thin if there is much early hemorrhage associated with shock. A pulse, of good quality at first, steadily losing in strength and quality, indicates progressive hemorrhage. According to Le Conte, a steadily rising pulse, after reaction has taken place, is a bad sign, but it must be associated with other symptoms to be alarming.

Dirt marks and tears of the clothing are of value, as are also superficial bruises, in determining the nature of the violence and its point of impingement, and should

always be investigated, for, in the absence of a definite history of the accident, either may be the decisive factor.

While an accurate or differential diagnosis is not essential, still it is desirable, to say the least. What is essential, however, is the ability to recognize that certain combinations of symptoms are presumptive of pathologic conditions which, if left to themselves, will jeopardize the life of the patient. It is not necessary to say that the intestine is torn or the spleen ruptured to be justified in advising operative treatment. To know, however, that some viscera has or has not been injured enough to necessitate operation is what is demanded.

A careful study of the initial symptoms, the character of the violence, and the part of the body receiving the force, should indicate the region of the abdomen containing the injured viscera.

A differential diagnosis, other than a presumptive one, is an extremely difficult matter, but certain symptoms when present are of differential value.

As stated before, an early appearance of signs of peritonitis is indicative of injury to a hollow viscus, while symptoms of hemorrhage point to trauma of one of the solid organs. In the latter case peritonitis is generally a late manifestation.

In rupture of the pyloric end of the stomach or of the duodenum the initial pain will be epigastric, but a little later is apt to be referred to the right side in the region of the appendix, as has been pointed out by Moynihan, in duodenal perforation from ulceration.

When the tear is near the cardiac end the pain will be more on the left side, gradually becoming lower as the extravasated stomach contents gravitate along the descending colon. If the tear is in the posterior wall the leakage is into the lesser peritoneal cavity, the resulting peritonitis is limited, and the accompanying pain is also more or less localized. The local pain of a ruptured stomach is often described as gnawing or burning in character.

In ruptures of the intestines the primary pain is usually local, but quickly becomes general. The lower in the intestinal tract the perforation occurs the more intense will be the peritonitis.

An empty condition of the stomach and intestines defers the appearance of peritonitis. When necrosis of the intestine follows injury to its mesentery, the sudden onset of symptoms, accompanying perforation, frequently occurs just after the ingestion of food.

The obliteration of peristalsis is one of the most important signs of perforation of the intestines or stomach. It is a most constant symptom and rarely absent.

The primary symptoms of injury of the mesentery are those of hemorrhage.

The pain of liver injuries is more or less influenced by anything which involves movement of the diaphragm, especially when it is sudden or excessive. It is intensified by hiccoughs and vomiting. Inspiration increases it and accordingly respiration is embarrassed. The pain is often referred to the right shoulder.

In injuries of the spleen precordial pain is often present and sometimes the pain is referred to the left shoulder. Air hunger and shortness of breath are prominent. Ballance's sign, dullness movable on the right side but not on the left, due to the formation of clots near the spleen, may be present when the splenic hemorrhage is slow.

When the pancreas is ruptured, torn or crushed, the hemorrhage or fluid accumulating in the lesser peri-

toneal cavity may create a cyst-like tumor. The pancreatic secretion induces peritonitis very quickly. The early presence of sugar in the urine is suggestive of pancreatic involvement.

The symptoms of rupture of the diaphragm are those of diaphragmatic hernia, but as the former is ordinarily associated with trauma of other viscera, its manifestations are obscured and it is practically never recognized before operation or autopsy. However, the signs of pneumothorax following an abdominal injury, when the usual causes of air in the pleural cavity can be excluded, point to a possible tear in the diaphragm. Hiccough also suggests injury to the diaphragm.

Rupture of aneurysm of the abdominal aorta or of any of the blood-vessels produces symptoms practically similar to those of rupture of the stomach, but in most instances death follows quickly. If the rupture of the vessel is not complete and a traumatic aneurysm is produced, the symptoms, although intense at first, do not progress as when the stomach or intestine is torn. The signs of peritonitis are lacking.

I have collected reports of some 350 cases of subcutaneous injuries of the abdominal viscera. Of these only 290 were available, as the rest were so lacking in details as to be of no use whatever. I have used those cases only in which actual visceral injury was either verified or disproved by operation or post-mortem examination. Of those tabulated* only a small proportion contained sufficient accurate data on which to base any deductions. Most of them were inaccurate and indefinite. Fully 20 to 25 per cent. did not mention or were indefinite as to the time of operation after the accident. About 2 per cent. left one in doubt as to whether the patient lived or died.

In the following figures I have added, to the 290 tabulated cases, three of my own reported in this paper. The causes of injury were as follows:

Explosion, 1; strain, 4; blows, 86; kicks, 51; run over, 38; falls, 53; thrown, 15; crushed, 42; not stated, 3.

The intestine was affected 181 times; liver, 22; spleen, 45; pancreas, 25; omentum or mesentery, 14; diaphragm, 5; ovarian cyst, 1.

Pre-operative or antemortem diagnosis was stated as made in 101 out of the 293 cases. Of these 101 diagnoses 28 were general, 17 were probable, 38 were accurate and 18 were wrong.

Of the 18 incorrect diagnoses, most were wrong as to the nature or location of the injury and not as to the fact.

In 9 cases the reporters frankly stated that no diagnosis was made, while in 183 cases the matter of diagnosis was not even mentioned. It is to be presumed that a diagnosis was not made in these cases.

In percentages, no diagnosis, 65.5 per cent.; wrong, 6.1 per cent.; probable or general, 15.4 per cent., and accurate or correct, 13 per cent.

One hundred and thirty-two patients died, 155 recovered, and the results were not stated in 6. They were divided as follows:

TABLE 1.—OUTCOME OF CASES

	Intes- tine.	Liver.	Spleen.	Pan- creas.	Omentum and Mesen- tery.	Dia- phragm.	Ova- rian Cyst.
Died	94	11	10	10	2	5	0
Recovered . . .	82	11	34	15	12	0	1
Not mentioned	5	0	1	0	0	0	0

Of the 293 patients 257 were operated on and 36 were not operated on.

Of the 36 patients not operated on all died.

Of the 257 operated on 96 died, 155 recovered and the results in 6 were not stated.

* As stated in the introductory footnote, the table is here omitted.

TABLE 2.—LENGTH OF TIME WHICH ELAPSED BETWEEN RECEIPT OF INJURY AND OPERATION

Operation following injury.	Total Cases.	Died.	Recovered.	Result Not Stated.
Within the first 6 hours.....	64	15	48	1
In the second 6 hours.....	36	12	24	..
In the third 6 hours.....	29	14	13	2
Over 18 hours.....	78	35	42	1
Indefinitely stated but presumably early	13	7	6	..
Time not stated.....	37	13	22	2

In injuries of the intestines the mortality of the patients operated on in the first six-hours was 20 per cent.; the second six hours, 35 per cent.; third six hours, 56 per cent., and over eighteen hours, 66 per cent. Of the liver, first six hours, 71.5 per cent.; second six hours, 50 per cent.; over eighteen hours, the mortality was *nil*. Of the spleen, first six hours, 8.6 per cent.; second six hours, 40 per cent.; over eighteen hours, only 16.6 per cent. Early and late operations for injuries of the pancreas resulted in 29 per cent. and 33.3 per cent. mortality, respectively.

No definite conclusions can be reached as to the frequency of the various symptoms, as the majority of the cases were so indefinitely reported.

In the following figures I refer only to the symptoms of the first few hours:

In the reports of 265 cases pain was mentioned 182 times; as decided pain in 147 cases, slight in 29 and absent in 6; it was not mentioned in 83 cases.

Shock was mentioned 94 times; severe in 46, mild in 31 and absent in 17; not mentioned in 171 cases.

Rigidity was mentioned 159 times; marked in 125 cases, slight in 20 and absent in 14 (in about half of the 14 it appeared as a later manifestation); it was not mentioned in 106 cases.

Peristalsis was only mentioned in 5 instances; absent 3 times and present twice; in the two latter cases operation disclosed no trauma.

A study of these statistics will show the following:

The mortality of injuries to the abdominal viscera, from external violence—over 40 per cent.—is much higher than of corresponding lesions resulting from other causes, and is due no doubt to lack of early diagnosis and to operative hesitancy.

The death-rate of early operations averages less than one-third that of late operations.

The more commonly observed symptoms, pain, shock and rigidity, were present early in a large majority of the cases; pain 97 per cent., shock 82 per cent., and rigidity 90 per cent.

Peristalsis, one of the most important signs, was noticed or mentioned in less than 2 per cent.

SUMMARY

Anyone who has been subjected to external violence of such nature as could, either directly or indirectly, produce injury to any of the abdominal viscera, should be given the most careful examination, and be kept under close observation for several days. Any symptom, no matter how slight, referable to the abdomen, must be considered as a sign of possible visceral injury when it follows the receipt of any violence, regardless of the point of impact or the extent of the external force.

The degree of violence bears no relation to the extent or severity of the resulting injury.

A most thorough investigation as to the exact details of the accident is important as an aid in determining the possibility and the nature of any injury.

Blows, kicks, and crushing violence produce most of the intestinal injuries, compressive force is the most common cause of trauma of the liver, and concussion is responsible for most of the splenic ruptures.

The presence or absence of peristalsis is of the utmost importance from a diagnostic or prognostic standpoint. Its early presence indicates that the abdomen or its contents have received some shock or violence. The persistence of recurrence of this sign is conclusive proof of internal or visceral injury. A decided lessening of peristalsis is a danger-signal if it occurs more than three or four hours after the accident. Active peristalsis is always encouraging in the presence of any abdominal injury.

There are no symptoms that are pathognomonic, most of them being common to all injuries, but, in general, progressively increasing shock indicates trauma of the solid organs, while early symptoms of peritonitis follow tears of the stomach or intestine.

Pain as an initial symptom is important only in that it calls attention to the fact that an injury may have occurred and that it may, by its location, indicate the possible site of the trauma.

Shock possesses no real diagnostic value except as to its progress or course, which is of the utmost importance.

I also wish to emphasize this fact: that an exact diagnosis is not necessary, though it is highly desirable, and that the early recognition of the probability of visceral injury is absolutely essential to lower the death-rate in these cases.

Appreciation of possibilities, or, as Murphy has aptly expressed it, "a keen surgical sense," is what is needed by the doctor who first sees the patient.

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ABSTRACT OF DISCUSSION

DR. GARRY D. HOUGH, New Bedford, Mass.: There is one diagnostic sign in cases of internal injuries of the abdomen which was not referred to by Dr. Sherk. It is not always present—perhaps in only 30, 40 or 50 per cent. of cases. When present, it tells you exactly where the trouble is located. That sign is the hyperalgesic zone, which corresponds to the injured viscus. In 1893, an Englishman first brought out the fact of a hyperalgesic zone corresponding to disease in an abdominal viscus. When this sign is present, so far as cumulative experience can yet tell us, it is an absolutely certain thing, but unfortunately it is present in only about half of the cases.

DR. MAURICE H. RICHARDSON, Boston: A most important point which is emphasized in this paper is abdominal diagnosis. In an abdominal case, the greater the difficulty of diagnosis the greater the interest, and the greater the satisfaction when exploration shows that diagnosis correct. Except in urgent cases, I take any amount of time necessary to come to a positive conclusion. But there is reason in all things. After violent blows on the abdomen, to wait for symptoms enough for a positive diagnosis is to let pass the only opportunity for successful intervention—so, too, in perforations of the alimentary canal, and in duodenal and gastric ulcer. On the other hand, it may save the patient an unnecessary exploration if the surgeon takes days, or even weeks, to make a diagnosis.

In teaching, I stand for extreme care in diagnosis, especially abdominal—for the exhausting of every symptom in the history, and of every sign in the physical examination, and for the education to the greatest nicety of the powers of observation and deduction, before subjecting a patient to even the slight risks of exploration. But when we come to abdominal emergencies we cannot wait. In large communities, where these acute emergencies are common, we cannot and do not wait for a positive diagnosis. We must feel assured that there is a reasonable certainty that some serious lesion demanding surgical remedy is present. The dangers of the exploratory operation are, of course, slight. I could pick out twenty-five men in this audience whose operations for chronic appendicitis

would number, in the aggregate, at least 50,000, with so small a mortality that it would be a negligible factor. And yet there is a certain risk which should be avoided in advising operation on inadequate study. When a surgeon advises a young girl to have the appendix taken out, and bases that advice on her saying that she has appendicitis, and on a physical examination which consists in leaning across his office table and pressing with his fingers on the right iliac fossa, through the clothing, corsets and all—I call that the extreme of absurd opinion and unjustifiable advice.

In abdominal trauma, whatever the cause, we must not wait until there is muscular rigidity, vomiting and distention. We all know that when these symptoms are present operations succeed only by a miracle. In chronic abdominal disease the benefit of the doubt means conservatism. Study the case with care and deliberation. What you lose in time you gain in prognosis. In acute abdominal emergencies, especially the traumatic, the benefit of the doubt means radicalism. Make the diagnosis with speed and operate immediately. What you gain in time you gain in prognosis. I could give my personal experiences, which have forced me, rather against my natural tendencies, to become extremely radical in the presence of sudden and severe abdominal symptoms, whether traumatic or not. If the surgeon ever needs to be prompt in the application of operative measures for the relief of acute abdominal symptoms, he must be prompt when those symptoms follow violence to the abdominal wall.

THE SECRET COMMISSION EVIL*

J. P. LORD, M.D.
OMAHA

There seems to me to be a greater need to discuss one of the ethical questions agitating the surgical world to-day, than to add another scientific paper. It has seemed to me that specialism, with all the advantages and benefits which it has brought to mankind, enabling specialists to render such distinct service to humanity, and thereby enhancing public confidence and esteem, has not been an unmixed blessing to the professional body. The new conditions, changed relations, variable rewards, and readjustments in the relationships of patient, family physician and specialist, together with new economic conditions, as developed by our numerous public and private hospitals, dispensaries, laboratories, corporation work, indemnity insurance, lodge and society practice, have brought problems for solution by the profession in general, and our specialty in particular. The commercial spirit, with which the present age is now credited, has added another factor, the control of which we, with our somewhat neglected code of ethics, have not kept. The rapid development of specialism, with its special rewards and the keen rivalry incident thereto, has developed a new order of things professional, the ethical adjustments of which have not yet been generally made.

There has been so much said on this subject that it would seem almost puerile to attempt to say more. Indeed, it is not my purpose to try to improve on what has already been so well and so fully presented. Realizing as I do that it is probably true that the practice of fee division, secret division, joint fees, commissions, so-called diehotomy, graft, and possibly obtaining money under false pretenses, is increasing, especially among the younger element, I undertake to arouse our members from their seeming lethargy. We teachers and hospital surgeons, as a rule, are established in our respective communities, and have not felt the force of

this evil to so great a degree as to compel action. Those who follow will feel it keenly. Many young men are wrestling with this moral problem and will yield to the general trend of practice unless some aroused moral force within the profession, or the effect of publicity, checkmates this menace to professional honor, dignity and common honesty. I agree with those who favor publicity as the speediest and most effective remedy. Then, too, we need some Roosevelts to keep up a rapid-fire attack on this practice.

We should maintain a sentiment against any countenance of graft. Its devotees should not be given positions of honor. They should learn the penalty for unfair and unmanly competition. The present standards of membership of this society should prevail, and we would do well to revise our membership lists, since we have a considerable number who do business on a commercial basis. Our body is not in a position to reform the other fellows when we, too, are culpable. Scarcely a man among us is in a position to cast the first stone, but there are many who have recoiled from this thing on the discovery that this temptress had assailed their manhood and their integrity, and that they had actually violated their patients' confidences.

In writing on this subject several years ago I made the statement that the division of fees was not itself so bad as that to which it leads. The road is short and direct to the practice of graft. This may be a seemingly harsh term to apply to some of the more respectable forms of secret fee division. Secrecy, however, makes it dishonest and renders possible all forms of abuse. The results of the practice are so manifestly demoralizing as to cause all those who love their profession and cherish its sacred traditions, and who seek to uphold its honor and good name, to array themselves in opposition to those who seem concerned only for the monetary rewards of to-day.

It has been observed that those practitioners who work on a commercial basis are too prone to lose sight of the patient in their efforts better to serve their immediate selfish ends. Their lack of thorough conscientiousness leads them into questionable methods. They handle cases as merchandise instead of treating them as patients. This causes them to hold on too long before advising operation, and then to recommend operation on a moribund patient. Their zeal to have people operated on who are willing, causes them to work up cases, and this working-up process sometimes is so considerable that they claim compensation for it. The service is often times considered by them of monetary value equal to or greater than the skilled and experienced services rendered by the surgeon, who has possibly made or caused to be made various laboratory tests, and exhausted every resource to complete a diagnosis, and who has done the operating and given the after-care.

The specialists with their hospital connections and the valuable facilities for advanced and successful work, and the resulting wealthy and large clientele, cause the envious to consider that these men have the best of it, and they are willing to adopt grafting as their most ready means to easy money.

The practitioners who have for years adhered to an inelastic fee-bill find themselves with their financial wings clipped, and unable to rise above the level of customary fees. The specialist is somewhat of a law to himself and most often gets what he asks. These practitioners, therefore, avail themselves of the specialist's facile faculty of fee-getting, by requesting the specialist

* Read before the Western Surgical Association, Chicago, December, 1910.

to add a sum for them, as the people would object to paying them a proper amount.

The specialists have often been accommodating in this way, and have saved themselves and the family physician the trouble of explaining the matter to the patient. The country doctor often plays "goody-goody," and says that he will not make a charge for accompanying the case if expenses are paid, of course depending on receiving a part of the specialist's fee. The specialist's fee is, therefore, under such circumstances, unnecessarily large. This gives the patient and all his friends an exaggerated idea of the value of the surgeon's services, and the relatively greater importance of the work of the specialist. The poor country doctor's services, therefore, become diminutive, judged by the cheapness of his fees. In other words, he is overshadowed and has cheapened himself.

Physicians of all classes must learn to make charges commensurate with the value of their services. Fee-bills hinder in this. The fee-bill is the union scale. It bolsters up the incompetent and often prevents the high-class, scientific man from getting his deserts. A hide-bound fee-bill and an increasing lack of appreciation of the practitioner's value, dwarf him, and compel him to resort to questionable methods for playing even. He must learn to elevate his standing by special fees for his improved methods of diagnosis and treatment. These have been acquired, perhaps, by special post-graduate courses, time abroad, and special equipment, and yet his price per visit or consultation is the same as it was twenty-five years ago.

Surgeon's fees may be no greater, but when we come to consider that it is possible for the surgeon to operate on several patients in the course of one morning, which is rendered possible by having the command of an unlimited hospital force, we can readily understand how the net results may be much greater than in the earlier days of surgery. On the other hand, the practitioner finds his work more exacting and painstaking, requiring more time, trouble and expense.

The rapid development of surgery during the last quarter century, with its greater rewards, has attracted so many to its ranks that competition for business has become so keen as to bring about these trade methods. Too many are now occupying the surgical field to be favored with teaching and hospital positions. Therefore, other means must be resorted to for attracting business. This custom of fee division, however, was probably established by some of the very men holding these places, and now their old weapon is turned against them.

Many of our surgeons throughout the country are ready-made after a few weeks at some of our large clinics, and then after self-styling themselves as surgeons and passing word along the line that they are liberal and fair with the general practitioner, they are soon doing business and are not embarrassed by that period of waiting so well remembered by some of us.

Our medical schools have been remiss in their ethical instruction to students. The subject of fee division has been eschewed in some faculties for fear of engendering feeling, developing strife and endangering the integrity of the organization. The same silence has prevailed in medical societies, because it might cost something to speak. Students are now without the close contact that was enjoyed in the days of the preceptor, whereas they now need more of the moral and ethical side than ever before.

Clearly so gross a violation of honesty and ethics, if continued, will lead to greater violations of fair play. If our tendency is to lower levels of conduct, it will be but a question of time until our noble profession will be out of favor with the people. There has never been a time when full confidence is more needed, because the cooperation and confidence of the people is necessary to secure the legislation needed for conserving the public health. This would aid the people in realizing our dreams of health and resultant happiness from the prevention of disease consequent on a universal crusade against violations of hygiene and health, and for the elimination of all preventable disease. A mercenary profession unworthy of public confidence will retard this movement and the unworthy members must be held to account by us and our standards maintained. At present the profession is becoming demoralized and our standards are being systematically assailed. Not only our standards, but those who stand for them, are attacked and their characters and motives are besmirched.

The graft element is going into medical politics and some county societies are controlled by this element. The old guard is discredited and lowered standards set up. The influence of these classes is against the American Medical Association, and their influence is soon to be felt in their organized opposition. The profession of Chicago and some other places do not have to go from home to read the handwriting on the wall.

The demoralization will be more complete when this practice extends to other lines than surgery. The movement has begun, and consultation practice and other specialties are now in the throes of this evil. The practitioner will call a man of sufficient standing to enable him to name a fancy price as the consultant's fee, which he collects and then remits the consultant the minimum fee. Any one of us can verify this by personal experience.

The primary object of fee-splitting is to get business. It is unfair competition. It has been my observation that fee-splitters are bad competitors in other ways. They will resort to other equally devious or questionable means of getting patients. They are usually under-bidders; they lack sincerity; they are dishonest; they do not stop at dividing with physicians; hotel clerks, hack-men, news-agents, bar-keepers, ordinary clerks, traveling men, medical students, priests and preachers—all are represented, though few of the latter classes stoop to this practice. Those who do this will not stop at wilful misrepresentation of men of high character and standing. Physicians go lower and lower who become infected with this vice, and their penchant for easy money becomes their undoing. Their methods become known in a community. Then they sell out, move to another locality, and immediately proceed to repeat their previous methods. These, of course, are exaggerated examples of the grafter, but a physician who grafts at all is not only unethical but also dishonest.

The graft spirit has developed alarmingly within a decade, but a reaction has set in. Encouraging reports of progress have come from Chicago, Minneapolis and St. Paul, and I am pleased to report that a stand has been taken by the faculty of the University of Nebraska and of the Creighton Medical College. Whole states are, however, reported in the grasp of the system. Kansas, Iowa and Missouri, as well as many other states, are affected by it. From Kansas specialists report that division of fees is too mild a term; that the surgeon must now accept what the general practitioner is willing to give him.

Hospital service is now required for graduation by some medical colleges, and considerable numbers who have had hospital training and are qualified to do surgery go to our smaller cities and larger towns. To gain a foothold, notwithstanding the prestige of college professors and the large denominational city hospitals to meet competition, a resort to fee division and ultimate graft is the easiest course. The wail is going up in every quarter from our less enterprising but more conscientious confrères, and we are now hearing from some of our city brethren, who are beginning to observe the rather alarming prevalence of these methods of finance, exploitation of cases, and the merchandising of patients.

After all of this lugubrious, pessimistic and despairing talk of conditions in our profession I am still hopeful. Physicians as a class are the best people on earth, made so by their education, environment, every-day training in charity and human sympathy.

This evil thing had a very innocent and insidious start. The surgeon wanted to be fair and divided fees that the physician had in part actually earned. Nobody was harmed, for the patient had not been wronged. This seemed innocent enough. Then came the time when the physician collected the fee and told the surgeon that the patient could pay nothing, or could pay but little, and either kept the whole or an undue portion, or took the divided fee and then rendered a separate bill. After this he became money-mad and sought subjects on which to satiate his sordid desires for easy gain. If the honest surgeon turned him down he sought those who would not and he has been busy ever since.

The surgeon who follows the lines of least resistance in these moral matters soon finds himself in the grasp of the system. Many very good, but quasi-respectable, men follow this practice, persuading themselves that the doctor cannot be paid too much, and uphold the practice because it suits their convenience and is more profitable. Then, too, they say, "What's the difference?" The difference is most keenly realized when you have to tell your son, as I have mine, that our profession is becoming commercialized.

The prospects, therefore, are not encouraging for the profession, and we are compelled to admit that it is not what it once was. Its ideals are lowered. Its ethics may not be maintained and the best men under these conditions will not be eager to enter it.

Such courses, if pursued, will cost the profession its influence, cause loss of respect and confidence on the part of the people. Overcrowding and commercial competition will cheapen services and with the increase of endowed hospitals, dispensaries and laboratories, rewards for scientific medicine will be reduced. The general profession, which is already overshadowed by specialism will then be in hard lines. Every time a physician fails to make a proper and independent, self-respecting charge for the services rendered by him in the making of a diagnosis, recommending an operation, accompanying a patient to a hospital, being present, or assisting in an operation, he belittles himself, unduly aggrandizes the surgeon and discounts his own future usefulness, making it that much harder for those who follow him.

To be respected the physician must be self-respecting and respectable. He is the surgeon's friend and the surgeon will help him, if he wishes, to be independently, adequately, and respectably paid for his valuable services to the patient and to the surgeon as well. Divi-

sion of fees is wrong, dishonest, and must be stopped for the good of all concerned. It has been my settled conviction for a long time that the physician is the ultimate loser by this practice, no matter how immediately profitable it may be to him. He is becoming dwarfed by his own short-sightedness and asphyxiated by a noose which was cast about him by a crafty specialist, perhaps, but which he himself is now tightening about his own throat.

There has been more harm done than can be overcome in a generation. Delayed action means more sacrifice. The organized profession should busy itself in reformation and take its stand in medical colleges, hospitals, and societies, and as individuals and organizations, educate the public and reform our own members. The most hopeful view may be taken of the result. Any practice which even smacks of graft, or of obtaining money under false pretenses, cannot endure before a righteous public opinion. Nor will it continue in a profession which has cherished ideals from Hippocrates and the whole line of medical saints, religiously followed by the vast majority, during all the ages of the history of medicine.

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THE TREATMENT OF ANTEFLEXION OF THE UTERUS *

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I have nothing new to offer in the treatment of anteflexion of the uterus, except the resolution not to offer anything new. The great and original Solomon knew of nothing new. In surgery most of the new things are nuisances because it takes so much writing of papers and mutilation of patients to demonstrate that the new usually eventuates in nothing, and should not be written about.

My experience with anteflexion is that somehow or other we have always been able to relieve our patients. Yet, judging from the new things that have been advocated from decade to decade, one would infer that up to the present time, or at least up to the last new thing that is offered for trial, the real thing had not been discovered. It is "off with the old and on with the new." There are many great operators, yet few great surgeons. The fact is that those who make real advances in surgery, as in other arts, do not look into the future but into the past. They take the good they find in old things and adapt it to the needs of the present, and thus advance our knowledge by giving us, not something new, but only the appearance of something new. But I am not going to offer even the appearance of something new. I am content, with Solomon, not to pretend to know anything new.

Instead therefore of looking toward the future which, until it comes, can have nothing reliable to teach us, let us review what the past has taught us. In mild cases of anteflexion with dysmenorrhea and sterility a few moderate dilatations by the sound have been followed by pregnancy and cure. In other cases divulsion and temporary packing of the cervix have sufficed. But we have not infrequently encountered cases in which congenital and developmental deficiencies were such that these methods only temporarily relieved the dysmenor-

* Read at the twenty-third meeting of the Southern Surgical and Gynecological Association, Dec. 13, 1910.

rhea, and the sterility not at all. In some of them the monthly crises have led to hyperplasia of the uterus and ovaries and chronic invalidism, and last, but not least, to a loss of the ovaries by operation. The uterine body is apt to be well developed, or to become so as the result of the excessive monthly hyperemia connected with its distention by the menstrual fluid and its efforts at expulsion; but in the cases of which I am speaking, the uterine ligaments remain short, the cervix and vaginal fornices poorly developed, and more or less pressure atrophy of the anterior cervical wall takes place.

A few dilatations with sounds, or divulsion and packing, unless followed by pregnancy, cannot rectify the last-mentioned conditions. Dissection of the cervix, whether by the Simpson or Sims methods, or by the Dndley or Pozzi modifications, does not rectify them. These operations often cure the dysmenorrhea and establish uterine drainage, but they mutilate and tend to throw the cervix out of function, and thus favor atrophy rather than development. The relief from suffering is frequently, although not always, immediate, yet in quite a proportion of cases is not permanent. When it is permanent the mutilation is apt to be such that the uterus cannot retain the fecundated ovum. In short, such operations benefit the surgeon rather than the patient or posterity.

What is lacking in all of these procedures is the development of the cervix and vaginal vaults. The uterine cavity is not even made straight; its lower or cervical portion is destroyed, and thus a portion of the curve eliminated. But anteflexion is normal, and the cavity of the uterus does not have to be made straight. The entire uterine cavity can be made large enough to allow of a normal outflow of the secretions without destroying the lower or cervical portion. Such a condition we sometimes observe in multiparæ with extreme anteflexion. And just as we can obtain this result temporarily by an adequate dilatation, so we can secure it permanently by keeping the cavity adequately dilated. But there is only one way of keeping it dilated and that is by developing the cervix. Pregnancy does this and takes months to do it. We can also do it, but we must also take months, many months. Goodell tried to do it by the extent of the dilatation. Gill Wylie succeeded by a persistent use of a stem after the divulsion, and Davenport still uses the stem method quite successfully. The Outerbridge stem has, I think, been successfully used, but it is not a safe instrument. Vulliet kept the uterus packed with cotton balls for variable lengths of time with success. Experience and reason have taught us that almost any foreign body that cannot be accommodated in the uterine cavity without some enlargement or stretching of that cavity, will, if kept in it, cause some development of the uterus and its cavity in size. If the foreign body project down into the cervical cavity it will act similarly on the cervix. But any foreign body left in the uterus is liable to cause abrasions and infection, and, with the supervision that can ordinarily be given, invites disaster.

Since none of these methods has found general favor, and it is no longer considered an evidence of fogvism not to perform a radical operation, I shall venture to present the claims of the method I have always employed. It consists in introducing a body large enough to overdilate the cervix, and often enough to keep it overdilated. I have treated puerile cervices on this principle and feel that I am very far within bounds in saying that if we can keep the entire cervix dilated

sufficiently for the passage through it of a number 20 (Am. scale) male urethral sound from one to two years the cervix will then continue to functionate normally. And this treatment is not so strenuous and tedious as the words "two years" would suggest.

Without the recital of individual cases I will say in a general way, that I have sometimes commenced by dilating biweekly with a small block-tin sound and have progressively dilated to about the size indicated. I have then maintained it by means of weekly dilatations for a time, then bimonthly, then monthly until the year was up. As a rule I have had the patients come back in six months or a year for a few weekly dilatations in order to be sure of permanency of results. In most cases I have preferred beginning with divulsion under general anesthesia and have then prevented contraction by the periodical passage of the sound. But the important and indispensable part of the treatment is its continuance for many months. In the event of a return of the dysmenorrhea an immediate resort to the treatment gives prompt relief. A few biweekly dilatations followed by a few monthly ones usually suffice to render the cure permanent.

The greatest objection to the treatment is that it is painful. I reduce this objection somewhat by passing the sound frequently at first, *i. e.*, by not giving the cervix time to contract too firmly between times. As the tendency to rapid, firm contraction diminishes, the dilatations can be made at longer intervals without increase of pain. I like, however, to dilate as widely each time as the patient will tolerate because the greater each dilatation and stimulation the greater the effect on development. As I have already said the tedium of the treatment is not as great as one might suppose, because, after the dilatations are a month apart, they occupy but little of the patient's time and attention, and can then be continued as long as desirable. The temporary pain of one or two treatments each month is more easily and willingly borne than the monthly dysmenorrhea, the more so as the patient knows that they will soon become less frequent. The pain ceases the moment the sound is withdrawn, and the patient may go out from the office to do her shopping.

With regard to the technic, the patient takes a copious normal salt donche before leaving home for the office. After the introduction and adjustment of a sterile bivalve speculum, the vaginal fornices and cervix are swabbed out thoroughly with a 5 per cent. solution of phenol, and the sound, after having been curved to suit the case, is dipped into the same solution immediately before being passed. Sometimes it is necessary to steady the cervix with vulsellum forceps, but the vaginal fornices are often so small that the expanded speculum puts them on the stretch and keeps the cervix from receding too far. Before removing the speculum I disinfect the uterine cavity, and introduce a dry sterile wool tampon under the cervix and leave the latter for twelve or twenty-four hours for its dilating effect on the vaginal fornices. The patient withdraws it by means of an attached thread and uses a copious normal salt vaginal douche.

I have thought it worth while to go into the details of this old, well-known treatment for the following reasons:

1. I know of no book or monograph in which its efficacy is given proper appreciation.
2. I know of none in which the necessity of such persistence in overdilatation is sufficiently emphasized.

3. I know of no method that will give better results if persisted in to the extent I have recommended.

4. I know of no cure that is as safe in the hands of the average practitioner.

5. I know of no book in which a sufficiently definite detailed technic is given.

6. The cutting methods are all objectionable and irrational in cases of arrested development.

I might add that, in patients who are hyperesthetic or intolerant of pain, this treatment can be combined with other treatment. For instance, if the patient will not allow a sound of the same size to be passed each time, and the cervix gradually contracts, divulsion under anesthesia can be performed two or three or four times at intervals of two or three or four months and the dilatation kept approximately at the same degree by the sound between times.

100 State Street.

THE IMPORTANCE OF THE AUTOPSY AND OTHER PATHOLOGIC-ANATOMIC EXAMINATIONS *

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In 1761 Giovanni Battista Morgagni (1682-1771, Professor of Anatomy in Padua) published his famous work: "De Sedibus et Causis Morborum per Anatomen Indagatis," and thereby became the real founder of human pathology. He attempted to give a very complete picture of morbid processes by carefully comparing the clinical aspects of disease with the anatomic findings in a large number of cases. In the title of his work Morgagni summed up the chief problems of pathologic anatomy and in recognition of this fact Rokitansky (1844-1875 professor of pathology in Vienna) used the title in the following somewhat modified form, for the inscription on the pathologic-anatomic institute in Vienna: "Sedibus et Causis Morborum per Anatomen Indagandis."

As the sphere of pathologic anatomy has broadened since it became an independent science seeking to solve its own problems, not only by the examination of the cadaver, but also in other ways, for instance, by the experimental method, the position of the pathologist has correspondingly increased in importance. In the autopsy room the pathologist must take due cognizance of the ever-broadening and more exacting demands of the clinician; he must endeavor at each autopsy to give the physician a satisfactory explanation, and he must examine each case most minutely with the aid of modern methods of histology and bacteriology. By means of such elucidation, he will materially assist the clinician, and he will also develop new ideas in his own scientific field. In this way he can advance toward the goal of all the medical sciences, namely, the relief of human suffering.

Therefore there can be no doubt of the need of pathologic investigation. All the medical schools and hospitals are wise in striving for a large amount of autopsy material in order that the students may be instructed, that physicians may gain experience, and that the interests of science may be advanced. Naturally the autopsies must all be done with the strictest adherence

to the principles of humanity, with careful consideration for the wishes of the relatives, and with the greatest precautions to avoid any mutilation of the body. To this end pathology has at its disposal a well-developed technic which is constantly being improved.

In order to give a graphic picture of the importance of post-mortem examinations, I should like to select a series of cases from the eighty-seven autopsies performed at the Pathological Institute in Strasburg during the month of June, 1910, and to discuss them somewhat in detail:

ILLUSTRATIVE CASES: CLINICAL AND PATHOLOGIC-ANATOMIC DIAGNOSIS

Eleven cases of fatal nutritional disturbances in infants between the ages of 2 and 6 months: six cases of enteritis; five cases of general atrophy.

Two cases of status lymphaticus:

Patient, male, aged 16. Otitis media with meningitis and chronic general tuberculosis. Death while under chloroform narcosis at the beginning of the operation.

Patient, female, aged 27. Ruptured tubal pregnancy in second month. Salpingectomy seven hours after rupture. Death three and one-half hours later. Moderate anemia.

Four cases of fatal embolism of the pulmonary artery:

Patient, female, aged 38. Death from thrombosis of the right femoral vein, four days after salpingectomy for gonorrheal salpingitis.

Patient, female, aged 53. Death from thrombosis of the ovarian vein of the left side, six days after double ovariectomy for carcinoma.

Patient, female, aged 58. Death from thrombosis of the left external saphenous vein, six days after operation for femoral hernia.

Patient, female, aged 63. Death from thrombosis of the right external saphenous vein, twenty-two days after encephalomalacia.

Two cases of auto-intoxication from incarcerated hernia:

Patient, male, aged 73. Incarcerated inguinal hernia for five days. Death one day after operation for hernia. Epithelial necrosis of the kidneys.

Patient, female, aged 58. Incarcerated femoral hernia for four days. Death three days after operation for hernia.

Two cases of latent septicemia:

Patient, female, aged 40. Clinical diagnosis: ileus from carcinoma of the sigmoid flexure. Pathologic-anatomic diagnosis: streptomyotic peritonitis caused by suppurative salpingitis.

Patient, female, aged 56. Clinical diagnosis: chloroform narcosis after hysterectomy for ulcerating carcinoma of the cervix. Death one day later. Pathologic-anatomic diagnosis: streptomyotic septicemia.

Two cases of birth injuries:

Fetus of 9 months. Breech extraction. Compression of skull and rupture of the spinal column between the fifth and sixth dorsal vertebrae.

Patient, female, aged 25. Transverse position. Laceration of the vagina following attempted version outside of the hospital.

One case of criminal abortion:

Patient, female, aged 24. Pyemia after abortion. Laceration of the vagina, posterior labium of the external os and of the cervix.

One case of injury due to enema:

Patient, female, aged 38. Peritonitis from perforation of the rectum.

Two cases of latent carcinoma of the stomach:

Patient, male, aged 43. Clinical diagnosis: carcinoma of the sigmoid flexure. Pathologic-anatomic diagnosis: carcinoma of the pylorus and secondary carcinoma of the peritoneum, with stricture of the sigmoid and of the descending colon.

Patient, female, aged 27. Clinical diagnosis: carcinoma of the ovaries. Pathologic-anatomic diagnosis: carcinoma of

* Address delivered before the Harvey Society, New York, October 15, 1910.

the posterior gastric wall and secondary carcinoma of the ovaries.

One case of latent pericarditis:

Patient, female, aged 71. Clinical diagnosis: lobular pneumonia. Pathologic-anatomic diagnosis: lobular pneumonia, tuberculous pericarditis with effusion, latent tuberculosis of the apex of the lung.

One case of late recurrence of carcinoma:

Patient, male, aged 47. Recurrence of carcinoma in the cicatrix four years after excision of the carcinomatous rectum.

One case of puerperal eclampsia:

Patient, female, aged 37. Multiple necrosis of the liver.

One case of Hodgkin's disease:

Patient, male, aged 27. Swelling of the left lymphatic glands and left tonsil. Nodes in the spleen, lungs and pleura. (The same diagnosis was made nine months previously from an extirpated axillary gland.)

One case of nephrolithiasis:

Patient, female, aged 67. Right hydronephrosis and uratic calculi. Left uratic nephrolithiasis. (Calculi in left kidney stained with methylene blue.)

COMMENT

The cases of nutritional disturbances in infants confirm the frequently expressed opinion that serious digestive disturbances occur without even microscopic changes in the intestines, which depend entirely on chemical alterations in the intestinal contents. These chemical changes are being carefully studied of late by pediatricists and thereby a real basis for a correct therapy is being established.

The cases of status lymphaticus show the great significance of this constitutional anomaly. Patients of this class stand chloroform anesthesia and loss of blood very poorly.

The four cases of fatal embolism of the pulmonary artery are good illustrations of the frequency of this lesion, which so often interferes with the success of operations. Such an embolism is not a rare occurrence, and it is easy to realize that surgeons take every precaution to avoid such a complication. This condition cannot always be diagnosed clinically with certainty, and therefore the autopsy is necessary to confirm the diagnosis.

The cases of incarcerated hernia serve to show how much danger attends the retention of the intestinal contents. Very commonly this decomposition of the intestinal contents causes an auto-intoxication to which the patients succumb in spite of a successfully performed herniotomy. In order to prove this point of view, I have but to refer to the first of the two cases in which the microscope showed diffuse necrosis of the renal epithelium. In other cases, on the contrary, the necrosis of the liver parenchyma is of special interest.

The two cases of septicemia emphasize the importance of bacteriologic examinations at the post-mortem table. In the first case, no positive clinical diagnosis could be made. The autopsy showed a streptococcal peritonitis due to a purulent streptococcal salpingitis, which in turn, judging from the nature of the bacteria, was of puerperal origin. In the second case, streptococci were cultivated from the heart's blood and from the various tissues of the body, and the case therefore had to be diagnosed as a streptococcal septicemia. Later, on talking the matter over, the clinician thought, and rightly, I believe, that the infection was due to the deep ulceration of the carcinoma of the cervix, which had been neglected.

The cases of birth injuries are of great importance because they can easily result in severe injury to mother

and child. In the first case, the delivery was certainly difficult, and in spite of the fact that it was performed by a very competent obstetrician, it resulted in a fracture of the spinal column. In the second case, a physician not in the hospital had made several attempts to correct a complex presentation by means of version and had thereby lacerated the vagina so severely that there remained only a strip of its anterior wall behind the urethra. The patient was subsequently brought to the hospital and died of acute anemia.

The case of criminal abortion shows the typical lesions which we find in this class of cases. Frequently there occur punctured wounds of the posterior wall of the vagina, perforations of the cul-de-sac of Douglas, injuries of the posterior lip of the cervix and of the adjoining portion of the uterus. As these injuries are for the most part done with unclean instruments, the women so treated are very often victims of fatal puerperal infections.

The case of injury due to enema, which happened to a 38-year-old woman outside of the hospital, may serve as a warning. Pathologic anatomy teaches that such injuries from enemas are due to the use of hard canulas, and are, especially in children, much more frequent than is generally believed.

The cases of latent carcinoma of the stomach are very important from a diagnostic point of view. In the first case, the secondary carcinoma of the peritoneum, which had invaded the sigmoid flexure and caused a stricture, was diagnosed as a primary lesion, and in the second case we were dealing with a condition frequently described of late, a primary carcinoma of the stomach with typical secondary implantation lesions in both ovaries in which the secondary metastases had been regarded as primary lesions.

In the same way, the case of latent pericarditis demonstrates the difficulty of many a clinical diagnosis.

The case of recurrent carcinoma in the scar four years after extirpation of the rectum for carcinoma, is instructive because this recurrence was a very late one. We now have, however, definite knowledge of much later relapses.

The case of puerperal eclampsia was typical. It showed perfectly the characteristic areas of necrosis and hemorrhage of the liver, which were first described by Schmorl.

In the case of Hodgkin's disease there was found the well-known histologic condition of granulation tissue with fibrous connective tissue and polynuclear giant-cells in all the diseased areas; these lesions had also been found in the axillary glands, which had previously been extirpated for diagnostic purposes.

The last case had the significance of an experiment. The 67-year-old woman had been given methylene blue on account of symptoms of cystitis. At the autopsy, the uratic calculi in the left kidney, which secreted urine, were stained with methylene blue, whereas those in the right kidney, which had ceased to functionate as a result of atrophy following hydronephrosis, were entirely free from any stain.

These cases, selected from the records of one month, well demonstrate the importance of the careful routine autopsy and indicate how much the student and physician can learn both from a scientific aspect and from the point of view of the welfare of the patient. Every autopsy adds to our store of knowledge and justifies the old adage which we often see inscribed in the autopsy room: "Hic est locus ubi mors gaudet succurrere vitae."

A pathologic institute can be of service to the physician and of benefit to the sick in other ways. I refer to the microscopic diagnosis of tissue removed by the surgeon. I may here mention the results of the microscopic examination of enrettings from the uterus. How often the examination does not determine whether we are dealing with an abortion, an endometritis or a carcinoma!

Furthermore, I may refer to the microscopic examinations for carcinoma of excised tissue, a recourse which so often saves the patient from the sacrifice of important organs, e. g., the tongue, the larynx, the penis, the cervix. On the other hand, if the carcinoma or other neoplasm is diagnosed, it may lead to an immediate life-saving operation. Finally, I wish to emphasize the importance of a careful examination of excised tumors, for this not infrequently, to the gratification of the pathologist, demonstrates that a condition which has been considered malign is in reality benign and permits of a favorable prognosis. These investigations are indeed very difficult and the pathologist cannot be too careful in his reports; otherwise there is danger that he will bring undeserved discredit on the value of diagnoses made from excised tissue. He must never hesitate to acknowledge that he is unable to render a definite diagnosis. Then he will rightly fulfil his duty and the clinician will appreciate the weight of his opinions.

Thus it is seen how important is the function of the pathologist in performing autopsies, and how his calling is not only didactic but humanitarian. His work, therefore, deserves support and encouragement from all sides, and especially from the laity. The public must be made to appreciate to an ever-increasing extent the importance of pathologic anatomy. That this hope may soon be realized is my earnest wish, especially for the American universities.

A METHOD OF TREATING THE PROSTATIC UTRICLE *

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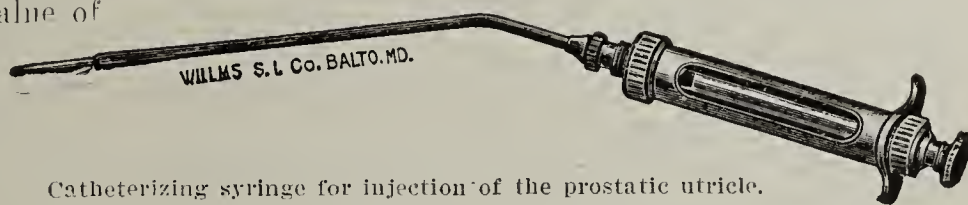
Urethroscopy of the posterior urethra has been comparatively slow in developing, and not until the last few years has sufficient attention been directed to this important field. One result of this increased study has been the recognition of the important part which diseases of the verumontanum play in the production of severe and often distressing symptoms, generally classed as prostatic neuroses. In the milder cases remedial results were obtained by massage of the prostate, dilatations, instillations, etc. In others only temporary relief could be obtained by these measures, while in the aggravated cases frequently no amelioration was obtained.

Wossidlo was the first to call attention to the manifold symptoms which resulted from inflamed conditions of the verumontanum. He found that various symptoms usually ascribed to chronic prostatitis were not infrequently encountered in individuals in whom no prostatitis could be demonstrated. Sexual disorders such as precocious ejaculation, painful ejaculation, frequent seminal emissions, neuralgic pains in the peri-

neum, groin and testicles, suprapubic region, sciatic pains, backache, etc., were associated commonly with the pathologic condition of the verumontanum. In the milder cases he recommended painting with tincture of iodine; in the severe cases he employed 10 to 20 per cent. silver nitrate or even a caustic stick, making direct applications through the urethroscope.

Young, for a considerable time, has practiced curettage of the verumontanum, following this by direct application of a pure stick of nitrate of silver.

The edematous condition of the verumontanum in many cases, with a normal appearance of the mucous membrane covering it, and the frequency with which one finds the orifice of the utricle intensely red and congested, suggested that in many of these cases the seat of the trouble lay in the utricle itself. In normal cases the verumontanum is seen through the open urethroscope tube as a small, rather rounded, elevation; the mucous membrane covering it is distinctly pale and in marked contrast to the rather deep red of the surrounding urethral mucosa. In the midline and directly



Catheterizing syringe for injection of the prostatic utricle.

anterior, in the majority of the cases, can be seen the orifice of the prostatic utricle. The shape and size of the orifice varies; in some it appears as a minute, rounded depression, in others the orifice is a distinct slit, occasionally several millimeters in length. The ejaculatory ducts are usually not visible, but are situated laterally and generally lower on the wall of the verumontanum than the opening of the utricle. The cavity of the utricle varies some in size and shape. In most cases it is 0.5 to 1 cm. long. It may, however, be several centimeters long and extend up beneath the urethra as far as the bladder. I have found that the capacity of the utricle varies from 5 to 10 minims in the average case, but in an exceptional case it may be as much as 30 minims.

The utricle is to be considered as a rudimentary organ representing the terminal portion of the Müllerian ducts, and for this reason it has been called the male uterus, although it is more correctly the analogue of the vagina.

It seems very probable that the utricle, on account of its size, can readily be the lurking-place for infection and as a result of the diseased condition in this cavity give rise to the pathologic picture so frequently seen in the diseased verumontanum. Although the literature is replete with references to the inflamed appearance of the utricular orifice, and numerous observations of pus exuding from the utricle have been made, no practical method of treating this sinus has, so far as I am aware, been suggested. The ease with which the orifice of the utricle can be observed in most cases, and the considerable size of the outlet, suggested the possibility of catheterizing through a straight urethroscopic tube and making injections directly into the cavity. By means of a syringe, shown in the figure, it has been found not only feasible, but surprisingly simple, to make injections directly into the utricular cavity.

Technic: A straight Number 24 (French) urethroscopic tube with an external light is passed into the prostatic urethra

* From the genito-urinary clinic of the Johns Hopkins Hospital.

beyond the verumontanum. Introduction of the straight tube to this point is practically always readily performed without the production of any trauma. The introduction of the tube beyond this point in occasional cases is accomplished with some difficulty, owing to the rather acute ascent of the posterior part of the prostatic urethra to the vesical orifice. When the tube, after passing some distance through the prostatic urethra, encounters resistance, one is practically always beyond the verumontanum. On moving the obturator one readily recognizes from the Y-shape of the urethral orifice that the end of the tube lies towards the vesical end of the verumontanum. The tube is then gradually withdrawn until the readily recognized verumontanum bobs into view. The tube is withdrawn until the anterior face of the verumontanum projects into the open portion of the tube. The mucous membrane is carefully and gently sponged with cotton swabs. The above position of the tube causes a tilting forward of the verumontanum so that the utricular orifice, which lies rather on the upper surface, comes directly facing the open end of the tube. The tip of the syringe can now be readily introduced into the orifice of the utricle, the contents of the utricle aspirated for microscopic examination, and injection readily made into its cavity. Not infrequently, owing to the edematous condition of the mucous membrane, the utricular orifice is not visible, but with gentle probing with the tip of the syringe in the middle towards the upper surface one will rarely have difficulty in accomplishing catheterization.

Silver nitrate has been the drug employed almost entirely, and it seems to give the most satisfactory results. While one can employ for external applications to the verumontanum silver nitrate in very concentrated solution, or the actual caustic, without the production, as a rule, of severe reactions, these strong injections are not well tolerated when given into the utricle. In patients with numerous neuralgic pains, the result of utricular disease, it is well to begin with injections of 1 per cent. and gradually increase the strength to 2 or 3 per cent. The employment of too strong a solution may cause intense pain lasting over several days. The injection should be given slowly, as forcible distention may be quite painful.

The reaction produced by too strong injections frequently reproduces in a striking manner the different neuralgic pains of which the patient has complained. When 1 to 3 per cent. solutions of silver nitrate are employed the injections may be repeated at intervals of from five to seven days, but when stronger injections are employed they should not be repeated more frequently than every two to three weeks.

Painful ejaculation, according to Wossidlo, is due to a sclerosed condition of the lower end of the ejaculatory ducts leading to more or less contracture. The forceful emptying of the seminal fluid through these narrowed inflamed ducts produces the pain which occurs, and in many cases the pain is so severe that the patient is forced to refrain from coitus. It seems probable, however, on account of the frequency with which one or both of the ejaculatory ducts open on the floor of the prostatic utricle, that when the seminal fluid is thrown into this cavity the sudden distention of the inflamed utricular wall may produce the sudden sharp pain occurring at the moment of ejaculation.

Hemospermia, which is seen in the absence of disease of the seminal vesicles, may result from congestion of the utricular wall. In one case of hemospermia aspiration of the utricular contents showed a considerable amount of bloody fluid.

The benefits ascribed to irrigation and injection of the vasa deferentia by some authors are probably explained in many cases by the flushing out of the prostatic utricle, which occurs owing to the fact of the ejaculatory ducts opening so commonly on the floor of the utricle. The good effects in these cases cannot result from the washing out of the seminal vesicles, as it is

questionable whether the fluid injected into the vas finds its way to any extent into the cavity of the seminal vesicles, owing to their anatomic structure.

Dribbling of urine following the act of urination I have seen in many cases without any explainable cause. No stricture, sclerosed condition of the posterior urethra, pathologic conditions of the prostate or spinal cord trouble, could be demonstrated. In many cases observed, the dribbling has been a great annoyance to the patient and rebellious in responding to the usual forms of treatment. In four such cases in whom no improvement was obtained, as a result of dilatations, electric applications, massage, etc., the dribbling has been entirely relieved by applications to the verumontanum and utricule injections. In two of these cases only slight improvement followed treatment of the verumontanum, but they responded rapidly and promptly to treatment of the utricle. The explanation of this does not seem clear. Infection of the utricle not infrequently is the cause of persistent recurring posterior urethritis. One case of persistent posterior urethritis, due to the colon bacillus, which had resisted during several years all efforts to dislodge the infection, on careful urethroscopy of the posterior urethra showed pus oozing from the prostatic utricle. Injections of 1 to 2 per cent. silver nitrate into the utricle was very soon followed by a complete disappearance of the infection. Another patient with persistent posterior gonorrheal urethritis, who had been under treatment many months, was finally cured by the same procedure. Infection in the prostatic utricle is probably the cause of many cases resistant to ordinary forms of treatment. In some cases, particularly when the orifice of the utricle is small, it is well to snip out a wedge-shaped piece of the utricular roof, thus affording better drainage. This can be done by means of scissors devised by Young for excision of portions of the verumontanum.

AN IMPROVED GRAVITY APPARATUS FOR THE INTRAVENOUS INJECTION OF SALVARSAN

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My improved gravity apparatus for the intravenous injection of salvarsan seems to overcome and solve many of the difficulties which, as reports have shown, are connected with this method. The aim is to avoid getting any of the solution into the subcutaneous tissues before the needle enters the lumen of the vein. The several syringes and forms of air-pressure apparatus already on the market have proved far from satisfactory, and leave much to be desired in the way of a perfect technic. My apparatus is portable, can be disconnected in all parts of the stand, and by a thumb-screw allows of lowering and elevating the containers to any desired level, so as to control the rapidity of the flow of the solution into the vein. No solution which is not absolutely clear and sterile should be introduced into a vein. Clearness is to be obtained only by filtration through sterile filter-paper. In my experience very commonly the salvarsan solution contains some foreign flocculent particles; and there is also danger of small particles of glass being chipped off, if glass beads are used in the mixing cylinder; even if a mortar and pestle are used to triturate the salvarsan, such flocculency commonly exists.

Two graduated glass containers of 250 c.c. capacity are used. Into one is poured 150 to 200 c.c. of sterile salvarsan solution. The other is filled with a like volume of sterile saline solution (made with sterile distilled water and chemically pure sodium chlorid).

The saline solution is allowed to flow out of the needle so as to expel all air from the tube. The stop-cock is now reversed, allowing the salvarsan solution to flow out of the needle, thereby expelling all air from its respective tubing. The stop-cock is now reversed to its former position, until the saline solution is running in a slow even stream from the needle. The desired site of puncture is selected on the arm or at the elbow, and the needle is gently pushed or thrust through the skin into the vein. Meanwhile the saline solution is continuously running from it. The needle is held at about an angle of 10 to 15 degrees to the skin surface, depending on the prominence and caliber of the vein. Care must be exercised not to push the needle through both walls of the vein. This can be avoided by not introducing too long a surface of the needle into the tissues.

The patient previously has his arm carefully cleansed, a ligature in the form of an ordinary soft rubber catheter or tubing is tied around the middle of the arm, above the selected site of puncture, and the patient is requested to tighten the fist, to make the superficial veins more prominent.

As soon as the needle has entered the vein, the rubber ligature is released by an assistant, the stop-cock of the needle is reversed, and the salvarsan solution flows through the needle into the vein. Hence, there is no danger of any salvarsan solution getting into the subcutaneous tissues. No injection

should be given intravenously in less than about ten minutes, and the solution must be quite warm when poured into the container so as to allow for its cooling when poured into the apparatus; when it enters the vein, the solution should be about the temperature of the blood. An ideal intravenous injection is painless.

The needle will not produce cramping of the hand of the operator, as the thumb and middle fingers pass through the rings, and the index-finger rests on the corrugated plate on its superior surface, thus affording firm support and preventing the needle from changing position after it has entered the vein, which may occur if the patient coughs or sneezes. It affords a firm and comfortable hold, even if the operator wears rubber gloves, as I have invariably done in all my work in this line.

Another advantage of this needle is that the stop-cock is readily adjusted. While the needle is being introduced into the vein, blood must not be allowed to flow out of

the vein and enter the tube containing the salvarsan solution. Blood entering the needle at any time except when the saline solution is constantly flowing out of the needle would have a tendency to clot in it quickly and block its lumen.

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THE SANITARY INSPECTION OF OYSTER-GROUNDS IN THE UNITED STATES*

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The oyster industry forms a very important part of the marine fisheries of the United States. The market value of the products of the fisheries of this country (exclusive of Alaska) for the year 1908 was estimated by the Bureau of the Census¹ at \$54,030,630. The income derived from the oyster trade alone, for the same year, amounted to \$15,713,000, or nearly one-third the value of the total fishery products of the country.

The American oyster, *Ostrea virginia*, is found along the entire Atlantic coast from Maine to Texas. Two local varieties of oysters are also found on the Pacific coast. But the center of the oyster trade in America is confined to the Atlantic and Gulf states. The value of the product from these latter states amounted to \$15,019,360 for 1908, while the output from the Pacific states for the same period marketed \$695,640. Twenty-one states are interested in oyster production to a greater or less extent, the larger producers being Maryland, Virginia, Connecticut, Louisiana, New York and New Jersey. In 1908, Maryland marketed 6,231,967 bushels of oysters; Virginia, 5,075,014 bushels; Connecticut, 3,948,070 bushels; Louisiana, 3,650,456 bushels; and New Jersey and New York about two and a half million bushels each. South Carolina, Georgia, Rhode Island, Mississippi and Florida produced over 1,000,000 bushels each. The ten other oyster-growing states, with the exception of Maine and Oregon, marketed over 100,000 bushels each. In 1908 the oyster crop of the United States amounted to 33,329,925 bushels in market and seed oysters.

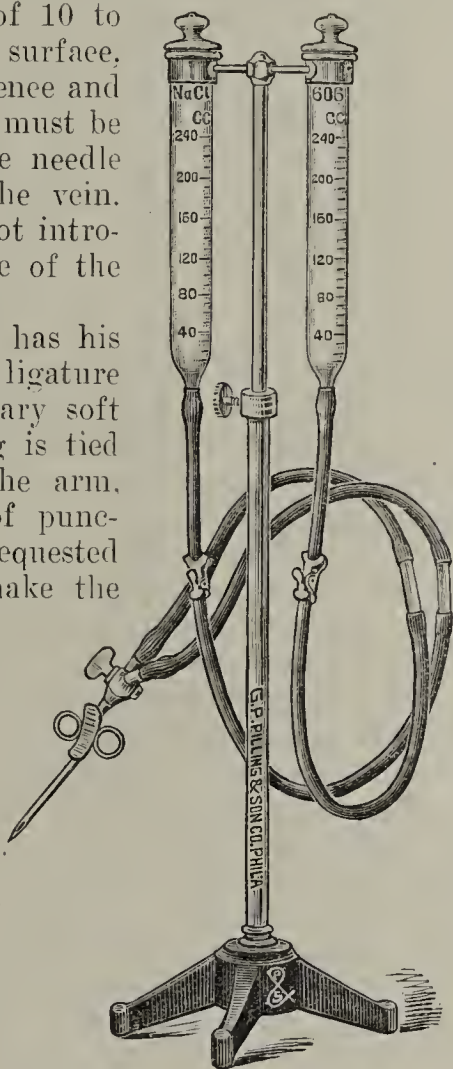
No very recent statistics on the extent of the oyster industry in other countries than the United States have been obtained, and in this connection reference is made to the data published by G. W. Fuller,² in 1905. This writer estimates the annual production of the United States at 28,138,434 bushels; of Great Britain at 2,760,000 bushels; of France at 2,000,000 bushels; of Holland at 70,000 bushels; and of the other oyster-producing countries at 610,580 bushels. From the above figures it would appear that the United States is by far the largest producer, and supplies the market annually with more than five times as many of these shell-fish as all the other oyster-producing countries combined. But, as is pointed out by Fuller, "these figures are not strictly comparable, as they refer in various instances to different years, beginning about 1890, and extending down to the present time (1905). But they serve to convey a general impression as to the relative extent of this important industry."

* From the Department of Bacteriology and Hygiene, University of Wisconsin.

* Read before the Second International Congress of Alimentary Hygiene and of the Rational Alimentation of Man, Brussels, October, 1910.

1. Preliminary Report of the Bureau of the Census on the Fisheries of the U. S. for the year ending Dec. 31, 1908.

2. Fuller, G. W.: Jour. Franklin Inst., August, 1905.



Improved gravity apparatus for intravenous injection of salvarsan.

A considerable proportion of the oyster-grounds in the United States, especially in the southern part of the country, is found in open water, quite remote from any possible source of sewage pollution. The sanitary condition of these grounds is, of course, above suspicion. A large number of oyster-beds, however, are located in inland tidal waters, many of them in the vicinity of large cities and towns which discharge their sewage directly into tidal water or into streams flowing into tidal water. Thus, oyster-beds exposed to gross sewage pollution are found in Boston Harbor, in the Providence River, in New York and Long Island waters, in Chesapeake Bay and numerous other places famous for the quality of their oysters. The federal government has no jurisdiction over these areas and under the existing laws, cannot control the pollution of tidal waters or prevent the taking of oysters from polluted localities. Very recently, however, the government has taken a step in the right direction by prohibiting the sale of polluted shell-fish in interstate commerce.³ This law went into effect May 1, 1910, and is in substance as follows:

It is unlawful to ship or sell in interstate commerce oysters or other shell-fish which have been taken from insanitary or polluted beds, or which have become polluted by packing under insanitary conditions or by the use of unclean receptacles.

A second federal act,⁴ in effect June 4, 1910, prohibits the shipment or sale of oysters "floated" in polluted waters. By the enforcement of these two measures the government hopes to control the shipment and sale in interstate commerce of polluted shell-fish, but places no restrictions on the sale of such shell-fish within the states in which they are grown.

The ultimate control of the oyster products in the United States, however, rests with the different state boards of health and shell-fish commissions, which should be vested with proper authority by their respective legislatures to act in cases of shell-fish pollution. Very carefully formulated and well-enforced laws protecting the natural oyster grounds and cultivated beds and regulating the sale or lease of land for oyster culture have been in effect in many of the principal oyster-growing states for some time. But it is only within the last few years that any measures have been taken to regulate the catch of oysters from polluted areas, or to prevent the sale of infected shell-fish in the local markets. Nearly all the more important oyster-growing states have caused their shell-fish grounds to be inspected by various authorities, but in most instances these inspections have been in the nature of hydrographic rather than sanitary surveys.

In 1901 the legislature of Massachusetts passed acts directing the State Board of Health to make annual examinations of the conditions about the main sewer outlets of cities and towns and to prohibit the sale of oysters and other shell-fish taken from polluted areas. The board was also empowered to examine all complaints relative to the contamination of tidal waters, and if necessary to fix the boundaries of such pollution, and prohibit the taking of shell-fish from areas thus defined. The Board of Health has made several extensive surveys of the productive localities, covering practically all of the shell-fish grounds of the state. These surveys include careful inspections of the shell-fish areas and the bacteriologic examination of several thousand oysters and many samples of sea-water. As a

result of these investigations⁵ approximately 1,500 acres of shell-fish grounds in Boston Harbor and 700 acres in New Bedford Harbor have been condemned, and the taking of oysters and other shell-fish from these localities prohibited by the fish and game commission acting under the direction of the board of health. A number of convictions have followed the violation of the above restrictions, and fines prescribed by law imposed. The situation in Massachusetts has been somewhat complicated by the passage of a bill in 1907, "permitting the taking of polluted shell-fish for bait on securing permits from the board of health, and providing heavy penalties for both buying and selling. As a matter of fact, it is well-nigh impossible to enforce this law . . . and complete prevention from the taking of such shell-fish is the only method by which the public health can be properly safeguarded."

A careful and thorough investigation of the whole problem of shell-fish pollution has been carried out by the Massachusetts Health Department during the last ten years, with the result that much of the very best work in this country along these lines has been done in the bacteriologic laboratories of the Lawrence Experiment Station. Up to the present year Massachusetts has been the only state to recognize the importance of this question sufficiently to legislate against the taking of oysters and other shell-fish from badly polluted areas, and to enforce its legislation.

In 1908 the State Board of Health of New York made an extensive survey of the more important oyster-grounds of the state. The outlets of sewers and all other possible sources of pollution as far as the oyster-beds were concerned were located; the effect of tides, currents and winds were studied in so far as the time at the disposal of the department permitted; and bacteriologic analyses of oysters and water samples from various localities along the New York and Long Island coast were made. The time at the disposal of the board for these investigations was somewhat limited, and⁶ "while the results of the field and laboratory work are in close harmony, the studies can only be considered as preliminary, and as such the department is not warranted in passing final judgment on the results, for the purpose of administrative action." Yet a large percentage of the oysters examined bacteriologically would be considered polluted, if judged by the usual standards, on the strength of the figures published in the report of the board. The department of health has, however, been endeavoring to control the evident pollution of tidal waters under its jurisdiction and its "policy since 1905 has been that further and unrestricted pollution of the waters of the state should cease, and in so far as the department has the power, the existing discharge of raw and ineffectively treated sewage should as rapidly as possible be prohibited."

The sanitary aspect of the oyster industry in Virginia was investigated in 1909 by the state board of health in conjunction with the state board of fisheries. This investigation included a careful sanitary survey of all the oyster-growing districts of the state with the bacteriologic examination of representative samples of oysters and sea-water from all localities; also an examination of the method of handling oysters for shipment, shucking and packing, and of the alleged practice of "floating" or "drinking" oysters for the purpose of increasing the bulk of the product. The results of these

3. U. S. Dept. of Agri., Food Insp., Doc. 110, October, 1909.

4. U. S. Dept. of Agri., Food Insp. Doc. No. 121, May, 1910.

5. Report Fish and Game Commission on Mollusk Fisheries of Mass., 1909.

6. Twenty-Ninth Ann. Rep. N. Y. Dept. Health, 1908, p. 833.

investigations⁷ show that the majority of the oyster-grounds of Virginia are "perfectly safe from a sanitary point of view. The streams condemned are small and constitute only a small percentage of the oyster-grounds of the state. Steps have already been taken to prevent the sale of oysters from these areas, and their sale will not be permitted in the future under any circumstances." In addition to the general survey of the oyster-grounds of the state, frequent inspections of the suspected localities are made by the department of health and the dairy and food commission, and planting in areas found to be polluted is prohibited by the local authorities acting on the advice of the inspecting boards.⁸ Certificates of inspection are also issued by the department of health to approved grounds, stating that the grounds in question have been inspected by the department and found free from dangerous pollution; and that oysters taken from these grounds are safe for human consumption. The department of health has been very active during the past few years in controlling the hygienic condition of the oyster-grounds of the state, and has the problem well in hand. At the present time the sale of oysters taken from any territory known to be polluted is prohibited by law.

An act of the New Jersey legislature, in effect April 6, 1910, directs the board of health⁹ "annually or oftener if the board considers it necessary, to inspect the oyster and clam beds within the state for the purpose of ascertaining the sanitary condition of the same." Official records of each inspection are kept and certificates setting forth the results of inspection are issued to the parties concerned. The taking of shell-fish from areas condemned by the board of health, with the intent to sell for food, is an offense punishable by a fine of \$100.

The Dairy and Food Commission of Texas¹⁰ makes annual inspection of the oyster-beds along the Texas coast, but there are no specific regulations applying to cases of shell-fish pollution.¹¹ The Texas pure food and drug law, passed by the legislature March 20, 1909, which is in the main a copy of the federal act, might possibly be construed to regulate the sanitary condition of the oyster industry of the state, but contains no specific reference to polluted oysters.

A sanitary survey of the oyster-grounds of Rhode Island was made by Fuller¹² in 1901-02. These investigations showed that the beds in the Providence River and upper portion of Narragansett Bay were badly polluted with sewage. There are, however, no state laws prohibiting the planting or dredging of oysters from polluted sources or their sale for food.

The surveys of the oyster-grounds which have been made in other states were mainly in charge of hydrographic engineers or biologists studying the problem of oyster-culture, so that little or nothing in the nature of systematic sanitary inspections has been accomplished. Various state laboratories have been called on from time to time to examine bacteriologically samples of oysters and other shell-fish for suspected sewage pollution, but up to the present year no systematic sanitary surveys of oyster-grounds, including the bacteriologic examination of oysters and other samples have been made except in

the waters of Massachusetts, New York, Virginia and Rhode Island.

One of the most perplexing problems which has been brought up by the investigation of the pollution of shell-fish by sewage is the determination of accurate or safe standards of pollution. At the present time several state boards of health are independently making special efforts to formulate a series of tests by the application of which the analyst can determine with a fair degree of accuracy the amount of pollution of shell-fish and water and report correctly whether or not oysters taken from any given locality are safe for human consumption. In the main, these tests consist in bacteriologic analyses of samples of oysters and water from suspected grounds, with the purpose of determining the presence or absence of the colon bacillus, the characteristic organism of sewage.

Early investigations have shown that this organism is not normally found in unpolluted sea water or in shell-fish taken from unpolluted sources. In their report on the investigation of the pollution of shell-fish by sewage, the Massachusetts Board of Health¹³ states that "the evidence gathered in this work is fairly conclusive that *B. coli communis* and the streptococcus are not normal inhabitants of the shell water or body of either oysters or clams, and that their presence there must be considered proof of pollution." At a later date, Gage¹⁴ states that "*B. coli* and sewage streptococci are absent or present in only a small proportion of samples [of shell-fish] collected from sources remote from pollution. On the other hand, the test organisms are always present in a majority of samples from sources whose pollution is evident."

Fuller¹² in his study of the oyster-beds of Rhode Island, found that *B. coli* was not normally present in oysters or sea-water collected from localities remote from sewage pollution.

The results of the bacteriologic analyses of market oysters obtained by the Connecticut Board of Health are similar to the above.

After the examination of a considerable number of oysters from presumably unpolluted sources, the Virginia Health Department⁷ concludes "that the colon bacillus is not found as a normal inhabitant of the oyster either of the natural fluid of the shell or of the intestine."

The investigations of Hewlett,¹⁵ Klein¹⁶ and Houston,¹⁷ point toward the same general conclusions. Dr. Houston says, "As regards deep-sea oysters, results are not quite decisive, but point strongly to the conclusion that not only typical *B. coli* but as well coli-like microbes are absent from them."

Evidently the weight of opinion leans toward the view that the colon bacillus is not found in shell-fish under normal conditions, and that mollusks containing this organism must be contaminated. But it is obvious that longshore oyster-grounds, particularly those in the neighborhood of cities and towns, are rarely if ever free from sewage pollution to some extent, so that in the majority of cases in which the sanitary condition of oyster-beds is under investigation, the question of standards of pollution becomes rather a problem of determining the amount of pollution permissible without danger to health, than one of determining merely the presence

7. Bull. Va. Dept. Health, May, 1909, p. 308.

8. Communication from the Asst. Health Commr., Va., June 17, 1910.

9. Chap. 97, Laws of New Jersey, session of 1910.

10. Communication from Dairy and Food Commission of Texas, June 20, 1910.

11. Texas Pure Food and Drug Law, House Bill 28, March 20, 1909.

12. Fuller, C. A.: Appendix, Rep. U. S. Com. of Fisheries, 1904, p. 198.

13. Rep. Mass. State Board of Health, 1905, p. 449.

14. Gage, S. De M.: General Infectious Diseases, January, 1910, p. 78.

15. Brit. Med. Jour., 1903, p. 1082.

16. Fourth Rep. Royal Comm. on Sewage Disposal, 1904, II, 61.

17. Fourth Rep. Royal. Comm. on Sewage Disposal, 1904, III.

or absence of characteristic sewage bacteria in oysters and the water in which they grow.

Fuller¹² has regarded as polluted all shell-fish which were found to contain *B. coli*, but in the work in Rhode Island in 1901, he did not attempt to fix an arbitrary standard for the condemnation of oyster-grounds, beyond the determination of the presence or absence of sewage pollution as indicated by the bacteriologic analysis of these shell-fish for *B. coli*.

Conn¹⁸ has regarded "all oysters contaminated which have shown the presence of *B. coli*." This "work has been on market oysters and not on oyster-beds" so that "no rule as to the proportion of contaminated oysters necessary to condemn an oyster-bed has been formulated" by him.

The New York Board of Health¹⁹ did "not attempt to fix standards of pollution" deduced from their own experiments, merely "tabulating their results on the basis of the relative conditions as found" and using the "assumed standards" of other bacteriologists.

The federal government³ has recognized the possibility of fixing a standard of shell-fish pollution by the food inspection decision of Oct. 14, 1909, in which it is stated that "the pollution of oysters with sewage can be readily detected by bacteriologic examination."

The Massachusetts State Board of Health has made a more thorough and systematic investigation of the whole problem of shell-fish pollution than the other health departments in this country, and for this reason the opinion of the Massachusetts authorities on this question is frequently sought by outside laboratories. And up to the present time standards for judging the sanitary condition of shell-fish which have been worked out by the Massachusetts board have been used in many of the bacteriologic laboratories in the United States. The position of the Massachusetts Department of Health on this question has been stated by Gage¹⁴ as follows:

With a sufficient number of samples the absence of *B. coli* or of positive fermentations followed by an overgrowth of streptococcus can be safely taken to indicate freedom from pollution, and when ten individuals are tested, a negative test in eight out of ten or 80 per cent. of the samples, can be assumed to be an indication of reasonable safety. Under the same conditions, a positive test in 50 per cent. or more of the samples must indicate pollution of a more or less dangerous character. Between these extremes, the interpretation is a question of individual judgment for which no hard and fast rules can be made.

In these tests the water within the shells and the intestinal content of suspected specimens are tested by the usual methods of water analysis.

The above statements unquestionably represent the fairest grounds that can be taken on this important question with the present knowledge of the subject. The examination of single specimens of shell-fish can have no more value than the bacteriologic analysis of isolated samples of water from unfamiliar sources. Sanitary inspection of the grounds themselves is often of greatest service in interpreting the results of laboratory analyses, and sometimes absolutely necessary in order to form a correct judgment when the bacteriologic examinations are of a doubtful character.

The period is distinctly constructive in tendency. Much work on the problem of shell-fish pollution is now in progress in American laboratories. Massachusetts and Virginia have been most active and apparently have

the problem well in hand. New York has made a preliminary survey of its oyster-grounds, but the department of health does not feel that it has done sufficient work to warrant the fixing of definite standards of shell-fish pollution. New Jersey²⁰ is now taking active measures to control the hygienic condition of its large shell-fish areas. The shell-fish commission of Rhode Island is now making a very comprehensive survey of the waters of the state. Connecticut¹⁸ is about to commence a sanitary survey which will cover all the tidal waters of the state. The Maryland Health Department²¹ is examining bacteriologically various samples of market oysters but have formulated no standards of pollution. The present year will unquestionably be productive of important results which will add to the knowledge of the problem of shell-fish pollution and aid in formulating a more accurate and safer standard of pollution.

NOTE: Since the preparation of the above paper, the results of several laboratories, which have been engaged on oyster work during the past year, have been presented at the meeting of the American Public Health Association. The situation was carefully gone over and proposed standards of purity discussed. Among the more prominent of these was that recommended by the United States Bureau of Chemistry which has in charge the bacteriologic examination of oysters and other shell-fish for pollution under the food and drug acts of 1909-1910. This standard condemns all oysters in the shell which "show the presence of *B. coli* types of organisms when present in three out of five oysters in 0.1 c.c. of the shell liquor. These examinations are supplemented by an inspection of the beds from which the oysters were obtained, also by the bacteriologic examination of the water bathing the oysters from these localities."²² The government has prevented the shipment and sale of several lots of these shell-fish which have not come up to the standard.

The survey of the oyster-grounds of Rhode Island has also been completed. The state shell-fish commission has used the federal standard of purity in interpreting the results of bacteriologic analysis and has condemned and refused certificates of inspection to more than half the oyster-grounds of the state, comprising an area of over 3,000 acres of cultivated oyster-grounds. About 25 per cent. of the beds were passed conditionally, subject to later inspection. Official certificates of inspection were issued by the commission only to grounds which came up to the federal standard of purity.

While a number of bacteriologists have employed the standard of the federal government in judging the sanitary condition of oysters, the general opinion of the American Public Health Association seems to be that it is too high. The committee on standard methods of analysis failed to recommend a definite standard of purity for shell-fish analysis since they felt that further investigation of the problem must be carried on before they were warranted in adapting any definite standard. The federal standard is a tentative one and "as yet there are no established standards for the bacteriologic examination of shell-fish."²²

Acid Intoxication in Cholera.—During the stage of reaction in cholera it is not uncommon to see an almost abnormally bright color of the mucous membranes associated with a type of dyspnea approaching air-hunger. Such patients usually have either a partial or complete suppression of urine and an increase in the blood-pressure, which is sometimes as high as 200 millimeters of mercury. In cholera the symptoms of acid intoxication become so intimately related to those of uremia that differentiation is hardly possible. Indeed, it has been suggested by Senator that uremia from any cause whatsoever is only an acid intoxication.—A. Watson Sellards, in *Philippine Journal of Science*.

18. Communication from bacteriologist, Conn. Board of Health, July 21, 1910.

19. Twenty-Ninth Rep. N. Y. Dept. of Health, 1908, pp. 846 and 856.

20. Communication from Chief of Div. of Food and Drugs, N. J., July 18, 1910.

21. Communication from the Bacteriologist, State Dept. of Health, Md., July 21, 1910.

22. Communication from U. S. Bureau of Chemistry, Dec. 21, 1910.

THE PLAGUE IN NORTH CHINA

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The plague is very properly divided into three types: the bubonic, or that from affecting the lymphatic system, which is usually the most common type; the septicemic, or that affecting the blood-system; and the pneumonic type, or that affecting the lungs more especially. The latter two types are usually most fatal.

The epidemic which was, in January, 1911, overrunning North China was of this last type—the pneumonic type—largely and of excessive virulence; although there were, as in all epidemics of this disease, some cases of the other two types, and more of the septicemic type than of the bubonic type. So far as our experience here is concerned—and that experience is confirmed by reports coming from other infected regions—scarcely any who have taken the disease have recovered.

The disease, so reports have it, has been found in sporadic cases, and even in small epidemics in southern Russia for several months, but the Russian authorities took strenuous methods to eradicate it and they had got it fairly well under control in Russia when in November, 1910, it was found to have come to Harbin. Harbin is in Manchuria, which, as is well known, is under the control of the Chinese government. Harbin is moreover on the Trans-Siberian railroad.

It is interesting to know how the disease got to Harbin. It is now believed that the disease was brought to Harbin through the infected hides which hunters and trappers brought to Harbin for market. It is known now that there was an epidemic among a certain furbearing animal, an animal something like the American muskrat, which the hunters of the north kill for the hides and sell in large quantities at Harbin. It has been found that the disease among these animals was due to plague; and the furs brought to Harbin for sale are believed to have brought the infection. Whether this be absolutely true, or whether the disease was brought to Mukden, Shanhaikwan, Tientsin, and Peking through persons traveling on the railroad cannot be stated definitely. The fact is that Harbin was the original hotbed of the disease. It spread from there in all directions, usually following the lines of traffic, the principal of which is, of course, the railroad. The city of Harbin is divided into a Russian, a Japanese, and a Chinese part. The Russians and the Japanese took strenuous measures at once to stamp out the disease in their quarters, and they have it well under control, in their respective parts of the town; but the Chinese problem was a much more complex one, and their people much more numerous and perhaps less enlightened; consequently, the disease got beyond their control and it was from the Chinese native city of Harbin that the disease spread. The thing to do would have been to stop all railroad traffic from that city early in the epidemic, but that meant, of course, great loss of money and much inconvenience; so it was allowed to go on until, I fear, it was too late, for this disease in January was found as far south as Chefoo, and had got to several towns some distance away from the line of the railroads. This meant that it would spread inland, for the Chinese villages and towns are numerous and usually not far apart in this region, so that people traveling by cart and on horseback would spread it to other inland villages.

If the disease gets to Central China, where the climate is warm and damp, it will find a soil excellently adapted for the spread of the disease. It may die out here in

the North with the coming of the warm dry season, but with the coming of the wet season again it will be, doubtless, brought up from the south and central provinces again and practically become endemic unless the Chinese authorities employ most stringent methods to check the spread of the disease at once. It is due to them to say that they were in January rushing both foreign and Chinese doctors and assistants to the cities of Harbin, Mukden, Shanhaikwan and Tientsin, which are the largest cities on the line of the Imperial Chinese and the Manchurian railroads, but I fear that they waited too long. January is a most advantageous time of the year for the spread of the disease, for thousands of coolies at that time are returning from Manchuria to the provinces of Chili, Shantung, etc., after having spent a summer and fall in earning their bread in the wheat fields or lumber forests of Manchuria, and also because it is just about the time of the Chinese New Year, when every Chinaman who can returns to his home for the festive season.

But to get down to a few more specific data about this epidemic: 1. The disease started at Harbin. Up to January 24, 1911, about 1,500 Chinese and twenty-seven Europeans had died, of whom two were physicians and one an assistant. 2. The disease is met with, mostly, in the pneumonic and septicemic types. 3. Inoculation with Haffkine's antibubonic vaccines seems to be of considerable value as a prophylactic measure. 4. The administration of Yersin's serum in treatment does not seem to be of much value, although it should be said that it has not been given a full trial. If it were possible to take, say, forty or fifty cases and administer the serum to the patients and compare them with a like number that had not had the serum, we could say something more definite, but so far as I am able to learn this has not been done in this epidemic. 5. It has been conclusively shown that the disease, in the pneumonic form, is transmitted by the sputum and by contact with persons sick of the disease, and that the wearing of respirators is good prophylaxis. 6. The rat, or the rat flea, does not seem to have nearly as much to do with the spread of the pneumonic type of the disease as it has in epidemics of the bubonic type. 7. So far as I am aware this is the first definite epidemic of the pneumonic type of the bubonic plague. 8. The disease spread along the line of railway traffic from Harbin to Mukden, to Shanhaikwan, to Tientsin and to Peking and to several smaller places. It also got to Chefoo, which is a seacoast town, probably through some Chinese coolies returning from the North in a Chinese junk or fishing boat.

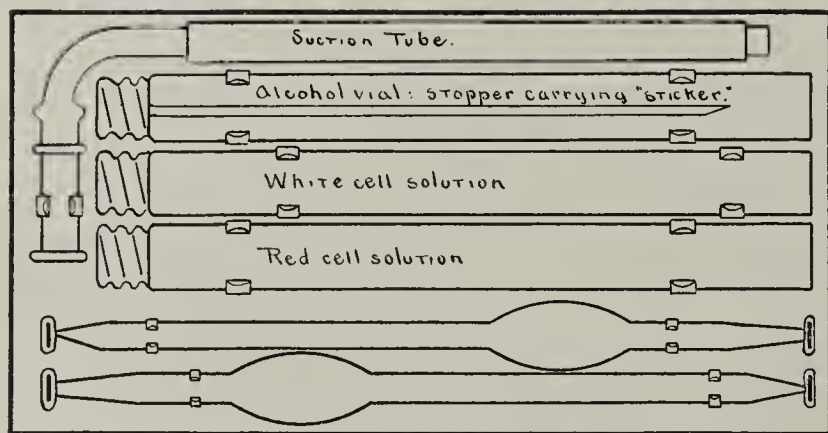
Hopkins Hospital, Methodist Mission.

A HANDY POCKET CASE FOR BLOOD
PIPETTES AND SOLUTIONSWALTER S. SUTTON, M.D.
KANSAS CITY, MO.

The inconvenience of carrying about the usual blood-pipette case and separate solution bottles has resulted in many efforts on the part of pathologists, hospital interns and others to devise a convenient means of collecting and carrying pipettes and smears of blood. The device herewith figured meets all the requirements in perhaps the smallest possible space, since the entire outfit may be comfortably carried in the vest pocket. As is easily seen from the illustration, the set contains two pipettes, a 2-dram bottle of alcohol in the stopper of which is mounted a long cutting-edge needle, two

2-dram bottles containing diluting fluid for red and white cells respectively, and the usual rubber suction-tube. These are held in place on a thin metal plate by appropriate clips. The pipettes have in addition end-clips, each shod with a piece of soft rubber tubing, which, by pressing against the ends, prevent leakage from the filled pipettes. These, however, may be omitted in favor of short rubber caps for the pipette-ends, or of the time-honored rubber band stretched over the pipette from end to end. The straight portion of the suction-tube lies in a short piece of brass or copper tubing soldered to the metal plate.

I use two 1 to 100 pipettes, making either red or white counts with either pipette. Thus, the case will provide for two red-cell counts, two white-cell counts or



Handy pocket case for blood pipettes and solutions.

one of each. Slides or cover-glasses for blood-smears are carried in the case simply wrapped in tissue-paper. The metal plate which carries the outfit is preferably fastened to the cover of the case, since the fastening prevents breakage and the low edges of the cover do not interfere with the removal of the pipettes or bottles from their places. The advantage of the clean needle continuously immersed in alcohol over the usual unclean pocket "sticker" need scarcely be mentioned. The actual size of the case is $4\frac{3}{4}$ by $2\frac{1}{2}$ inches and the depth $\frac{5}{8}$ inches.

Dr. F. Hecker has made the useful suggestion that if the depth of the case were slightly increased a Sahli hemoglobinometer might be added to the outfit.

PNEUMOCOCCEMIA; BILATERAL EMPYEMA; RECOVERY *

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AND

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Patient.—M. D., a boy aged $4\frac{1}{2}$ years, was admitted to Mount Sinai Hospital June 14, 1910. He was the second of four children. The mother had had no abortions; father denied syphilis; the other children were all healthy. The delivery of this child was normal; it was breast-fed, and always well up to time of its present illness.

Present Illness.—This began with an eruption four weeks before admission. This eruption was described by the father as a "red shine." At the onset there was fever but no vomiting. The duration of the fever was not noted, but the child appeared well enough two weeks later to be taken out and exposed to cold, which was followed by elevation of temper-

ature, slight cough, generalized edema of the face and body and bloody urine. A physician, called in for the first time on the latter occasion, diagnosed the condition as postscarlatinal. The child did not improve and was admitted to the hospital two weeks later, June 14.

Examination.—On admission physical examination showed that the general condition of the child was very poor; there was marked apathy, and extreme dyspnea and cyanosis. In short, the child looked almost moribund. The throat showed slight reddening. The chest showed marked inspiratory retraction of the lower ribs.

Lungs: The lungs anteriorly were negative; posteriorly the right lung showed flatness over the entire chest almost to the apex; breathing was diminished above, absent below. On the left side there was dulness from the angle of the scapula to the base, where it became flatness; no breathing at the base.

Heart: The apex beat could not be made out; right border, mid-sternum; left border, one finger-breadth outside of nipple line; action was regular, rapid, and of small force, and the pulse was of correspondingly poor quality.

Abdomen: Slightly distended and tympanitic; no tenderness anywhere.

Liver: Fifth space above and felt three finger-breadths below the free border of the ribs; edge sharp and not tender.

Spleen: Palpable one finger-breadth below free border of ribs.

Skin: A few small pustules over the chest, and the abdomen was covered by a number of dry crusts. Desquamation was noted on palms of hands and soles of feet.

There was some glandular enlargement.

Urine: Normal, grossly and microscopically.

Blood-Count: Leukocytes 23,800; polynuclears 82 per cent.; large lymphocytes 5 per cent.; small lymphocytes 11 per cent.; large mononuclears 2 per cent.

At the time of admission the pulse was 128; respiration 58; and temperature 101.4° F.

A bilateral empyema was suspected and then confirmed by aspiration.

Treatment and Course of Disease.—On account of the patient's poor condition, it was decided to relieve him at once, at least temporarily, by aspirating the left chest; ten ounces of pus were withdrawn. This afforded him some relief but four hours later, under local anesthesia, an intercostal incision was made by Dr. Leo B. Meyer, the surgeon in charge of the service, and pus was evacuated; a drainage-tube was inserted, and the patient reacted well after the operation. The child's condition precluded any more radical procedure than simple incision.

June 17, two days later, the patient's condition became very poor again; the dyspnea increased and the temperature ran up to 104.2° F.; respiration 60 and pulse 160. The left side was discharging freely, but owing to his poor condition, we decided to resect a rib on the right side two fingers below the angle of the scapula. This was done without anesthesia, by Dr. Meyer. Drainage was introduced and the wound dressed.

June 18: Patient's condition improved; respirations less labored, and pulse still rapid. The patient did fairly well for the following ten days when the temperature began to rise again, although both sides were discharging freely.

June 1: General condition poor; patient complained of some pain in the right hypochondrium and some tenderness in this area. Wounds look clean and are discharging quite freely.

July 4: Temperature 103.6° F.; pulse 140; tenderness over the whole liver area, some bulging in the lateral aspect of the upper right abdomen.

July 6: On the fifth the temperature dropped from 103.8° to 97.4° F.; general condition very poor; heart irregular at times; quality of pulse fairly good; liver area remained about the same. There was a swelling in the right cheek directly over the superior maxilla, showing slight fluctuation.

July 8: The face swelling increased in size, and was incised through the mouth. A large amount of very foul pus was evacuated. This pus contained a large number of saprophytic bacteria. A blood-culture made showed the presence of pneumococci.

* From the Isolation Service, Mount Sinai Hospital.

July 11: Owing to the frequent variation in temperature and the persistent tenderness in the right hypochondrium, the right subphrenic space was repeatedly aspirated, but no pus was found.

July 13: General condition somewhat worse; marked cyanosis and dyspnea noted; wound of the right cheek drained well. The lung signs showed dull tympany over the front of both lungs, some dulness and even flatness behind with numerous fine crepitant râles over the whole lung area. The heart was negative. The child was unable to sit up without apparent pain and difficulty in breathing. Lying on the right side caused the child to cry out and become markedly dyspneic and cyanotic. The liver was enlarged and tender, though somewhat less so than formerly. The bulging over the liver area was unchanged; spleen still palpable.

July 19: Until this time the child was in fair condition, but on this day the temperature rose again to 104 F.; this rise was due to retention of pus on the right side. The pus was evacuated and the wound drained.

July 27: A second blood-culture showed the absence of pneumococci.

July 29: Temperature rose on this date, due to retention of discharge.

August 1: Condition better; liver tenderness less marked; heart action rapid, regular, and fair. Dr. A. V. Moscheowitz was asked to see the patient on account of suspected subphrenic abscess. His opinion was that there was retention above the diaphragm, and he advised more complete drainage. This was done and the signs rapidly cleared up.

August 10: The condition of the wound on the right side was very much improved; probe could still be introduced for several inches; discharge was slight and of a serous character.

August 13: Discharge had entirely ceased; wounds closed; liver tenderness had disappeared and the child was discharged cured.

A study of the case shows the following facts: 1. The child had scarlet fever. 2. Two weeks after the onset of the first symptoms he was probably exposed to a pneumococcus infection. 3. On admission there was no evidence of pneumonia, but of a bilateral empyema. 4. A pneumococcemia was shown by a blood-culture taken on July 8. 5. There was a possible metastasis in the cheek. Recovery ensued.

We find that the presence of scarlet fever was shown by the history of a rash, and of a general edema, and by the desquamation of the hands and the soles of the feet on admission. Many authors make but casual mention of the occurrence of empyema after scarlet fever, although we do know that it may occur after any of the infectious diseases. While empyema is of frequent occurrence, bilateral empyema is rather rare and varies according to different authors. We can say, however, that it occurs in from 1 per cent. to 3 per cent. of all cases of empyema. The pus in empyema following scarlet fever most frequently contains the streptococcus or the staphylococcus, and less often the pneumococcus, which, if present, may follow as a result of a pneumonia complicating the scarlet fever. As to the pneumococcus infection, we have a history of probable exposure to the pneumococcus two weeks after the onset of the first symptoms. The patient may, at that time, have had a pneumococcus infection of the lung, of which on admission, two weeks later, there were absolutely no signs.

Endeavoring to account for the pneumococcus infection, we find that our patient was exposed two weeks after the onset of the scarlatinal symptoms. We know that the pneumococcus inhabits the normal throat. Taking into consideration the diminished resistance of the child following scarlet fever, plus these pneumococci, (which, as Arnold and Grawitz have shown, can pass through the lung tissue and into the pleural cavity with-

out infecting the lungs), plus a hydrothorax accompanying the general edema, we can perhaps conclude that the pneumococcus empyema possibly followed such an infection.

Desguin, in his excellent monograph,¹ says that a pneumococcus infection of whatever part of the body is always accompanied by a pneumococcemia. He states further that the pneumococcemia may precede the appearance of a local lesion. As the presence of the pneumococcus in the blood is not a normal condition, in our case the micro-organism may have entered the blood from the congested throat usually seen in scarlet fever. From this it may also be possible that the empyema was secondary to the pneumococcemia. We must not lose sight, however, of the fact that there may have been a preceding pneumococcus pneumonia followed by empyema, although from the history and the signs on admission this could not be positively determined. The empyema was confirmed by the aspiration of pus from both sides of the chest, each of which showed the presence of pneumococci as reported by the pathologic department: Pus from left chest: pneumococcus, polynuclears 100 per cent.; pus from right chest: pneumococcus, polynuclears 97 per cent., lymphocytes 3 per cent.

The first blood-culture also showed the pneumococcus as seen from the following report: Culture made by Dr. Olsan July 8, 1910, 5 c.c. of blood being used. This blood was incubated partly in glucose-bouillon, partly in agar, and partly in 2 per cent. glucose-agar. In all the media pneumococci were found, there being on solid media seven colonies to the cubic centimeter of blood. The organism was typical in every respect. This culture was found positive six weeks after probable infection, which is an unusually long time for a pneumococcemia to persist, according to Desguin. A second blood-culture was made by Dr. Celler July 22, 1910, 5 c.c. of blood being used. This was incubated in glucose-bouillon, in agar, and in glucose-agar. All the media remained sterile, the time of observation being six days.

At the time the face induration appeared pneumococci were still probably present in the blood, and although pneumococci were not recovered from the pus evacuated from the swelling, owing to exuberant growth of saprophytic bacteria, there is a strong likelihood that this focus can be considered a metastasis. Two weeks after the first culture was made, a second was taken and found to be negative. At the time the general condition of the boy improved considerably, and although at times there was a tendency for the temperature to rise again it was always found to be due to slight retention of pus. Dr. Meyer in his comment on the case says, that from the surgical standpoint the method of treating a bilateral empyema is of interest, especially if the patient is in as bad a condition as this one was. To have opened the two sides of the chest at the same time would probably have been fatal. Incision and drainage of one side so as to give the child some lung with which to breathe, and to permit some lung expansion on one side before opening the other, seems to be the best method of procedure. If the child's condition had not been so desperate, rib resection would have been performed at the first operation, but the first consideration was to get the chest opened and drained and the child removed alive from the operating-table.

As a matter of fact, in young infants, intercostal incision is frequently sufficient and is certainly worthy

1. Desguin: La septicémie à pneumocoques, 1908.

of a trial as being the simpler operation. In this case drainage was as satisfactory from simple incision as from the site where the resection was done. Up to this time, three months after discharge from the hospital, the boy has remained entirely well.

FRACTURE OF THE CLAVICLE

ITS DIAGNOSIS BY TRANSMISSION OF RESPIRATORY SOUNDS *

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In a paper, read before The Society of Practical Medicine in May, 1907, entitled, "Diagnosis of Fracture of the Clavicle by Auscultation of Voice and Breath Sounds," I called attention to the fact that in normal individuals there is distinct transmission of both voice and breath sounds probably from the trachea, outward along the shaft of the clavicle to its outer extremity.

When a small-belled stethoscope is accurately applied to the outer extremity of the clavicle, breath sounds and voice sounds of a distinctly bronchial or tracheal quality are to be heard.

In a series of over 300 normal persons thus tested, it appeared that the whispered voice was the most reliable test and that in over 95 per cent. of all the cases a more or less intensely bronchial whisper could be heard over the acromial end of the clavicle.

In over two-thirds of the cases the spoken voice as well as the whisper was of this quality, and audible. In about one-third of the cases the respiratory murmur was distinctly audible and of this bronchial character, in addition to the spoken and whispered voice.

It was also noted that the transmission of these sounds was limited very strictly to the area over the shaft and outer extremity of the clavicle, and that if the stethoscope were moved even one-half inch forward, or outward, or backward, away from the clavicle, the sound transmissions were lost or so completely modified as to offer a clear demarcation.

Conclusions: Granted that there exists normally a transmission of voice sounds from the trachea outward along the clavicle, a fracture of the bone should cause a break in sound propagation; and such is found to be the case.

In the series of fifteen cases reported at that time, the results were most striking, for, in all these cases of fracture, there was complete loss of these auscultatory signs on the injured side, in contrast to their presence on the normal clavicle. In one case of green-stick fracture, the intensity of the sounds was very much diminished although they were not entirely lost.

As bony union takes place, there is a gradual return of these signs, but this does not seem to occur until after the fourth week from the time of fracture.

In cases of prominence of the inner fragment of the clavicle, it is often very easy to place the stethoscope over this fragment and to recognize clearly the sounds which no longer are audible over the outer fragment.

TRANSMISSION OF FREMITUS

Since writing the above-cited paper, I have made use of a still simpler method, based on the same principles,

but dependent on the fact that vocal "frenitus" is likewise transmitted along the clavicle unless there be a break in the continuity of the bone.

Whereas the diagnosis with the stethoscope as above mentioned can usually be made, nevertheless there are a number of patients, especially children, who apparently cannot whisper and thus the test is rendered unsatisfactory; or there is difficulty in applying the stethoscope.

On the other hand, the recognition of vocal fremitus by the palpating finger is more easily attained and even the cries of the youngest child afford means for this test.

METHOD

The examiner stands directly behind the patient, who should best be seated on a plain stool or chair. Place the thumb or index-finger of each hand on the corresponding clavicle of the patient, and without pressure.

Commencing near the sternal end of the shaft of the clavicle gradually move the examining fingers symmetrically outward along the clavicles while the patient repeats some sonorous words, e. g., "ninety-nine, ninety-nine, etc."

In the absence of a fracture the palpable fremitus will be easily detected and of equal intensity on the two sides, all the way out to the extreme end of the bone.

If there be a complete fracture, the fremitus is suddenly lost or very greatly lessened at the point of fracture and beyond. So delicately may this sign be elicited that it is often possible to follow accurately the obliquity of the line across the shaft at the point of fracture.

The normal fremitus of the whole scapular region and chest is very different in intensity and is easily distinguishable.

VALUE OF THE METHOD

In many cases of fracture of the clavicle, inspection alone, or the most superficial palpation, reveals without difficulty the presence and the site of the break, and no further examination is necessary; but for the above method I claim the ease with which the signs are to be elicited, the freedom from painful palpation of the fractured bone, and its great value as an aid in the diagnosis of the cases in which the fracture is in the outer end or in the shaft without deformity, and in all doubtful cases.

LITERATURE

Auscultation to elicit crepitus at the site of fracture has long been in use, especially for fracture of the ribs; but in 1893, Vajana¹ of Palermo described a method for diagnosis of fractures of many of the long bones and bones of the skull by combined percussion and auscultation.

The stethoscope is placed on a subcutaneous portion of the bone and, with the plexor and pleximeter, percussion is now made at points along the bone in all directions from the stethoscope, and when a line of fracture is crossed there is loss of the sound transmission.

In 1902, J. Plesch² of Budapest, described the same method as original, having doubtless overlooked Vajana's communication.

A. H. Andrews³ suggests the use of the tuning-fork instead of the plexor and pleximeter.

1. *Riforma med.*, June, 1893, ix, part 2, p. 651.

2. *Ungar. med. Presse*, August, 1902, vii, 497.

3. *Chicago Med. Recorder*, 1903, xxiv, 182, 185.

* Communication received July, 1910, for publication.

However, in the case of the clavicle, neither percussion nor tuning-fork is necessary, for the vocal and respiratory organs by way of the trachea, which is so close to the inner end of the clavicle, furnish all needed vibrations for our test, and, moreover, these are transmitted in a uniform direction, outward.

32 East Seventy-Sixth Street.

TUMOR IMPLANTATIONS IN THE DEVELOPING EMBRYO

EXPERIMENTS WITH A TRANSMISSIBLE SARCOMA OF THE FOWL*

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NEW YORK

The fate of tumor cells implanted in the developing embryo has from several points of view a considerable interest. The superficial similarity between neoplastic cells and the cells of embryonic tissue is striking; and it has given rise in part to a widely discussed theory of tumor origin. While this theory well explains a certain class of congenital growths, its more general applicability is questionable. But there is no doubt that the parallel study of embryonic and neoplastic cells can throw much light on important problems of growth.

MATERIAL USED

The implantation of tumor in developing embryos does not seem to have been accomplished heretofore, despite the evident bearing of such an experiment on the supposition that all tumors are of congenital origin. Indeed, it is most difficult with mammalian material, although we have found it not impossible. After laparotomy of the pregnant rat under ether, a fine, hollow needle is run for some distance in the uterine wall, and thence into the amniotic sac and embryo. When the needle is withdrawn after the injection, there is usually little loss of amniotic fluid. But the percentage of failures from one cause and another is high, and since it is necessary for the survival of the injected embryo that it be large, birth takes place before the tumor has opportunity to grow.

The difficulties are less with developing hen's eggs and a transmissible avian sarcoma.¹ But before describing our results mention should be made of a unique and significant finding recently obtained with this tumor, and now repeatedly observed. It is transmissible to new hosts by means of a filtrate free of the tumor cells.² The tumor has also been successfully transmitted in adult fowls by means of dried material kept at room temperature for three days. Nevertheless the growth metastasizes by the proliferation of transported cells and its tissue is in the strict sense transplantable.³ Indeed, it exhibits to a special degree, not merely a few, but all those features by which the malignant neoplasms are characterized.

METHOD

For the inoculation of the sarcoma into developing chick-embryos, we have slightly modified a method devised by Peebles⁴ for another purpose. A small

window is cut in the egg-shell, a smaller one torn in the shell membrane, and through a needle a minute portion of the finely divided tumor is injected into the chick, now plainly visible. The window in the shell is then closed, preferably with the piece first cut out, and is sealed with strips of moist shell membrane.

When the operation is conducted carefully and with sterile instruments, many of the embryos continue to develop. The eggs used were laid by pure-bred fowls of the variety most susceptible as hosts for the tumor, namely, barred Plymouth Rocks. At the time of inoculation, the embryos were from six to sixteen days old. Most of our observations thus far have been on tumors in the embryonic membranes, because here even small growths are sharply defined and easily accessible. Furthermore, it is difficult to inoculate the embryo without at the same time inoculating the membranes pierced by the needle.

GROWTH IN THE EMBRYO

When an egg is opened on the sixteenth day of incubation, and a week after a successful tumor inoculation, one observes a slight puckering and opacity where the needle was thrust through the outermost embryonic membrane (fused chorion and allantois). From without no tumor is visible, but on cutting and turning over the membrane, there is usually found on its inner surface at the scarred spot, a sessile nodule like a flattened sphere, of which practically the whole bulk projects into the allantoid cavity. The mass is firm, yellowish or grayish white, nearly opaque, with extremely well-defined contour. Dilated blood-vessels converge to, and course over it. The tumor, after only seven days' growth, may measure 1.2 cm. in diameter, and it is extremely striking to see so large a mass dependent on a filmy membrane for support and vascularization. Scattered near by are perhaps a few small nodules, 0.1 to 0.2 cm. broad, and sometimes others lie in the deeper membranes. In the embryo tumor masses are found along the track of the needle. Our observations on them have been few as yet. In the best instance found thus far—that of a nineteen-day embryo inoculated a week previously—a large mass lay in the chest wall and projected inward toward the heart. Sessile on this organ was another mass, and two smaller ones were embedded in the liver substance. All were invading the surrounding tissue.

We have once found a "rice-body" free in the fluid between the membranes. It was made up entirely of living and dividing tumor-cells, was unprovided with blood-vessels, and was quite bare of endodermal or ectodermal covering.

GROWTH CAUSED BY A CELL-FREE FILTRATE

Some Ringer's solution in which ground tumor had been suspended and shaken, was passed through a Berkefeld filter impermeable, under the same conditions, to *Bacillus prodigiosus*, and of the resulting fluid, small portions were injected into developing eggs. In one, after the lapse of thirteen days, small, discrete tumor nodules were found on the membranes. A microscopic examination of these well demonstrated the specific action on connective tissue of the agent causing the growth. The fluid had been injected into an extra-embryonic body cavity at a time when it was lined by mesoderm, and the tumors occurred as localized growths in this mesodermal lining. Some of them, like the mesoderm about them, were still bare of any covering on one side. During our experiments the ectoderm and endoderm have been often injured and presumably

* From the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. Rous: Jour. Exper. Med., 1910, xii, 696.

2. Rous: Transmission of a Malignant New Growth by Means of a Cell-Free Filtrate, THE JOURNAL A. M. A., Jan. 21, 1911, p. 198.

3. Rous: Metastasis and Tumor Immunity with a Transmissible Avian Neoplasm, THE JOURNAL A. M. A., Nov. 19, 1910, p. 1805.

4. Peebles, F.: Arch. f. Entwicklungsmechn., 1908, vii, 405

brought into association with the agent causing the growth, but they have never undergone a neoplastic change.

HISTOLOGY OF THE GROWTHS

The tumors obtained on implantation resemble microscopically those in adult fowls except that the cells lie in a loose reticulum and are often of most attenuated spindle form. Slight variations occur in the morphology of the different growths, owing presumably to variations in the implanted material. But the cells are of one type, growing in a diffuse mass; and a cellular reaction is quite absent from the normal tissue round about. In general appearance the tumor cells are markedly different from those of the normal embryonic connective tissue next to them.

SUSCEPTIBILITY OF THE EMBRYO

Some embryos are naturally resistant, as are some adult fowls, and tumor implantation in them fails of success; but in most, the growth greatly surpasses that seen in adult hosts. This refers only to tumors in the embryo's membranes, since the implantations in the embryo's body have been as yet too few for a generalization. But there the findings will probably be the same. It is well known that young animals form more favorable hosts for transmissible tumors than do old. One of us has recently investigated the point further by inoculating with tumor many new-born rats and mice. These showed themselves much more susceptible than control animals three-fourths grown.

Sixty-Sixth Street and Avenue A.

PRIMARY ORCHITIS WITH SECONDARY PAROTITIS

THE REVERSE OF METASTATIC MUMPS

J. F. TORPEY, M.D.
NEW HAMPTON, IA.

The case in question is that of a young man, aged 18, in high school.

Dec. 3, 1910, the patient was found in bed with temperature 101 F., pulse 90, complaining of pain and tenderness in the left testicle. I questioned him as to his having had mumps recently, the disease being prevalent at this time. He denied ever having had mumps, lies, gonorrhea, tuberculosis or having received any injury, and could not in any way account for his present trouble.

On examination, I found the left testicle very tender, quite tense, and swollen to about twice its normal size, with no evidence of the usual causes of this condition. My opinion at the time was that the patient must have had a mild attack of mumps, and that his present condition was the sequel. On the usual line of treatment he seemed to improve. Six days afterward the right testicle became swollen, much the same as the left one had been. This condition lasted for seven days, and the patient was feeling pretty well when he noticed a slight swelling below each ear, in the angle of the jaws, accompanied by considerable pain. The parotid glands became very much swollen, and the patient developed a classical case of mumps.

When I last saw him sixty days after the first symptom of orchitis appeared the testicles were nearly normal. Although he wore a suspensory, he felt that he could dispense with it.

Having excluded, so far as I knew, the ordinary causes of orchitis, with one testicle involved at a time, and the parotid glands becoming involved so soon after the orchitis, I arrived at the conclusion that the order of metastasis in mumps had been reversed in this case.

I have not been able to find a parallel case.

THE STIMULATION OF ADRENAL SECRETION BY EMOTIONAL EXCITEMENT*

W. B. CANNON, M.D., AND D. DE LA PAZ
BOSTON

Dreyer's demonstration that splanchnic stimulation increased the content of epinephrin in blood from the adrenal veins has been confirmed by several observers. Adrenal secretion therefore is under control of the sympathetic system.

Major emotional disturbances indicate the dominance of sympathetic impulses. In the cat, for example, fright causes dilatation of the pupils, inhibition of the stomach and intestines, rapid heart, and erection of the hairs of the back and tail. Do not the adrenal glands share in this wide-spread subjugation of the viscera to sympathetic control?

To try this suggestion the inhibition of contraction in strips of longitudinal intestinal muscle, sensitive to epinephrin 1 to 20,000,000, was used as a biologic test. Blood was obtained from the cat when quiet, and again after the animal was excited by the presence of a barking dog, by introducing, through the femoral vein, into the inferior vena cava to the region of the liver, a small catheter lubricated with petrolatum. The blood thus obtained was defibrinated and applied to the intestinal strip at body temperature.

After an initial shortening the strip contracted rhythmically in blood from a quiet animal. In no instance did such blood produce inhibition. On the other hand, blood taken from animals after the emotional disturbance showed more or less promptly the typical relaxing effect. As the emotional period was prolonged, the effect became prompter and more profound.

The view that inhibition of the contracting intestinal strip is due to an increased epinephrin content is justified for the following reasons: 1. The effect was obtained in blood from the vena cava near the liver when that from the femoral vein taken simultaneously produced no inhibition. 2. Removal of the adrenal glands after tying the adrenal vessels resulted in a failure of excitement to produce the effect. 3. Adding varying amounts of adrenalin to inactive blood evoked all the degrees of relaxation that have been observed in excited blood. 4. Excited blood which produced prompt inhibition lost that power on standing or on being agitated by bubbling oxygen. These conditions, together with the evidence that sympathetic impulses increase the secretion of the adrenal glands, and that during such emotional excitement as was here employed signs of sympathetic discharges were observable in the animal from the eye to the tip of the tail, prove that the epinephrin effect was due to epinephrin.

Injected epinephrin is capable of inducing an atheromatous condition of the arterial wall in rabbits, especially in elderly individuals, and is also capable of evoking hyperglycemia with glycosuria. As Ascher has shown, by prolonged stimulation of the splanchnic nerves, prolonged secretion of epinephrin with maintained high blood-pressure can be produced. In the light of the results here reported the temptation is strong to suggest that some phases of these pathologic states are associated with the strenuous and exciting character of modern life acting through the adrenal glands. This suggestion, however, must be put to experimental test.

* From the Laboratory of Physiology in the Harvard Medical School.

REPORT OF A CASE OF PARALYSIS OF THE BLADDER

ILLUSTRATING THE IMPORTANCE OF CATHETERIZATION
BEFORE OPERATION

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SANBORN, IOWA

In this case of paralysis of the bladder the patient was operated on under the diagnosis of ovarian cyst with twisted pedicle complicated by pelvic infection. The condition followed normal labor and delivery, and shows the importance of catheterization before operation.

Patient.—Married woman, aged 30, mother of three normal children; previous history negative; in the second stage of labor when first seen. A normal living child was delivered without the use of forceps and without laceration of the mother's tissues. Delivery of the placenta was normal. For the first six days after delivery the patient's condition was normal. On the sixth day, the uterus was six finger's-breadths above the pubis. The urine was examined and found normal. The patient felt well. On the seventh day, the temperature was 102 F., and pulse was 120. The patient complained of great abdominal pain, more especially on the right side. The abdomen at this time began to distend rapidly and in size simulated a six-months' pregnancy. The bowels were regular and a normal amount of urine was being passed though there was some irritability of the bladder. On the eighth day, the temperature was 103 F. and the pulse 140 and poor in quality. All the symptoms pointed to puerperal sepsis except the distention of the abdomen, especially the lower part. Pain at this time was only controlled by administration of $\frac{1}{4}$ grain of morphin sulphate as necessary. By this time the size of the abdomen resembled a full term pregnancy.

Examination.—This showed great abdominal distention, especially in the lower portion. Percussion showed a cyst or watery tumor in the median line, especially in the pelvis. It seemed to be of great size and a diagnosis was made of ovarian cyst with twisted pedicle accompanied by pelvic infection, and immediate operation was advised.

Blood Examination: White cells, 18,000; red cells, 5,000,000; hemoglobin, 90 per cent. Differential count showed: small mononuclears, 18 per cent.; large mononuclears, 6 per cent.; eosinophils 2 per cent.; polymorphonuclears, 74 per cent.

Urine Examination: The urine was being passed every two to four hours in quantities of from 4 to 6 ounces. The reaction was alkaline. Otherwise it was normal.

Operation.—As the patient had been passing urine at regular intervals and had passed eight ounces just before the operation it was not thought necessary to catheterize her. An incision about 4 inches long was made in the median line. A large blue, thin-walled tumor presented which resembled in every way a cyst of ordinary character. A trocar was inserted and 3 gallons of urine were withdrawn. The fact that the tumor was not a cyst but the bladder was not recognized till the urine escaped through the trocar. The viscus was closed with No. 2 Chromic catgut, great care being exercised not to injure the mucosa. The abdominal incision was closed in the usual way and both wounds healed by primary union.

Postoperative History.—The ordinary treatment in any post-operative case was carried out, plus, of course, treatment of bladder symptoms. There was no complaint of pain. The patient was catheterized three hours after the operation and three times a day thereafter, the strictest antiseptic precautions being observed each time. After the fourth day, after the last catheterization of the day, a few drops of silver nitrate solution were left in the urethra. Hexamethylenamin (urotropin) was given regularly. On the fifth day as often happens after repeated catheterization, the bladder became infected. The patient had chills and the temperature rose from normal to 103 F.; the pulse was 138. The kidneys also became infected. Analysis of the urine showed: color, dark cloudy; specific gravity, 1026; sugar, negative; albumin, negative; indican, present; bile, negative. Microscopic examination showed many motile bacteria, numerous crystals (calcium oxalate), granu-

lar casts and blood-cells. There was also excess of mucous and triple phosphates. By the twelfth day the patient was in excellent condition and she was discharged well on the eighteenth day.

A CASE OF ENTERITIS FROM TRICHOCEPHALUS ALUS DISPAR

B. N. WADE, M.D.
CHICAGO

Patient.—An Austrian woman, aged 22, entered the Cook County hospital suffering from an intractable anemia and it was not until after her stools had been examined that the etiologic factor was discovered. She had lived in Boston until four months prior to admission. She had worked as a laundress; never used alcoholics; food was of poor quality; she ate in cheap restaurants. Fourteen months prior to admission the patient began to lose strength, and finally had to quit work; suffered with severe headaches, which were always in the occipital region. Her appetite was poor, and eating would nauseate her, and often caused vomiting, but she never vomited blood; had not vomited or even been nauseated for several months; the bowels had always been regular. The patient had had a slight bronchitis ever since the trouble began; had never been troubled with fainting spells or palpitation, although at times she became very weak and dizzy; on exertion, she would become short of breath. The patient had lost 50 pounds in weight. When the trouble first came on, the patient suffered a great deal from epistaxis, but had never lost any great amount of blood from this source; had complete amenorrhea since the beginning of the illness and during the time of the menstrual periods would often have nose-bleed. Previous to this the menstruation was normal. The patient stated that the muscles in her arms had pained ever since she took sick, and they were somewhat tender, and became stiff on exercising them. This myalgia was most severe at night. The patient also complained of a dull aching pain in the abdomen, especially in the splenic region, and said that it was always present; there was a drowsy feeling all the time. The patient had never felt this way until this trouble came on.

Physical Examination.—The patient appeared languid and apathetic; was pale and anemic; pulse and temperature were normal. The tongue was coated white, and the breath exceedingly foul. The chest and cardiovascular system were negative. There was some tenderness in the left epigastric region and over the descending colon; liver and spleen normal. On vaginal examination, there was extreme tenderness in the posterior fornix; rectum was somewhat tender. The stools were foul-smelling, greenish in color and watery in consistency. They contained many ova of the *Trichocephalus dispar*, which were of the characteristic brown oval forms with clear polar bodies. Each field contained four or five ova. After repeated examinations, the parasites themselves were found but once. There was no occult blood in the stools; small particles of undigested foods were present and mucus was also present to some extent.

Blood Examination.—Red cells, 3,100,000 per c.mm.; leukocytes, 8,300 per c.mm.; hemoglobin, 80 per cent. The differential count showed an eosinophilia of 10 per cent.; the other cells were present in about normal percentage.

The urine showed the presence of indican; otherwise it was normal. The stomach contents were also normal.

Treatment.—Two weeks after the patient was put on thymol, gr. 2, t. i.-d., the ova completely disappeared from the stools. The bowels were kept open with calomel and Epsom salts, and an occasional colonic flushing was also given. The anemia was disappearing under the use of Fowler's solution and elixir, iron, quinin and strychnin.

My reasons for reporting this case are, first, to emphasize the importance of examination of the stools as a routine procedure, and especially in cases of anemia when no cause is evident; and second, because this is a disease which is either infrequent in this section, or one which is commonly overlooked.

Therapeutics

THE PROPHYLAXIS OF MEASLES

It is difficult to find either a physician or a layman to-day who has the temerity to expose a healthy child to contact with one who is suffering from scarlet fever, with the avowed object of infecting the healthy child. With measles it is different. Not a few non-professional people are inclined to advise, and even take pains to expose healthy children to infection from patients suffering from measles with the hope that the healthy children may contract the disease.

The circumstances connected with the two diseases are somewhat different. Scarlet fever, as has been pointed out in *THE JOURNAL*, is a disease to which not all persons are susceptible, a considerable number enjoying either an absolute immunity because they never contract the disease, or an immunity because they have already passed through the disease in so mild a form that it has not been recognized. Measles, on the other hand, is a disease to which practically every individual who has not already suffered an attack is susceptible. It is one of the most contagious of all diseases, ranking in this respect with small-pox and typhus (the genuine typhus, not typhoid) or ship fever.

It seems almost invariably true that one attack of the disease protects against subsequent attacks, though most writers teach that a second, third, and even fourth attack are not uncommon. It is probable that when these repeated attacks are alleged to have occurred, some of them at least were other cutaneous infectious diseases, especially so-called German measles, or some eruptive but non-contagious disease.

Many cases might be cited illustrative of these points, but only two or three will be mentioned here. The famous epidemic reported by Dr. Panum, the Danish physician, in the *Archives générales de médecine*, April, 1851, has been mentioned by numerous writers from Watson to Osler. This epidemic occurred in the Farøe Islands, in 1846. No measles had been known in this group of seventeen small islands since 1781 until on March 28, 1846, the disease was introduced by a man who had come from Copenhagen. In October of the same year the disease had entirely disappeared, and during the interval which had elapsed, of 7,782 inhabitants of the islands, 6,000 had had the disease; 1,500 persons who had established quarantine against the disease escaped.

In 1875, it is reported that measles was carried by a ship of the British navy from Sydney to the Fiji Islands, and in the succeeding epidemic 40,000 out of the 150,000 inhabitants died in four months. This shows the terrible severity of the disease in people who have no hereditary partial immunity.

In the Civil War, a large number of soldiers had measles, and many died from it. This disease occurred more frequently in the regiments which were recruited in the country towns than in those which were recruited in the large cities, this being explained by the fact that in country towns epidemics occur at longer intervals, so that a large number of boys reach manhood without having had the disease, while in the large cities epidemics are frequent and few boys grow to manhood without having experienced it.

These instances show that practically everyone is susceptible to measles until he has had it, and that an attack in adult life is generally more severe than in childhood.

Taking these facts into account one may well question first, whether it is possible entirely to prevent epidemics of measles; and second, whether, if it is possible to prevent them, it is desirable to do so?

On the other hand, it has been observed that children under six months of age are less likely to take this disease than older children, and that extremely old people are also less susceptible. Also, it seems to be a fact that the disease is most disastrous in its effects on infants, on children who have scrofulous glands, on persons who are tuberculous, or who have any tendency to tuberculosis, on individuals who are debilitated from any cause, and on women who are pregnant or who have recently been confined.

The above being true, it certainly can be reasonably asserted that the effort should be made to isolate children who are suffering from measles in order to prevent the spread of the disease, at least to people in whom an attack of the disease is likely to be followed by disastrous results. The details which should be carried out in order to accomplish this are not very different from those applicable to the prevention of scarlet fever, as given in *THE JOURNAL*, March 4, p. 667.

The contagious element of measles appears to have less vitality and to resist the ordinary measures of disinfection, including sunlight and fresh air, much less strongly than does the contagium of scarlet fever. The contagion of measles seems to exist very extensively in the secretions from the nose, throat and mouth, and the disease seems to be especially contagious during the period when the catarrhal symptoms are manifest, but before the cutaneous eruption appears. This increases the difficulty of enforcing efficient quarantine, for ordinarily, before the eruption appears, the child is believed to be suffering merely from a cold, and by the time the eruption appears and the quarantine is enforced many children have been exposed to the disease. When the disease is prevalent, children who show symptoms of a cold in the head should be suspected of perhaps having measles and should be promptly quarantined, but at the beginning of an epidemic it is rare that a child will be placed in quarantine before the eruption has appeared.

The general rule that well children should be kept apart from sick children is not usually followed with reference to children who are suffering from catarrhal affections of the nose and throat. When the rule is extended so as to apply to these patients, both whooping-cough and measles will be less rapidly passed around among the children.

The measures enumerated as applicable to scarlet fever and which are also applicable in cases of measles may be briefly summarized as follows:

The isolation of the patient in a remote room of the house.

The selection of a single immune person to care for the patient.

The wearing by the physician of a linen or rubber coat, when he visits the patient, which is removed outside of the patient's door.

The destruction of books and toys, which have been used by the patient, at the end of the period of quarantine.

The disinfection of dishes and clothing before they are removed from the sickroom.

At the end of the period of quarantine, which in the case of measles unattended by complications should be three weeks, the bathing and shampooing of the patient, and dressing him in fresh clothes.

The disinfection of the room, after it has been vacated, by the vapor of formaldehyd and by exposure of the room so far as possible to fresh air and sunshine.

The carrying out of these rules is a duty which every head of a family owes to the community, and especially to his neighbors who are at either extreme of life, or who are in delicate health. Such preventive measures should be enforced not only by the physician, but also by the sanitary authorities of the town.

As has just been said, sunshine and light are essential to the killing of the germs of all disease, and especially of measles; hence the room of a patient suffering from measles *should only rarely be kept dark during the day*. The patient's eyes may be efficiently protected from light by blue or smoked glasses.

The prolonged cough of measles after the period of quarantine is over should be treated as though the patient had incipient tuberculosis, and then the number of secondary deaths from measles will be cut in half.

OXYURIS VERMICULARIS: PIN-WORMS

The pin-worm, thread-worm, or seat-worm, as it is commonly known, is the most frequent intestinal parasite of man. It occurs frequently in children, but is also found in adults, in whom it may continue to cause the most annoying symptoms for a prolonged period.

The most common symptom is itching about the anus, which is due to the presence of the worm in this locality. It may, however, migrate to adjacent parts, causing also pruritus vulvæ which in turn may lead to masturbation. This itching comes on in the evening or at night after the patient has retired. It frequently causes restlessness and disturbance of sleep. It may interfere with the appetite and nutrition of the patient, causing anemia and emaciation. Less often it produces more serious nervous disturbances, and rarely even convulsions.

The male worm is smaller in size than the female, the latter being about three-quarters of an inch in length, and the male about one-fifth of an inch.

The eggs are taken into the mouth with the food or from the fingers which may become infected during the scratching caused by the itching. Passing into the stomach, the eggs hatch out and the worms develop and pass into the small intestine, and from there into the large intestine and rectum, where the female deposits its eggs in immense numbers, frequently passing out from the rectum to the anus for this purpose.

The treatment should be internal, local, and general. The internal treatment should be directed toward removing the parasite from the intestinal canal as rapidly as possible. For this purpose magnesium sulphate is perhaps the simplest remedy, and it is usually efficient. Calomel is preferred by some, and should be given in a good sized dose, as, for instance, 5 grains for an adult. Santonin has been recommended, but on account of its toxic effects should not be employed, except in obstinate cases.

The local treatment consists of rectal injections of various sorts. Water is very destructive to both the worms and the eggs, and in many cases copious injections of water are all that is necessary to effect a cure. Commonly recommended are infusions or decoctions of quassia, made by steeping one ounce of quassia, powdered or in chips, in one pint of hot water. When this has become cooled to the temperature of the body, a portion of it may be injected into the rectum and retained, if possible, for from ten minutes to half an hour. In many cases injections of warm soapsuds have proved

efficacious. In cases which resist these remedies, a solution of the corrosive chlorid of mercury of the strength of 1 to 10,000 may be used. In using these injections it is necessary to inject as large an amount as can be retained with comfort. Young children cannot usually be expected to retain more than from 2 to 4 ounces. Adults can frequently readily retain from half a pint to a pint, especially if the hips are raised; or the patient may be given a colon wash. The larger injections are desirable in order to distend the rectum thoroughly and to remove the mucus in which the worms find an agreeable habitat.

If the itching and scratching about the anus have resulted in congestion and thickening of the skin, the subsequent itching may be irrespective of the presence of the parasite. For this condition the official unguentum phenolis (a 3 per cent. ointment of phenol) may be employed with benefit.

As the persistence of the parasite in the intestine is favored by an unhealthy condition of the mucous membrane, general treatment should be directed toward restoring the intestinal canal to a healthy condition.

The prophylactic treatment, which is of considerable importance, embraces frequent bathing of the parts with soap and water, thorough washing of the hands after they have been used in scratching or other manipulations, and boiling of the clothing and bed-clothing to destroy any eggs which may be deposited on them. The treatment with enemata should be repeated daily until the trouble is thoroughly removed. This can be definitely determined by microscopic examination of the feces, which should show entire absence of the ova.

Before the treatment of the individual patient is complete, inquiry should be made in regard to the presence of the parasites in other members of the family, including not only the children and parents, but also nurses and other attendants.

Essentials of the Campaign Against Tuberculosis.—Stating that tuberculosis is "a disgrace to our civilization," in a recent address Ex-Governor Charles E. Hughes of New York, now a justice of the Supreme Court of the United States, outlined the essentials of the work against tuberculosis. He said: "Here is a chance for the cooperation of all, no matter what their political views may be, no matter what their theories of government may be. I recognize the necessary limitations of governmental action. And here, not only must we have the action of government within its proper sphere, but this must be supplemented by the cooperation of those voluntary agencies which work outside the domain of government. Necessary information can be brought home to those who are in unfortunate circumstances which are remediable, so that they may know that the conditions may be a little less unfortunate by attention to a few simple rules with regard to hygiene and the proper ordering of life and its surroundings. Those who house other people and profess to have some patriotic pride in our institutions, can more clearly realize what they should do in the interest of the entire community in providing decent abodes for those from whom they take rent. Local authorities in our cities must appreciate the importance of securing prompt and full information in regard to cases and the faithful execution of our health laws so that this shall not be a paper program, but a realized advancement. In our counties the boards of supervisors are having opportunity, and should realize the necessity of improving conditions. This work must find its support in the sentiment of our communities. You cannot carry it by main strength against the will of the people. The people must be brought to realize what can be done, what is practicable, and support it because they understand it. Every man and every woman who knows the situation can be a conductor of electrical energy and give this movement its needed power."

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, MARCH 11, 1911

INFECTION AND ANAPHYLAXIS

As a result of work on anaphylaxis, the belief is gaining ground that many of the toxic processes of infections are to be explained on this basis. Rosenau and Anderson,¹ among others, have shown that true anaphylaxis can be produced to bacteria as well as to other proteid-containing substances, and von Pirquet and Schick² some time since went so far as to conclude that "the pathogenic substance has in itself no disease-producing effect; but rather, the symptoms of disease appear only when changes effected in the pathogenic substance, by the host, have attained a certain degree." Needless to say, such infections as produce true toxins, as diphtheria and tetanus, do not come under consideration, and the theory is particularly applicable to those diseases in which we were formerly accustomed to assume the existence of bacterial endotoxins as the cause of the process. The essential difference from this latter view is the belief that the bacteria in themselves have little or no toxic effect; that this results from an interaction of bacterial proteid (antigen), antibody and complement, the two latter being contained in the serum of the host. In this way the assumption of specific bacterial toxins with every infection becomes unnecessary; and the failure to obtain antitoxins with so many microorganisms is readily explicable.

It is evident that the phenomena of an acute anaphylactic reaction—convulsions associated with air hunger—are rarely, if ever, those of an infection. But the much more gradual addition of the foreign material in the latter case affords a satisfactory explanation for this difference. Indeed, Friedberger,³ by injecting sensitized animals with repeated small doses of the foreign proteid, was able to produce continuous and remittent and intermittent fevers, and he concludes that "anaphylaxis is an extreme and acute form of infection, and infection a milder, more protracted form of anaphylaxis."

Neufeld and Dold⁴ have taken up the problem of the possible identity of bacteriolytic antibodies with those associated with the process of bacterial hypersensitiza-

tion. In the case of the cholera vibrio, anaphylaxis occurred only when lysis of the organism by the immune serum was prevented by keeping the mixture of organism and sensitized serum at freezing temperature. When lysis was allowed to take place, the resulting mixture produced no acute toxic effects. With the pneumococcus, on the other hand, there was no bacteriolysis to be guarded against, and the anaphylactic reaction was obtained regardless of the temperature at which the mixture was kept. Solution of this organism by autolysis, or by chemical means, gave inactive mixtures. Hence it would appear not only that the antibodies associated with bacteriolysis and with anaphylaxis are distinct from each other, but that the one process places itself in direct opposition to the other. So that bacteriolysis acts to some extent as a protective measure against anaphylaxis; and in the case of a disease like cholera, the clinical picture becomes the resultant of two opposing forces—the bacteriolysis in part preventing acute anaphylactic intoxication, but meanwhile liberating a noxious, but less acute endotoxin.

It is of course obvious that diverse bacteria can produce similar clinical conditions depending largely on the localization of the infection. And the present theory, departing largely from the assumption of specific toxins for the different organisms, gives this an adequate explanation. The theory also explains nicely the incubation period of disease, as being the interval elapsing between the actual invasion by microorganisms and the formation of a sufficient quantity of antibody to produce the toxic effects resulting from the combination of antigen plus antibody.

SEX AND THE INSTRUCTION OF THE YOUNG

The attitude of the modern world toward the problem of sex, and especially of education in the hygiene and ethics of sex, seems an anomalous one. The subject has always been surrounded with mystery; but simpler and more primitive peoples find life full of mysteries, which they confront smiling and unabashed. We have few mysteries left to us; and the antiquated taboos which overshadow this one appear scarcely sufficient to account for the feeling, curiously compounded of dread, aversion and curiosity, which any discussion of the subject seems to arouse in most people to-day. The pagan world of antiquity frankly glorified sex, even in its sensual aspect; the asceticism of the middle ages rigorously condemned all aspects as sinful. The modern world professes to repudiate both doctrines; but the two seem to mingle in the ill-balanced and feverish sensitiveness on the subject often betrayed to-day, both in silence and in speech.

For a long time the outwardly predominating factor of asceticism has conspired with a host of shadowy, undefined motives to keep all enlightenment on the subject from the young with the same fearful zeal that

1. Hyg. Lab. Bull., 1907, 36.

2. Wiener klin. Wchnschr., 1903, xvi, 758.

3. Berl. klin. Wchnschr., 1910, xlvii, 1922.

4. Berl. klin. Wchnschr., 1911, xlviii, 55.

guards a powder-magazine from sparks. Experience and observation have taught, however, that the dreaded explosive force in humanity is not, like the powder, dead until awakened by a spark from outside; rather it is like live steam, dangerous only if not provided with the proper outlet. The ban of silence has, therefore, been lifted, and organized effort has set unflinchingly about the task of revealing the consequences, frightful or loathsome though they may be, of transgressions against the hygiene and ethics of sex.

Even yet, however, the ascetic view predominates; the destructive aspects of this ever-present natural force are the ones emphasized. That impulse which the Greek saw as a part of the vivifying forces of an august yet genial Nature, typified by the fertile earth and the quickening rain and sunshine—that impulse which has directly inspired much, if not most, of the greatest efforts in all forms of art, and which in subtler ways has entered into the greatest achievements of humanity—that impulse which, after all, not only perpetuates, but forever binds together the race with ties growing out of family, kinship and friendship—that impulse is presented to the impressionable mind of youth chiefly in its perverted aspects—aspects which shock and repel. Is there danger of permanently distorting the point of view—of infecting the susceptible youthful mind with suspicion and pessimism and, indeed, of actually degrading its ideals and possibilities?

This question has been stated clearly, forcibly and thoughtfully by W. D. Parkinson.¹ "The merit of truth," he says, "is not in its nakedness. To depict in startling colors the awful consequences of vice and to dwell on its equally appalling prevalence have never been found effective in advancing the standards of virtue. Indeed, these are the very measures oftenest employed by the two most active promoters of vice—the quack who deals in startling consequences and the evil companion who is always ready with the assurance, 'They all do it.'

. . . Fear of consequences is not the ultimate appeal to a robust nature. No degree of danger will deter a youth from venturing into experiences which he believes he is to share with those who constitute the real world; and vice always claims to be the real side of human life.

. . . Society is so permeated with this tone of patronage toward the poor fellow who has not sown and reaped wild oats that no threatened consequences can avail much with a youth who would rather be penalized than patronized. The half-contemptuous attitude toward innocence, maintained so conspicuously by the more outspoken portion of the public, is more impressive to the average youth than all the scareheads that benevolence may display in his path. For every man desires to be a sharer with other men. Unless he can be assured that reality reaches as far upward as it does downward, that the upper world is as rich to the explorer as the nether and affords at least equal manly companionship, he will

cast in his lot with the underworld and take his chances with his fellows in spite of all warnings."

This touches the root of the matter. The negative sanctity of the ascetic—the insulated safety of the anchorite—make no appeal to most young people, and especially to boys, who look forward to living in a "man's world." Warning alone is not likely to save any but the weaklings, if indeed it saves them. The salvation of more robust natures must be positive. There is much wisdom, therefore, in Mr. Parkinson's assertion that the sex relationship should not be presented either as a menace in itself or as a mere matter of personal or social hygiene, but as "one of the fundamental—perhaps the most fundamental—of all the factors of social and spiritual progress." His article is worth reading, and his conclusions are worth pondering over.

THE LENTICULAR ZONE AND ANARTHRIA

The aphasia storm which had its origin in the "Revision" paper of Marie in 1906, and which broke with such violence in the discussion before the French neurologic society in 1908, has now almost passed, leaving the situation somewhat clearer, but still possessing most of its ancient landmarks.

It will be recalled that Marie maintains that Broca's convolution plays no rôle whatever in the zone of language; that aphasia is always due to a lesion of Wernicke's zone, and is always the "sensory aphasia" of the classical adherents; and that a lesion of the lenticular zone, of which he makes a tentative description, produces an anarthria—which anarthria plus the sensory aphasia equals the classical Broca's aphasia.

Thus: An isolated lesion of the zone of Wernicke=aphasia of Wernicke; an isolated lesion of the lenticular zone=anarthria; a lesion of the two zones=aphasia of Broca.

Dejerine stood by the classical conceptions, as did also Liepmann, Ziehen, Bianchi, Grasset and a host of others; v. Monakow took a median position, while Marie, Souques, Moutier and others defended the new theses in whole or in part.

It soon became evident that Marie's first contention was false. It has been proved without doubt that Broca's convolutions do play an important rôle in the function of language. The second contention never contained anything particularly new, save the added claim made by Marie that there was always an intelligence defect involved in Wernicke's aphasia; this has been effectually disproved by a number of recent studies. Now Mahaim¹ and Van Gehuchten² enter the lists and show that lesions of the left lenticular zone in right-

1. Parkinson, William D.: Sex and Education, Educational Rev., January, 1911, p. 42.

1. Mahaim: Un cas d'aphasie motrice et sensorielle sans hémiplegie, avec intégrité de l'opercule, de l'insula, et du noyau lenticulaire, Bull. de l'Acad. roy. de méd. de Belgique, December, 1909, and Feb. 27, 1910.

2. Van Gehuchten: Lésion de la zone lenticulaire gauche sans troubles de la parole, Le Névraque, Dec. 20, 1910.

handed individuals may occur without anarthria—in fact, without any trouble with speech whatever.

Both Mahaim and Van Gehuchten have studied cases by means of serial microscopic sections in which the "lenticular zone," as described by Marie, has suffered almost total destruction, and yet there have been no speech disturbances of any kind. Furthermore, Van Gehuchten analyzes in detail the proofs advanced by Moutier in his thesis on which Marie bases his contentions, reproducing all his pictures, and shows that Marie's anarthria is really an anarthria of projection.

Thus, while aphasias still need more extended study by serial microscopic sections in order to clear up many vexed points regarding the rôle played by a number of projection and association paths in the function of language, it would appear that the final *coup de grâce* has been given to the last of Marie's primary contentions in his initial famous "Revision."

THE CIRCULAR AROUND THE BOTTLE

The Council on Pharmacy and Chemistry has certain rules governing the admission of proprietary and other medicinal products to New and Nonofficial Remedies (N. N. R.). A large number of preparations are ineligible to N. N. R. because they are exploited in non-conformity with Rule 4, which reads:

"Indirect Advertising.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is said to be indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to vaccines and antitoxins, or to directions for administering or applying remedies where similar immediate, heroic treatment is indicated.)"

In other words it is held that circulars describing the diseases in which the remedy is useful are distinctly detrimental to public health; the tendency always is to exaggeration, not only as to their value, but also as to the variety of diseases in which the remedy is indicated.

A considerable proportion of the medical profession may still be charged with heedlessly playing into the hands of the "patent-medicine" man. The "circular around the bottle" is a striking instance of this. The patient has placed in his hands a preparation in the "original bottle" wrapped around which is a circular containing a comprehensive list of all the ills and pains and various derangements for which that product is supposed to be valuable. He is also given with the same package a supplementary list of a dozen or so of other prescriptions, and what diseases they will cure. He is at once advised how he may at all times and of his own initiative obtain these wonderful remedies. And all this with the (presumed) full endorsement of the family physician! Could anyone devise or imagine a more effective way of starting a patient on the road to self-drugging? And is not this the nature and purpose of the fanciful "circular around the bottle?" There are dozens, probably scores, of preparations which have never

been advertised directly to the public and yet which are bought by that public, over the drug store counter, like the rankest of "patent medicines." These self-druggers have been made such by the carelessness of physicians who have prescribed "original packages" of such proprietaries as those under discussion. It is necessary only to call to mind such preparations as Antikamnia, Mica-jah's Wafers and Glycothymoline as some of the most flagrant examples, to realize the evil of prescribing a product having a "circular around the bottle."

Nevertheless, the Council has been assured by several manufacturers that their preparations would be unsalable if they omitted this circular; that physicians would not use or prescribe these preparations without the circular, and—the saddest part of it all—these manufacturers appear to be serious and honest in their contention. What is the meaning? Do physicians really need the circular around the package or bottle to tell them why they are using this or that drug? Or does the circular confer some peculiar potency on the drug which would be lost if the circular were omitted? Or is the circular one of those bad but seductive habits which we would rather suffer than do without? Or, finally, are these manufacturers mistaken in their estimate of what physicians really want?

THE SECRET COMMISSION EVIL

The giving and receiving of secret commissions has been discussed with increasing frequency for several years. Although the existence of this practice has long been recognized, we have always believed that it has been confined to a comparatively small number of physicians. Condemnation of this evil by the Association, by THE JOURNAL and by various medical societies, as well as occasional local investigations and exposures, have apparently failed to abolish it. Recent discussion shows that the better men in the profession appreciate the importance of the problem and the need of its solution by physicians. In this issue appear two articles on the subject, one the president's address before the Western Surgical Association,¹ and the other an editorial from *Colorado Medicine*.² Both of these articles are severe and carry the impression that the practice is widespread. We are loath to believe that conditions are as bad as represented. Yet this evil, if existent to any extent, should be freely discussed and unsparingly condemned. Its correction is of vital importance to the public as well as to physicians. While it has long been recognized as existent by the profession, the rapidly growing interest of the public in professional matters and the increasing disposition of physicians to take the people into their confidence, have apprised the public, apparently for the first time, of the existence of this condition. Now that the people are informed, the evil must be

1. THE JOURNAL A. M. A., this issue, page 725.

2. *Colorado Medicine*, February, 1911; see THE JOURNAL, this issue, page 770.

speedily corrected by the profession, for if it is not, the people themselves will demand the right to suppress it.

It is significant that, in spite of the specious arguments brought forward in defense of this practice in professional circles, no one has attempted to defend it before the public. The misleading excuses of "paying the attending physician for his time," "recognizing the diagnosis as of equal value with the operation," and other fallacious arguments which have been advanced in extenuation of this practice, will count for nothing with the public. Logically, they belong in the same category as the "poor boy" excuse for cheap medical colleges and night schools. Popularly, they will have much less weight, since the layman does not recognize, as yet, the importance of medical education to him and to his family, but does see, in the secret payment of commissions, that the patient, instead of being a sacred trust, is made an article of merchandise, whose money is divided without his knowledge.

The issue is so plain that it needs only to be stated to carry conviction to the unprofessional mind. It has been condemned and denounced repeatedly by medical organs and organizations and by high-minded medical men everywhere. Yet, we are told, the evil exists and is becoming more prevalent. If this be true, there is but one remedy, the remedy which in recent years has corrected many other pernicious and secret practices: Graft in the medical profession must receive the same treatment as graft in politics or in business—publicity. If the people and the profession are given the names of surgeons and specialists who offer secret commissions and of physicians who accept them, this wretched business will soon come to an end.

Apparently there is one community in which this remedy is to be applied. The *Denver Times*, an evening paper, which has for a long time excluded all objectionable medical advertisements, says editorially in a recent issue:

... It is disquieting to learn from the organ of the Medical Society of Colorado that many physicians and surgeons are commercializing their practice through that system of secret rebates known as "fee-splitting." The method is about as follows: A patient consults a physician. The physician discovers that the case calls for the knowledge of a specialist or operation by a surgeon. Ethically it is the duty of the physician to seek the services of the most highly qualified man. But the sight of some possible dollars blinds the vision to ethical considerations and the patient is sent to the specialist or surgeon who agrees to pay to the physician the largest percentage of his fee. It is a debasing custom of course; it admits of neither extenuation nor excuse; but it seems to be a custom to which numerous physicians and surgeons of repute are addicted, and we believe that it can only be abolished by the publication of the names of the men practicing it. Some of those names we have obtained and authenticated already; we are investigating others now; and when the list is tolerably complete we will print it and gladly face the libel suits that such publication may involve. The men who do this kind of thing are well known already to the men who do not; in professional circles their names are a matter of common gossip; but they should be known equally well by the lay public, and we hope, shortly, to be able to give them the kind of advertising they merit.

And yet in this question, as in other complicated social problems, the public itself is to a certain extent to blame for existing conditions. In the majority of communities, the family physician is to-day receiving the same compensation which was paid his professional forefathers two or three generations ago; and this in spite of the enormous increase of the cost of professional education and of the standard of living, as well as of the quality of medical services. Whether wisely or not, the physician fears in many cases to raise the price of his services or to charge on any other basis than the time-honored, but economically absurd, basis of the number of calls made on the patient. The result is that in many cases the patient pays willingly and promptly the large fee demanded by the surgeon, but settles his bill with his family physician grudgingly and after long delay. The family physician often gives far more in time and services to the patient than he can expect to receive compensation for; and he has consequently turned to the surgeon to receive as a gift what he should have received from the patient as a right. If the public will compensate the family physician fairly and promptly for his services and will insist that all transactions between the physician and the consultant be carried on with the full knowledge of the patient, the cause and the possibility of this evil will speedily disappear. Physicians and surgeons must recognize the existence of this evil, must admit the rights of the public in the matter and must lead the way in abolishing it, but the public, on its part, must recognize the conditions which have given rise to this problem, must do its share to help the profession to solve it; and must support the family physician, both financially and morally, so that he may be able to deal honestly and fairly with his patients.

Current Comment

THE COST OF CLEAN MILK

On the principle that one cannot get something for nothing, it must be conceded that one result of the requirements for a cleaner, purer milk-supply will be an increase in its cost to the consumer. Official recognition of this fact is found in the report of the Philadelphia Milk Commission which recently investigated the matter of the milk-supply of that city. This report seems to cover fully the production and distribution of milk in all their phases, as relates to Philadelphia. The commission believes that milk can be produced and distributed under proper regulations with fair profit to all concerned at an advance of one cent a quart over present prices, making the price nine cents. They say that "the public is fully awakened to the danger of milk as received to-day, and will accept a proper increase in price to secure the protection that proper regulations will give them." They believe that though this might seem to be hard on the poorer consumers, really they will be most benefited, as at present they receive much milk that is unfit for consumption, and the amount

which they will save by decreased illness on account of having a healthful milk-supply will more than compensate for the increased cost. They recommend that this increase should go to the farmers, who should receive not less than five cents a quart for milk produced under proper conditions. To this allotment, of course, the milk distributors demur. It is probable that the objection of the consumer to an increase in the price of milk has hitherto been because it benefited only the distributor, who already received the larger share of the selling price, for the smaller share of the labor and expense. The findings of the Philadelphia commission will no doubt apply, with modifications, to the milk question elsewhere, and their conclusions that the farmer should get more, and that the consumer will be willing to pay more, for clean, safe milk, will be generally accepted.

PLAGUE IN CHINA

Dr. Mallowney's account in this issue of the plague in North China illustrates one disadvantage of western civilization superimposed on a somewhat unprepared eastern population. The spread of plague would probably have been much less rapid in that section, as has been the case in the Hunan province in the south, had it not been for the existence of railroad communication. This, together with the insanitary conditions existing in the Chinese cities, and the unreadiness of the government to cope with the epidemic, make the condition there a very serious one. An infection like plague may readily spread along the main arteries of communication that have been opened up in such a country as China. The disease has continued to spread in many provinces, according to reports later than that of Dr. Mallowney, and probably will die out only after it has exhausted the susceptible material. Famine and rioting are adding to the horror of the situation and the extent of the devastation cannot be predicted. The "yellow peril" with this complication is a very real one and may be a matter of international concern at any time.

EASY WRITING VERSUS EASY READING: A HINT TO AUTHORS

The considerable amount of work required of the editor in preparing manuscripts for publication has led the editor of the *Journal of the Indiana State Medical Association* to voice a protest against the carelessness of authors in sending in their papers. The indictment is a true one. Writers could relieve the editor of much unnecessary work by a little care; and since, after all, no one should be so competent to set forth a man's own ideas and experiences as himself, such care would result in a better presentation of the subject than can be given by the most careful reviser. We refer particularly to case-reports, which are often presented in varying degrees of unprintable condition, sometimes being sprinkled with abbreviations devised by and intelligible only to the author, and sometimes merely defiant of grammar and syntax, but frequently requiring what amounts practically to rewriting. It would seem that the reports usually consist of disjointed, fragmentary notes jotted

down at the time of examination, without revision, with verbs omitted from sentences, words, clauses and phrases separated by periods, the whole sounding like a telegram, with every rule of construction and punctuation violated. It would be no more difficult to make a case-report a plain, consecutive narrative, conforming to the rules of good style, than to write the remaining text of the article in the same manner. The little time required would be well spent, for the "easy writing" which, as Byron said, "makes d—d hard reading," might almost as well not be done at all. We endorse the sentiments of the editor from Indiana.

Medical News

ALABAMA

Tuberculosis Ward Equipped.—W. E. Colwell, Birmingham, has donated equipment for a ward in the new sanatorium established at Red Mountain by the Birmingham Antituberculosis Society. Ten of the twelve rooms have already been furnished and the patients were removed to the institution last week.

Society Elections.—Dale County Medical Society held its annual meeting in Ozark, January 11, and elected the following officers: president, Dr. Robert D. Reynolds, Jr., Ozark; vice-president and censor, Dr. Andrew J. Morris, Newton; secretary-treasurer, Dr. M. O. Grace, Ozark; censors, Drs. Erastus B. Ard, Ozark; Samuel M. C. Howell, Midland City; William D. Mixson, Ozark, and Henderson L. Holman, Ozark; county health officer for four years, Dr. Erastus B. Ard, Ozark; health officer for Ozark, Dr. M. O. Grace; for Midland City, Dr. Samuel M. C. Howell; for Pinecard, Dr. R. G. Cary; for Newton, Dr. James E. Stokes, and for Arton, Dr. C. R. Athey. —At the annual meeting of the Barbour County Medical Society held in Eufaula, the following officers were elected: president, Dr. John S. Tillman, Clio; vice-president, Dr. Benjamin F. Jackson, Clayton; secretary-treasurer, Dr. William P. McDowell, Eufaula; county health officer, Dr. Clarence Long, Comer; county physician, Dr. James J. Winn, Clayton, and councilor, Dr. Benjamin F. Bennett, Louisville. —Coosa County Medical Society has elected the following officers: president, Dr. Julius Jones, Rockford; vice-president, Dr. S. F. Jones, Rockford; health officer for five years, Dr. William H. Moon, Goodwater, and censor, Dr. Eugene Argo, Goodwater.

CALIFORNIA

Additional Gift to Hospital.—Mrs. Whitelaw Reid has given an additional \$60,000 to the Red Cross Guild Hospital, San Mateo, which was erected as a memorial to her parents, Mr. and Mrs. D. O. Mills.

Election.—At the annual meeting of the Humboldt County Medical Society, held at Sequoia, the following officers were elected: president, Dr. John N. Chain, Enreka; secretary, Dr. John M. Mill, Arcata; and treasurer, Dr. Francis R. Horel, Arcata.

Dr. Royer is Not Dead.—In the *Southern California Practitioner*, December, 1910, appeared the death notice of Dr. Daniel Franklin Royer of Orange, and on this authority his name was included among the dead in this journal. Dr. Ida B. Parker of Orange informs us that the notice was incorrect, and that Dr. Royer is alive.

COLORADO

Commissioners Approve Dr. Cassidy's Plan.—The board of commissioners of Denver County, on February 9, placed itself on record as favoring Dr. Elizabeth Cassidy's move for more careful selection of the medical staff of the city and county hospital, by adopting resolutions endorsing the provisions of the bill now in the hands of committees in the house and senate, which place the appointive power in the faculty of the state university, medical department.

Personal.—Dr. Leonard Freeman, Denver, who was recently operated on for appendicitis at St. Joseph's Hospital, is reported to be convalescent. —Drs. Henry W. Hoagland, P. Oliver Hanford and Gerald B. Webb, Colorado Springs, have

been appointed to the medical staff of Sunny Rest Sanatorium.—Dr. James C. Todd, Denver, has been appointed professor of pathology and secretary of the first and second year divisions of the University of Colorado Medical School, Boulder.

GEORGIA

New Officers for Medical Board.—At the February meeting of the medical board of Grady Hospital, Atlanta, the following officers were elected: president, Dr. John C. Olmstead; vice-president, Dr. F. Phinzy Calhoun; and treasurer, Dr. L. Benjamin Clarke.

Long Memorial Infirmary.—Crawford W. Long Infirmary banks were opened at various places in Athens, March 2. These take the place of a personal canvass for the establishment and endowment of a Memorial Infirmary for the University of Georgia in honor of the late Dr. Crawford W. Long.

District Society Election.—At the fourth annual meeting of the Tenth District Medical Society, held in Augusta, February 14, the following officers were elected: president, Dr. Joshua R. Beall, Blythe; vice-president, Dr. William W. Beatty, Jr., Augusta; and secretary-treasurer, Dr. George A. Taylor, Augusta (reelected). The society was entertained at a banquet by the Richmond County Medical Society in the evening, when addresses were made by Dr. Joseph N. McCormack, Bowling Green, Ky.; Dr. Albert Vanderveer, Albany N. Y., and others. The society adopted a resolution highly commending the faculty of the medical college for its efforts in behalf and in connection with the college-hospital movement.—The annual meeting of the Fourth District Medical Society was held in Carrollton, February 21. Addresses were made by Dr. Joseph N. McCormack, Bowling Green, Ky., and Dr. Eduard C. Davis, Atlanta, president of the Medical Association of Georgia. The following officers were elected: president, Dr. Charles A. Dexter, Columbus; vice-president, Dr. H. J. Goodwyn, Roopville; and secretary-treasurer, Dr. Homer Boatright, Carrollton. The next meeting of the society will be held in Greenville, September 19.

ILLINOIS

Maternity Hospital for Aurora.—The Sisters of Mercy announce that they have purchased the Ryburn Flats, with the surrounding property, for \$18,000, and will establish a maternity hospital to be known as St. Joseph's Infirmary.

Hospital Staff Resigns.—Fifteen of the eighteen members of the medical staff of Oak Park Hospital resigned March 3, the cause assigned being the interference with the duties of the staff, by the Sisters of Misericordia, who are in charge of the hospital.

Personal.—Dr. Jesse M. Threadgill, New Douglas, was recently operated on in Rebecca Hospital, St. Louis, for a ununited fracture of the arm, due to a runaway accident, January 30.—Dr. Paschall N. Bowman, Springfield, charged with manslaughter, is said to have been freed from that charge, February 27, and committed to the Jacksonville State Hospital.—Dr. Lucinda H. Corr, Carlinville, was awarded \$1,000 in her suit for damages against the Chicago and Alton Railway, for injuries received in a wreck.

Commend Association for Education Work.—The Williamson County Medical Society, at a special meeting held for the purpose, February 28, passed resolutions commending the American Medical Association for its services in elevating American medical standards and urging further effort until standards of preliminary education and of medical practice in the United States shall be fully equal to those of Europe. The preambles recite that there are many unnecessary medical colleges which are run for commercial purposes, and that, because of competition between these colleges, many incompetent and even illiterate physicians are graduated; and that these factors together with commercialism in professorships and lack of stringency in examinations are causing harm to the general practitioner, without any benefit to the public.

Chicago

Money for Sanatorium.—In the state tax levy for 1911 is included an item of \$442,184.64 for the Municipal Tuberculosis Sanatorium.

Many Appointments to Medical Reserve Corps.—The President has sent to the Senate the nominations of sixty-seven more physicians of Chicago as first lieutenants of the Medical Reserve Corps.

Site for Tuberculosis Sanatorium.—The city of Chicago has taken title to the remaining 60 acres of the 160-acre tract purchased for the Municipal Tuberculosis Sanatorium at North Fortieth and Bryn Mawr avenues.

Trouble at Hospital.—As a result, it is said, of disloyalty and insubordination on the part of members of the staff of Mary Thompson Hospital, seven members have been dismissed. The physicians in question claim that the trouble lies in the appointment of a lay superintendent, and in the overbearing treatment of the physicians by the superintendent.

Personal.—Dr. David J. Davis of the Memorial Institute for Infectious Diseases has been appointed pathologist to St. Luke's Hospital.—Dr. Katherine B. Rich has been appointed assistant city physician, and began her duties February 24.—Dr. B. Brindley Eads, who was operated on at the Presbyterian Hospital, March 6, is making satisfactory progress toward recovery.

Society to Support State Institution.—The council of the Chicago Medical Society, at a meeting February 14, unanimously adopted resolutions endorsing the request of the trustees of the University of Illinois for an annual appropriation of \$100,000 for the equipment, maintenance and extension of the medical school, and appointed a committee to assist in presenting the matter to the legislature and the governor.

Contagious Disease Hospital.—The common council has decided to add the fund of \$75,000 bequeathed to the city by the late Mrs. Annie C. Durand for the establishment of a public bathhouse, to another fund, the combined fund amounting to about \$200,000, to be used for the construction of a hospital for the treatment of contagious diseases, and an arrangement has been made with the trustees of the McCormick Memorial Institute for Infectious Diseases, whereby that institution will meet any expense of maintenance not covered by the Durand endowment fund.

To Avoid Undesirable Newspaper Publicity.—At its last meeting, the Council of the Chicago Medical Society adopted certain preambles and resolutions relative to newspaper publicity. The Council expressed the opinion that reporters should be excluded from all meetings of medical societies during the consideration of all strictly scientific matters, except those bearing on sanitation, public policy, hygiene or sociology; also that abstracts of such papers that come within the range of subjects considered as proper for publication in the public press be handed to the secretary, before or at the meeting, to be given by him to the press.

INDIANA

Contract for Hospital Let.—The contract for the erection of the new St. Vincent's Hospital, Indianapolis, was let March 2. The main building will be five stories in height and of steel, fire-proof construction. There will be two diet kitchens on each floor, and there will be fourteen operating rooms in the building, the entire top floor being given up to surgical purposes.

Leaves Estate to Hospital.—Hon. David Darwin Dykeman has left the bulk of his estate for the establishment of a city hospital in Logansport, to be known as the Mary Dykeman Memorial Hospital, to be in charge of a hospital commission to be composed of three members, one to be elected by the city council, one by the commissioners of Cass County, and one by the circuit court judge.

Twin City Physicians Meet.—A meeting was called in Indiana Harbor, February 21, which was attended by most of the physicians of that place and East Chicago. The object of the organization, which is to meet semi-monthly, is to establish a schedule of fees and to promote a more friendly feeling among physicians of the twin cities. Dr. George Orf, Indiana Harbor, was elected president of the new organization.

Personal.—Dr. Edward J. McOscar, Fort Wayne, has returned from a trip to Panama and Central America.—Dr. Matthias Muhlhausen, Evansville, is reported to be critically ill.—Dr. Orange G. Pfaff, Indianapolis, who has been seriously ill with septicemia due to an operation wound, is convalescent.—Dr. William H. Williams, Dale, has retired from the practice of medicine.—Dr. Walter M. McGaughey, Greencastle, sustained a fracture of the arm, February 16, by back-fire of his automobile.—Dr. Charles W. Corey, Hartford City, dislocated his left arm in an automobile accident, February 14.—Dr. Alfred Henry has been appointed chief of the Free Tuberculosis Clinic, Indianapolis, vice Dr. William T. S. Dodds.—Dr. Walter H. Peters, Lafayette, who was operated on recently in Rochester, Minn., is reported to be convalescent.—Dr. Abraham G. Shortle, formerly of Indianapolis, has been appointed medical director of the Albuquerque (N. Mex.) Sanatorium.—Dr. William H. McClurg, Kokomo, while crossing a railroad track recently, was struck by a passing train but was not seriously injured.

KENTUCKY

Sanitary School Incorporated.—The Louisville School of Sanitary Instruction has been incorporated by Drs. W. E. Grant, Ezra O. Witherspoon and William E. Gary.

Gift to Hospital.—The Jewish Hospital Association, Louisville, has received as a gift from Mr. Bernard Bernheim 70 feet of ground on Kentucky Street, adjacent to the hospital, which is valued at more than \$10,000. The property includes a new two-story brick residence. The house is to be used as a nurses' home, and is to be called the Bernard Bernheim Annex.

Want Public Abattoir.—Dr. W. Ed Grant, city health officer of Louisville, has called a conference of all the butchers in the city to discuss the establishment of a public abattoir to cost in the neighborhood of \$150,000. A joint investigation by the City Health Office and the State Pure Food Department has shown the slaughterhouses in the city of Louisville to be in a very insanitary condition.

Care of the Insane.—At the recent meeting of the State Board of Control of Charitable Institutions, a special committee of the State Federation of Women's Clubs advocated training school for nurses and attendants in state asylums for the insane, shorter hours of work and living rooms apart from those of the patients. At this meeting it was pointed out that there is no great need for an increased per capita allowance for the care of the insane, and it was also suggested that the names of the state asylums be changed to "state hospitals."

MAINE

Appeal for Bowdoin.—The president of Bowdoin College has issued an appeal to the alumni association for \$140,000 for the use of the medical department. The most pressing needs of the institution are new laboratories and improvements and hospital facilities for the establishment of a dispensary in Portland.

Society Meetings.—York County Medical Society, at its annual meeting, held in Biddeford, elected Dr. Fritz E. Small, Biddeford, president; Dr. Eduard C. Cook, York Village, vice-president; Dr. David E. Dolloff, Biddeford, secretary; Dr. Lawrence E. Willard, Saco, treasurer; Dr. Frank H. Hobbs, Waterboro, censor.——Kennebec County Medical Association, at its annual meeting in Bangor elected Dr. Richard H. Stubbs, Augusta, president; Dr. Donald B. Cragin, Waterville, vice-president; and Dr. Wellington Johnson, Augusta, secretary-treasurer.——At the annual meeting of Androscoggin County Medical Association, held in Lewiston, the following officers were elected: president, Dr. Alonzo M. Gracelon, Lewiston; vice-president, Dr. Louis C. Baribault, Lewiston; secretary-treasurer, Dr. Joseph W. Scannell, Lewiston; and censors, Drs. Laureat P. Ducharme, Ernest V. Call, and Harold E. E. Stevens, all of Lewiston.——Portland Medical Club, at its annual meeting, elected the following officers: president, Dr. Ambrose H. Weeks; vice-presidents, Drs. Daniel Driscoll and Harold A. Pingree; secretary-treasurer Dr. Harold J. Everett; and censors, Drs. Bertrand F. Dunn, and Thomas J. Burrage.

MARYLAND

State Society Meeting.—The annual meeting of the Medical and Chirurgical Faculty of Maryland will be held in Baltimore, April 26-28, inclusive.

Personal.—Dr. Henry P. Fahrney has been appointed physician of Montevue Hospital, Frederick.——Dr. Daniel S. Jenifer, formerly of Atlantic City, N. J., has begun practice in Towson.

Increase Capacity of Sanatorium.—A new administration building and two additional hospital wings will be erected at the Maryland Tuberculosis Sanatorium, Sabillasville, this spring, increasing the accommodation for patients from 200 to 400. The new building will be about 500 feet in length and two stories in height.

Baltimore

Enlarge Dispensary.—The directors of the Baltimore General Dispensary have purchased a site 25 by 61 feet and will erect on it a two-story and basement building.

Personal.—Dr. Arthur Marriott was seriously injured by the bite of a baboon which escaped from its cage at the Custom House, February 28.——Dr. Covington has resigned as a member of the staff of the Presbyterian Eye, Ear, Nose and Throat Hospital.

Gift to Children's Hospital.—Dr. James Lawrence Kernan has given to the Kernan Hospital and Industrial School for

Children a further gift of \$10,000, which will be applied to the building fund. The previous gift included a large colonial house and 60 acres of land.

Fined Under Drug Law.—Dr. John F. Lang, is reported to have pleaded guilty in the criminal court, March 2, to four indictments, charging him with unlawfully issuing prescriptions for morphin and cocain to habitual users of these drugs, and to have been fined \$50 and costs in each case, making a total of more than \$300.

The Diphtheria Situation.—As the result of the conference between the health department and medical staff of Johns Hopkins Hospital, a canvas of boarding houses in which students of the medical school live, was begun February 26, to determine the presence or absence of diphtheria. The city was divided into four groups and eight employees of the health department and four members of the hospital staff were detailed on this work. About 175 homes were visited and 1,700 cultures made. The total number of cases of diphtheria in the hospital up to March 4, was fifty-nine, including three physicians. There are also five cases of diphtheria at the Church Home. The dispensary has been closed to all cases except those of throat trouble. The office of the medical school and postoffice have been moved to the house adjoining the hospital. The Hebrew Hospital and Dispensary nearly opposite Johns Hopkins Hospital was closed to visitors and new patients, February 28, on account of the prevalence of the disease in that section. For the same reason all visitors have been forbidden entrance to St. Joseph's Home for Incurables, the Maryland Home and Hospital, and St. Agnes' Hospital. Visitors are also prohibited at Mercy Hospital, Maryland General and University Hospital. Dr. J. Whitridge Williams, dean of Johns Hopkins Medical School, has announced the resumption of first and second year work, March 8, but throat cultures are made before admission of students.

MASSACHUSETTS

Illegal Practitioner Fined.—Edward E. Hosmer, Lynn, who burned several children with a powerful acid in an effort to cure infantile paralysis, is said to have been found guilty of practicing medicine without a license, and to have been fined \$250, February 25.

Society Meeting.—The Eastern Hampden Medical Society, at its thirty-first annual meeting, February 9, in Springfield, elected Dr. Albert M. Belden, Northampton, president; Dr. Arthur L. Damon, North Wilbraham, vice-president, and Dr. Raymond A. Kinloch, Springfield, secretary-treasurer.

Money for Hospitals.—By the will of the late Mrs. Rosa Cobb Cole, Plymouth, \$100,000 is devised to the Jordan Hospital in that city.——By the will of ex-mayor George W. Fifield, Lowell, \$20,000 is devised to St. John's Hospital, Lowell, and a similar amount to the Lowell General Hospital.

NEBRASKA

Personal.—Dr. Adolph Sachs, Omaha, has returned from Europe.——Dr. Frank M. Barnes, Omaha, was struck by an automobile, February 21, spraining his ankle.

Change of Staff of State Hospital.—On February 2, Dr. William B. Kern succeeded Dr. Mark W. Baxter as superintendent of Ingleside Asylum, Hastings. The new superintendent announces the following appointments: first assistant, Dr. F. H. Juegle; second assistant, Dr. C. A. Oaks; third assistant, Dr. M. J. Gilfillan, and fourth assistant, Dr. Mercer B. Croll.

Annual Meeting of Casualty Company.—At the annual meeting of the Physicians' Casualty Association of America, the proposal to remove the home office from Omaha to Chicago is said not to have been favorably received. Dr. DeWitt C. Bryant was reelected president; Dr. Dellizon A. Foote, vice-president, and Drs. LeRoy Crummer, Robert A. Gilmore and Charles C. Allison were reelected directors, all of Omaha.

County Medical Society Meetings.—At the annual meeting of Boyd County Medical Society, held in Lynch, February 10, Dr. George W. Ira, Lynch, was elected president; Dr. George E. Darrow, Butte, secretary-treasurer; and Dr. John R. Beatty, Butte, delegate to the state society.——Nuckolis County Medical Association, at its recent meeting in Nelson elected Dr. John W. Mitchell, Superior, president; Dr. Edwin M. McGee, Nelson, vice-president; Dr. Frank Mitchell, secretary.——York County Medical Society has elected the following officers: president, Dr. Orville M. Moore; vice-president, Dr. Frank G. Snyder; secretary-treasurer, Dr. James N. Plumb; delegate to the state society, Dr. Walter F. Reynolds, all of York; and alternate, Dr. George A. Morrison, Bradshaw.——Physicians of Stanton County met January 31,

and organized a county medical society and elected Dr. William R. Peters, president; Dr. Emil C. Underberg, secretary, and Dr. William H. Person, treasurer, all of Stanton.

NEW HAMPSHIRE

Bequest.—By the will of the late Dr. George F. Wilbur, Nashua, about \$60,000 is devised to the Nashua Emergency Hospital.

Personal.—After a continuous service of twenty-one years, as executive officer of the Dover Board of Health, Mr. Charles M. Jones has retired.——At the annual banquet of the Manchester Medical Association, held February 14, and at which Dr. Wellington A. Thompson presided, the addresses of the evening were given by Dr. Edward W. Taylor, Boston, on "Infantile Paralysis," and by Dr. Harvey P. Towle, Boston.

NEW JERSEY

Wall Paper Regulation.—The Bayonne Board of Health has added to the sanitary code of the city rules prohibiting the placing of new wall paper on the walls of any dwelling until the old paper has been removed and the wall thoroughly cleansed.

Personal.—Dr. Ervin C. Towne, resident physician at Cooper Hospital, Canton, is reported to be seriously ill with septicemia.——Dr. Wells P. Eagleton has succeeded Dr. Charles J. Kipp as medical director of the Newark Charitable Eye and Ear Hospital.——Dr. Edward S. Sharpe, Salem, is reported to be ill at his home.

Societies May Unite.—At a meeting of the Passaic Medical Society, February 9, a motion to unite with the Passaic County Medical Society, was adopted, contingent to the granting of certain conditions, and Drs. George T. Welch, William H. Carroll and Gilbert Van Vranken were appointed a committee to treat with the county society.

Academy of Medicine Organized.—Formal organization of the Academy of Medicine of Northern New Jersey was effected at a meeting held in Newark, February 25. A constitution and by-laws were adopted and the following officers were elected: president, Dr. Edward J. Ill, Newark; vice-presidents, Drs. Thomas N. Gray, East Orange; Wells P. Eagleton, Newark, and secretary, Dr. Julius Levy, Newark. One of the provisions of the constitution is that dentists may become associate fellows of the organization and have a separate section where they can pursue their own branch of study.

Health Lectures.—A series of free public lectures on health is being given at Newark under the auspices of the Public Education Committee of the Essex County Medical Society, the Public Health Committee of the State Federation of Women's Clubs, and the College Women's Club. Lectures have already been given on "Food Fads" by Dr. Richard C. Newton, Montclair; on "The Eye in Health and Disease" by Dr. Linn Emerson, Orange; and on "Clean Streets for Health" by Dr. William Buermann, Newark. On March 22, W. F. Barry, Orange, will speak on "The Care of the Teeth in Relation to Health;" on April 10, Dr. Christopher C. Beling, Newark, will take up "The Cause and Prevention of Nervous and Mental Diseases;" and on May 1, Dr. Thomas N. Gray, East Orange, will discuss "The Social Evil and Its Effects on Public Health."

NEW YORK

Bequest for Nassau Hospital.—The will of Mrs. Alice Hicks of Westbury, L. I., gives \$100,000 to the Nassau Hospital, Mineola, L. I.

Hospital Closed.—The New Amsterdam Eye and Ear Hospital in West Thirty-Eighth Street has received permission from the courts to sell its property for \$60,000. The reason given for this action is that the institution is not paying.

Wood Alcohol Kills Three.—Three out of five persons who drank wood alcohol believing it to be grain alcohol at a wedding anniversary celebration near Middleton, N. Y., died from the effects of the beverage. The man who sold the stuff has fled and the authorities are searching for him.

Bill to Protect Marriage.—A bill has been brought before the legislature providing that no marriage license shall be issued until each party has presented a doctor's certificate of freedom from any contagious, infectious or transmissible disease, and making it a misdemeanor to procure such a certificate by fraud.

For Better Milk.—The committee of the New York Milk Committee, known as the Committee for the Reduction of Infant Mortality, in its endeavor to raise the sum of \$300,000 has sent appeals to a large number of women who were

thought able to contribute, and women will follow up this appeal by a street canvass for contributions to this fund.

Harvey Society Lectures.—The seventh of this course of lectures will be delivered on March 25 by Prof. H. Gideon Wells, of the University of Chicago, on Calcification and Ossification. The eighth and last lecture of the course will be delivered on April 1 by Dr. S. Weir Mitchell of Philadelphia, the subject being "William Harvey, the Discoverer of the Circulation of the Blood."

Bellevue Alumni Dine.—After participating in the twenty-fifth annual meeting of the organization 250 Bellevue alumni dined at Delmonico's and listened to addresses by Dr. Charles F. Stokes, Surgeon-General of the Navy; Drs. William K. Polk, Joseph D. Bryant, John W. Brannan and Floyd M. Crandall. Dr. Starling Loving of Columbus, O., who was one of the first paid interns and served in 1849 and 1850 at the time of the cholera epidemic, was present.

New York City

Bronx Hospital for Bronx Physicians.—Declaring that Bronx physicians exclusively are entitled to attend Bronx patients, a number of medical men of the borough protested to the State Board of Charities, February 27, against the opening of a new hospital in that borough by Dr. Abraham Jacobi and seventeen physicians and surgeons, fifteen of whom are said to be residents of Manhattan.

Personal.—Dr. Theodore C. Janeway has been appointed senior attending physician of the Presbyterian Hospital as the result of a recent tentative agreement between the hospital and Columbia University. Dr. William G. MacCallum has been appointed pathologist to the hospital.——Dr. Williams McKim Marriott, assistant to the chair of physiologic chemistry in Cornell Medical School, has been appointed instructor in biologic chemistry in Washington University, St. Louis.

Gifts to Hospitals.—The late Melville W. DeWolf left a bequest of \$5,000 to the Presbyterian Hospital to establish the Emma DeWolf bed for children, and \$5,000 to Roosevelt Hospital to establish the Carlton DeWolf free bed.——The Society of the Lutheran Hospital of the City of New York, formed for the purpose of building a Lutheran Hospital in this city, has received a donation of eight lots near Central Islip, L. I., on which to erect a home for convalescents. The name of the donor is withheld. The society has been pledged about \$250,000 toward the erection of a city hospital, of which \$100,000 was given by John Riehle.

OKLAHOMA

County Medical Society Election.—At the recent meeting of the Tillman County Medical Association, held in Frederick, the following officers were elected: president, Dr. Adam B. Fair, Frederick; vice-president, Dr. Francis E. Rosenberger, Grandfield; secretary-treasurer, Dr. John P. VanAllen, Frederick; alternate delegate to the state association, Dr. James D. Osborn, Frederick; censor, Dr. John H. Hanson, Grandfield.

Personal.—Dr. William N. McGee, local surgeon of the Rock Island System at Shawnee, has resigned and has been succeeded by Dr. Charles H. Blickensderfer, Tecumseh.——Dr. W. H. Slaughter, a colored physician of Oklahoma City, was seriously injured recently in a collision between his buggy and a heavy wagon.——Dr. Walter Hardy, Ardmore, has approved plans for a sanitarium to be built by September 1.——Dr. C. A. Steward, Allen, is reported to have been convicted of manslaughter in the second degree, and to have been sentenced to imprisonment for three years in the penitentiary. The charge was that he shot and instantly killed a formerly intimate friend, during a quarrel, on Christmas eve, 1909.

PENNSYLVANIA

Hospital Opened.—After unexpected delays the Meyer Emergency Hospital, Erie, was opened for patients, February 19.

New Bulletins for Health Department.—Bulletins 16 and 17, issued by the State Department of Health are on "The Conservation of Infant Life in Pennsylvania," and on "Pennsylvania's Standing Army of Health."

Personal.—Dr. Charles P. Woodring has been appointed a member of the board of health of Meadville.——Dr. Leroy W. Braden had a narrow escape from drowning while attempting to ford a flooded creek near his home at Ten Mile.

Gifts to Hospitals.—Mrs. Minnie Bachman, Sharon, has given \$10,000 to Lancaster General Hospital, to provide a free room in memory of the donor's husband, Morris Bachman.——By the will of the late Abraham Weitzenkorn, \$500 is bequeathed to Pottstown Hospital.

Philadelphia

Hospital Addition Dedicated.—Bradley Hall, the new addition to the Methodist Episcopal Hospital, was formally dedicated on February 25. Bishop C. W. Smith made the principal address at the exercises. Mr. Thomas Bradley, president of the board of trustees, is the donor of the building, which cost \$40,000, and will be used for kitchens, store-rooms, dining rooms and dormitories.

Personal.—Drs. Charles K. Mills and William G. Spiller have been elected foreign corresponding members of the Société de Neurologie, Paris.—As Dr. John H. Musser has refused to allow his name to be considered for the professorship of practice of medicine in the University of Pennsylvania, Dr. Alfred Stengel, professor of clinical medicine, has succeeded to the chair.—Dr. S. Weir Mitchell celebrated his eighty-first birthday, February 15.

New Officers.—The president of the Philadelphia County Medical Society, Dr. Christian B. Longenecker, has made the following appointments for the year 1911: Committee on Public Policy and Legislation, Drs. Hobart A. Hare, George A. Knowles, Wilmer Krusen, John D. McLean and L. Webster Fox, chairman; committee on membership, Drs. Mary Buchanan, M. Howard Fussell, George C. Yeager, Milton F. Percival and Samuel Wolfe, chairman; committee on library, Drs. Edward E. Montgomery, Elizabeth L. Peck, Albert M. Eaton, Herman B. Allyn and James M. Anders, chairman; and reporter, Dr. Howard C. Carpenter.—At the meeting of Philadelphia Medical Club, January 20, the following officers were elected: president, Dr. William L. Rodman; vice-presidents, Drs. S. Lewis Ziegler and Gwilym G. Davis; secretary, Dr. J. Gurney Taylor, and treasurer, Dr. Lewis H. Adler, Jr.; governor (for 5 years) Dr. Edward L. Duer.—The new officers chosen by the Kensington Branch of the County Medical Society include: chairman, Dr. George H. Nofer, and clerk, Dr. Valentine R. Manning.—The Northern Medical Association has elected the following officers: president, Dr. O. Luther Latchford; vice-president, Dr. Paul F. Bremer; secretary, Dr. Lee Boyce; corresponding secretary, Dr. Thomas Shriner, and treasurer, Dr. John W. Millick.—The following officers were elected by the North Branch of the County Medical Society for the year 1911: Dr. Wilmer Krusen, chairman; Dr. John Leeton, clerk; Dr. Samuel P. Gerhart was elected associate vice-president of the county society to represent this branch.

VIRGINIA

Sanatorium Opened.—The Birdville Sanatorium for Consumptives, Petersburg, was formally opened, February 14.

Election.—At the quarterly meeting of the Alexandria Medical Society, the following officers were elected: president, Dr. William M. Smith, Alexandria; vice-presidents, Drs. Samuel B. Moore, Alexandria; and T. F. Dodd, Fairfax County; secretary, Dr. Llewellyn Powell, Alexandria, and treasurer Dr. R. J. Yates, Alexandria County.

Undergraduates' Association.—Students of the third and fourth year classes of the University College of Medicine, Richmond, have organized an undergraduate surgical association according to the plan adopted a few years ago by the University of Pennsylvania. The association meets every Thursday evening and discusses surgical questions. The officers of the association are: president, W. M. Burnett; vice-president, O. L. Hamilton, and secretary-treasurer, C. J. Allen.

Personal.—Dr. Alexander G. Brown, Richmond, has been commissioned captain, Medical Corps, Virginia Volunteers.—Dr. Frank H. Hancock, Norfolk, has been appointed quarantine officer of the Elizabeth River District, vice Dr. Powhatan S. Schenk.—Dr. William E. Jennings, Bedford, has been appointed resident physician at the Catawba Sanatorium, vice Dr. William D. Tewksbury, resigned to accept the position of superintendent of the District of Columbia Tuberculosis Hospital.

GENERAL NEWS

New Member of Referee Board.—Secretary Wilson has appointed Dr. Theobald Smith, Harvard Medical School, to fill the vacancy in the Referee Board of Consulting Scientific Experts caused by the death of Dr. Christian A. Herter, New York City.

Report on Cholera in Honolulu.—Up to March 5, nineteen cases of cholera have developed in Honolulu, with fifteen deaths, all the deaths being of native Hawaiians. As a precautionary measure the schools in one district of the city have been closed.

Orriss Under Arrest.—A. W. Orriss, concerning whom a warning was published in THE JOURNAL, February 11, page 432, has been arrested on complaint of Dr. J. C. Atwell, Butler, Pa., and is in jail at that place, charged with obtaining money on false pretenses.

New Officers of Sanitary Association.—At the meeting of the Lake Michigan Sanitary Association, noted in the issue of March 4, page 679, Dr. William D. Weis, health commissioner of Hammond, Ind., was elected president; Dr. Henry B. Favill, Chicago, first vice-president; and Dr. Aaron J. Laner, Whiting, Ind., member of the executive committee.

Tri-State Medical Society Meeting.—The annual meeting of the Tri-State Medical Society of Virginia and the Carolinas was held in Raleigh, N. C., February 22 and 23, under the presidency of Dr. Joseph A. White, Richmond, Va. The following officers were elected: president, Dr. J. Howell Way, Waynesboro, N. C.; vice-presidents, Drs. Thomas E. Anderson, Statesville, N. C.; William E. Anderson, Farmville, Va.; and Frank H. McLeod, Florence, S. C., and councilors, Drs. Edward C. Register, Charlotte, N. C.; William W. Fennell, Rock Hill, S. C., and Samuel Lile, Lynchburg, Va. The next meeting will be held in Columbia, S. C., Feb. 21 and 22, 1912.

Sanitation of the Canal Zone.—The annual report of the Department of Sanitation of the Isthmian Canal Commission for 1910 shows a slight increase in the death rate over the previous year due to external violence, but a decrease as compared with the death rate of previous years. During the year 558 deaths occurred among the 50,802 employees, equivalent to an annual mortality of 10.98 per 1,000. The death rate among white employees from disease was 2.63 per 1,000. Typhoid fever caused 13 deaths during the year; dysentery, 21; pneumonia, 73; and malaria, 50. One death from yellow fever occurred January 24. This case was imported from Carthage, and with this exception no yellow fever, plague or small-pox has occurred during the year.

Life Insurance Directors Meet.—The Medical Section of the American Life Convention held its semi-annual meeting in New Orleans, February 23-25. Among the important papers presented were those by Dr. H. A. Baker of the Pittsburg Life and Trust Company on "Substandard Risks," in which he stated that the officers of sailing and steam vessels are undoubtedly the greatest risks to insurance companies and next to these come actors, glass workers, naval officers, railway trainmen, seamen and fishermen, overweight and underweight risks. In overweights there is likely to be degenerative change, and underweights a great risk of tuberculosis. Dr. Frank L. B. Jenney, medical director of the Federal Life Insurance Company, Chicago, read an interesting paper on "Office Methods and Reporting of Impairments"; and Dr. Amand N. Ravold, St. Louis, discussed "Uranalysis and Preservation of Urine." The reasons for a national board of health were considered by Dr. Albert Anderson, medical director of the Jefferson Standard Life Insurance Company. The association endorsed the Owens bill, and appointed a committee, consisting of Drs. Albert Anderson, F. M. Cross, and Victor C. Vaughan, Jr., Detroit, to represent the association in the advocacy of this measure.

Discovery of Poliomyelitis Organism.—The Department of Health of Pennsylvania announces that in examining blood in acute cases of poliomyelitis in human beings and monkeys, in which the disease was produced experimentally, an organism has been found different in morphologic characteristics from any hitherto described, which may or may not prove the etiologic factor in the causation of the disease. Blood smears being fixed in methyl alcohol and stained with carbol-thionin, the organism appears as a faintly-stained blue rod with regular cell wall about 10 microns long and .8 microns in width curved at an angle of 60 to 75 degrees at one end, and occasionally at both ends. At times the curved end is bulbous. Some of the organisms appear to have a very finely granular protoplasm, and they are found free in the serum as well as in the body of the red blood cell. The organisms do not retain the violet color when stained by the Gram method but assume the color of the counter stain which is a very dilute solution of carbol fuchsin. The specimens of blood examined were from ten children who had anterior poliomyelitis during the epidemic of last summer and autumn, and from thirteen cases of the disease in its acute stage, which had been produced experimentally in monkeys. Blood smears examined from three normal human beings and thirteen normal monkeys were carefully examined with negative results. After inoculation with the virus, these monkeys gave positive results. Blood smears were stained with iodine and sulphuric acid in order to test the organisms for cellulose. Smears from the cords and brains

of paralyzed monkeys, and from one human being were examined, but none of the new organisms was found. Filtered virus stained with carbol-thionin by Gram's method showed none of these organisms. Defibrinated blood, from three weeks to two months old, from two paralyzed monkeys showed the forms in increased numbers. Cultures made from blood of a paralyzed monkey in blood bouillon, plain bouillon, and blood-agar, examined after an inoculation of three weeks, showed the presence of the organism in increased numbers. Dorsett's egg medium was inoculated with the same blood at the same time, but the organism was not found in smears from surface of the medium or from the water of condensation. Search was made without success for moving organisms in fresh blood, in old tubes of defibrinated blood from paralyzed monkeys, blood bouillon, plain bouillon, serum bouillon cultures three weeks old, and in the condensation water of three-weeks-old cultures on Dorsett's egg medium, under decalcified illumination. Success in isolating the organisms has not yet been reached.

FOREIGN NEWS

Deaths in the Profession Abroad.—Christian Böhr, the leading physiologist of Denmark, professor of the University of Copenhagen, died February 3, aged 56. He was a pioneer in work on the gases in the blood and the gaseous interchanges in the lungs and had recently worked out an ingenious method for determination of the output of blood for the heart beat. He would soon have completed his twenty-fifth year as teacher at the university, and a *Festschrift* is in press intended for that occasion, but which now will serve as a memorial.—G. Mya, an eminent pediatricist of Italy, professor of medical pathology and later of pediatrics at the University of Florence for thirty years, died February 6, aged 63.—James Edward Pollock, F.R.C.P.; one of the oldest fellows of the Royal College of Physicians, London; a pioneer specialist in and writer on tuberculosis; died at his home in London, December 18, aged 92.

Pellagra in Italy.—An official commission has recently been appointed in Italy to study the application of the newer views of the etiology of pellagra. At the first meeting the fine results accomplished to date by the regulations adopted in the last few years were emphasized. In 1888 Italy had 117 pellagrins for each 1,000,000 inhabitants and 80 in 1903. The antipellagra law was then passed and the number was reduced to 39 per 1,000,000 in 1908. The pellagrins formed 7.9 per cent. of the inmates of the insane asylums in 1903, while in 1908 they were only 3.5 per cent. Alessandrini ascribes the disease to a parasite in drinking water and Tizzoni to a special streptobacillus, and both these men are in the commission, so the matter will be thoroughly studied. If either of them is right, then the benefit realized to date by the measures based on the assumption that spoiled corn is responsible for pellagra, is due merely to the improved hygiene. Antonini stated that research in the United States is confirming the corn theory.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 17, 1911.

The Refilling of Medical Prescriptions

The Société de thérapeutique, some time ago, appointed a commission to investigate and report on the regrettable practice of refilling prescriptions (previously mentioned in THE JOURNAL, Feb. 4, 1911, p. 360). The commission found nothing in existing laws which applied to the subject. It offered to the society the following resolutions, which were adopted: 1. When a physician writes a prescription calling for a poisonous drug, the prescription should name, in accordance with the law, the prescribed quantity of the toxic substance, the mode of administration of the medicine, and when necessary, the maximum number of times the prescription may be filled without fresh authorization. 2. Whenever a pharmacist fills a prescription calling for a poisonous substance, he should place his stamp and a new number on it, even if this prescription is already on his register. 3. Prescriptions for solutions for hypodermic use should never be refilled without special authorization of the physician who has prescribed them.

Measures Against the Plague

It is reported from Russia that Professor Zabolotny, who has returned from a tour of investigation in the far East, states emphatically that at present neither Siberia nor European Russia is threatened with the plague. This optimistic

assurance, however, fails to quiet public alarm in view of the frightful rapidity with which the plague has spread southward among the people of the yellow races. In spite of the activity of the Russian and the Japanese governments, which are aided by a knowledge of the customs and the language and therefore find the population with which they have to deal more tractable, the situation is a grave one, all the more that the portion of the Manchurian region under Japanese control is only a small part of the immense Chinese empire, and that the Chinese administration has shown itself so unequal to the situation that Chinese physicians themselves have refused their assistance so long as the sanitary administration is not organized along European lines.

In France, the parliamentary commission of hygiene has just decided to ask the minister of the interior to hasten the meeting of an international conference to study the means of checking the epidemics of plague and cholera. Moreover, Dr. Broquet, of the Institut Pasteur, has just left for Manchuria, taking with him a large number of chests containing ampullas of Haffkine's serum, which are intended for our soldiers and countrymen sojourning in the threatened localities of the far East. It is felt that the time has come to organize in defense of the civilized world a new scientific expedition to China for the study of this scourge, like that which studied the bubonic plague in Bombay in 1897.

The Name of Malta Fever

The governor of the Island of Malta recently complained that the name of "Malta fever" was not suitable for a disease which is found all along the Mediterranean coast as well as in other countries not bordering on the Mediterranean. The question was laid before the Académie de médecine, which appointed a commission to study the subject. Professor Widai, who presented the report of the commission, proposed to replace the name of "Malta fever" by that of "Mediterranean fever." Professor Blanchard objected that this term seemed scarcely better justified than Malta fever, since the disease is found in other regions. Geographical names, moreover, have the disadvantage of being restricted and incomplete. Blanchard, therefore, proposed to call the disease "undulating fever" (*fièvre ondulante*). Professor Chauffard preferred the name "melitosis," which has the advantage of recalling the cause of the disease, the *Micrococcus melitensis*. Drs. Landouzy and Vaillard supported Chauffard's proposition, on the ground that, in man, the undulating character of the fever may not be evident in the abortive forms and that, moreover, though the *Micrococcus melitensis* produces an undulating fever in man, its manifestations in animals are quite different.

Agitation Among Students in Dental Surgery

A delegation of students in dental surgery has laid before the Chamber of Deputies a petition protesting against the reservation of certain posts, such as that of surgeon-dentist of the hospitals, for doctors in medicine alone. The students believe that, since five years of study, attested by a series of difficult examinations, are demanded of surgeon-dentists, the latter should have the right to compete for the post of surgeon-dentist on the same terms as doctors in medicine.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 16, 1911.

Pay Wards in Municipal Hospitals

The question of the establishment of wards for pay patients in the municipal hospitals, of which I have written several times, has lately made some progress. The administration has agreed to the suggestions of the commission which has been considering this matter. All that is needed now is the consent of the city council. According to the resolution, a special building with fifty to sixty beds is to be erected in connection with the surgical clinic at the Moabit Hospital as an experiment, the beds to be available for paying patients of the so-called middle class. These patients, as a rule, are to be placed in small wards of from three to five beds. A number of single rooms is to be provided for patients who need temporary isolation. This section of the hospital is for the benefit of those members of the middle class who are not in position to pay higher fees without too much of a drain on their means. The daily fee for care including the physicians' services amounts to \$1.60 (6.50 marks). For the more important operations a special fee as high as \$25 (100 marks) may be charged. Also other special services are to be compensated

at moderate fees. If patients are received whose circumstances warrant it, higher fees may be charged and in such cases the physician may make special charges. The decision as to whether the circumstances warrant higher or lower charges is reserved to the city authorities.

Regulation of Automobile Traffic

At the request of the Royal Automobile Club of Bavaria the Munich Ophthalmologic Society has made the following report in regard to the requirements for the visual capacity of automobile drivers: 1. The lowest capacity of the eye with the better vision must be $2/3$, and of the eye with the poorer vision $1/3$ of the normal. The highest permissible correction is $+ 8.0$ diopters. Spectacles and reserve spectacles with an arrangement to protect the glasses from rain and snow must be provided. 2. A retraction of the field of vision which is distinctly demonstrable with the perimeter even in one eye, is a disqualification. 3. A reduction of the sensitiveness to light also disqualifies. 4. Congenital color blindness is not to be considered. 5. Ptosis, paralysis of the eye muscle, considerable disturbance of the mobility of the pupil, aphakia and especially external inflammations, which are accompanied by photophobia, for instance, render the applicant unfit. 6. Goggles are recommended. 7. There should be reexamination every two years.

Statistics of Curative Treatment of Tuberculosis

From the latest statistics of the Imperial Insurance Office on the curative treatment of tuberculosis in the institutions for invalid insurance, a number of important results can be deduced especially because they extend over the period from 1897-1909. During this time, 275,000 patients with pulmonary tuberculosis have received prolonged expert treatment, costing in all over \$25,000,000 (100,000,000 marks). Since 1897, the number of men treated for tuberculosis of the lungs has increased more than eleven times and that of women nearly eighteen times. The cost of treatment has continually increased in correspondence with the increased cost of living. The average expense for a tuberculosis patient in 1897 was \$76 (307 marks), in 1909, \$96 (386 marks). The expense for a day's treatment has risen from \$1 (4.05 marks) in 1897 to \$1.35 (5.41 marks) in 1909. The treatment of patients with pulmonary tuberculosis was carried out in the so-called people's sanatoria. There are thirty-seven establishments for treatment of diseases of the lungs and thirty-four sanatoria, convalescent homes and hospitals, which are essentially sustained by the invalid insurance societies. On account of the well-known difficulty of keeping a patient who has a family to support in the sanatorium for a sufficient length of time, the law provides for aid to those dependent on the patient, allowing half of the amount paid for sickness by the Krankenkassen or one-fourth of the day's wages; in some cases this is doubled or even tripled. Unmarried insured patients in many cases are assured especial allowance for illness according to the rates of the Krankenkassen, up to one-fourth of the day's wages. In this way, between 1897 and 1909 the sum of \$4,250,000 (17,000,000 marks) was paid to relatives and for the special sick benefit; in 1909, \$37,000 (148,000 marks) was paid. The results obtained each year at the close of the treatment have been followed for five years so that the latest statistics give the conclusions for nine such periods of five years. In the last eight control periods the initial successes compared with the first period have risen in tuberculous men from 4 to 13 per cent. and in tuberculous women from 5 to 15 per cent. The end-results, on the other hand, have risen from 3 to 19 per cent. in tuberculous men and from 3 to 20 per cent. in tuberculous women. The women treated in all the control periods show a markedly greater permanence of the cure than the men, a result which must be referred to the more marked vitality of women. While at the end of 1901 of 100 men treated for tuberculosis in 1897 only twenty-five had preserved the favorable initial result, the number of those treated in 1905 who showed a continuance of the cure in 1909 was forty-four. On the other hand, for every 100 tuberculous women treated in 1897 at the end of 1901 there were thirty-two able to work and of those treated in 1905 at the end of the year 1909 fifty-two were still able to work. These numbers show also that from year to year better results have been achieved in the treatment of tuberculosis. Of the patients treated in 1909, 1,215 men and 5,826 women were found at the beginning of the curative treatment in the first stage according to the Turban-Gerhardt classification: 9,161 men and 3,399 women in the second stage; 3,550 men and 1,154 women in the third stage. Of all three stages there were at the close of the treatment 535 men and 358 women in stage O. The first stage showed in comparison with the beginning an

increase of 1,489 men and 521 women, while the second stage showed a decrease of 1,475 men and 757 women; the third stage a decrease of 553 men and 122 women. In order to reach as completely as possible those persons whose health is endangered the military examinations have been put at the service of the campaign against tuberculosis. It has been arranged that the data regarding the health of those examined for military service by the military surgeons should be communicated to the tuberculosis authorities. In 1909 the organization learned of 575 tuberculous patients in this way.

Improvement of Instruction in Pediatrics

The pediatric society has called attention in memorials addressed to the governments of the various federal states to the insufficient opportunities for instruction in diseases of children in most of the German universities and has made the following demand: It is imperatively necessary that every university possess a children's clinic with a modern infant ward (of at least sixteen beds and some nurses), and a polyclinic for children, separate from that for adults. These institutions should be under the direction of a special professor who is to have a voice in the faculty in matters pertaining to the pediatric department. Two hours a week for only one semester are not considered sufficient for attendance on these pediatric clinics. The importance of diseases of children in practice makes an examination in this department necessary for the state license, and this examination should be held by a special professor and rank in importance with the examination in internal medicine. How far these demands will be accepted by the government remains to be seen. Many university professors and many physicians take the position that pediatrics should not be regarded as a specialty, but that it falls properly in the field of instruction in internal medicine and in practice belongs to the sphere of the family physician. This conception is justly opposed. The field of investigation in pediatrics has widened so much in late years that its facts cannot be sufficiently considered in the instruction in internal medicine, and the difficulties in diagnosis and therapeutics in the practice of diseases of children require occasionally the counsel of a specially educated pediatrician, although it must be admitted that every practitioner should understand so much of pediatrics that he will have a sufficient experience for ordinary cases.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 23, 1911.

Sudden Death of Professor Escherich

The news of the death of Professor Escherich, the well-known professor of pediatrics, will without doubt be received with great regret by the numerous American doctors who have been working under him in this city. His clinic was a Mecca for all these men, for it hardly had its like in Europe as regards the advantages for study. Besides, Escherich himself was a very good teacher, who understood how to captivate the thoughts of his students and to direct them to certain roads of reasoning. Out of the great number of his pupils, von Pirquet's name is familiar to all practitioners. Escherich's efforts were directed to the prevention of infantile mortality by recommending breast-feeding in all cases, and by the institution of milk distribution for those who were unable to obtain it in a sufficiently pure state. His school is famous for the chemical and biologic researches undertaken under his supervision; the discovery of the *Bacillus coli* is due to one of his earliest undertakings in this line, and has made his name a household word in scientific medicine. He was the representative pediatricist invited to present this specialty at the Congress of Arts and Sciences at the St. Louis Exposition in 1904. He was only 54 years of age when his brilliant career was closed by an attack of apoplexy, brought on by an early arteriosclerosis.

Celebration of Washington's Birthday

This national festival was celebrated in Vienna by a reception in the halls of the embassy of the United States, where Mr. Richard C. Kerens, the ambassador to the Austrian court, gave a formal evening to the members of the American colony at present living in our city. A large number of those present were doctors, members of the American Medical Association of Vienna, which at present is flourishing as never before. The ambassador is a frequent guest in the headquarters of the Association, and thus excellent relations are kept between the two "powers."

BUDAPEST LETTER

(From Our Occasional Correspondent.)

BUDAPEST, Feb. 7, 1911.

State Protection of Children in Hungary

Hungary is justly proud of her system of caring for dependent children, of whom there are now 50,000 in the special institutions provided for them by the Hungarian government. In addition to this large number at present under its protection, the state has previously had 50,000 other wards who either have since been given back to their parents, or, having reached their fifteenth year, have been dismissed from the charge of the state. The system in vogue is generally regarded as one of the foremost humanitarian institutions of the civilized world, and has been lauded as such at recent international congresses of hygiene and child welfare, while experts come to Hungary from all parts of the civilized world to study the details of the methods.

DETAILS OF THE SYSTEM

The homes for children consist of seventeen large buildings in different parts of the country. Every child who has no supporter, or whose maintenance and education are not sufficiently ensured, either on account of poverty or bad hygienic conditions or other adverse circumstances, has a legal right to be cared for by the state. He is not obliged to sue for admission, but he can present himself and claim admission on the ground of legal right. Nowhere else in the world does a child possess such a privilege. In Germany, for instance, the child has no such right, as regards the state, and deserted children are referred to the village charity. In France such cases have to be brought to the notice of the county council.

ABSENCE OF RED TAPE

Another prominent feature of the Hungarian system is that no documents are necessary for proving the fact of a child's abandonment. The Hungarian homes, therefore, take in any child who appears not to be under proper guardianship, and only after the state has received him into its care will inquiries be made through the Society for Protection of Orphans as to whether he is really dependent on the state's care or not. Illness among the children in these homes is treated by medical experts, who have at their command a large number of wet-nurses, assistants, incubators and all necessary surgical appliances, constituting a well-equipped modern hospital.

HEALTHY CHILDREN BOARDED OUT

Healthy children are not brought up in the institutions as "hot-house specimens of humanity," not knowing the trials and troubles of life. Such children are placed by the state in suitable households of the artisan or agricultural class, where they grow up as members of the family and ultimately become useful Hungarian citizens, irrespective of their former nationality. Even though such families are carefully chosen, the state still reserves the right of control. For this purpose, the services of the county physician are requisitioned, extra payment being made for this work. He is required to assure himself as regards the health of the children, their bodily and mental development, and their condition with respect to cleanliness and clothing. In the case of infants, he must supervise the feeding of the child and take its weight from time to time. The state will shortly appoint a lady supervisor, in addition to the already existing district medical officers. Her duties will be the carrying out of the details prescribed by the medical officer and repeated visits to the foster-families, wherein she will take the part, not so much of a government official, as of an aunt to the adopted child and a relative of the family. In the event of the foster-parents proving unsuitable, she will have the child removed to more appropriate surroundings.

TIES OF RELATIONSHIP FOSTERED

The intercourse between the child and its blood relations does not cease when it becomes the ward of the state. This is not the case in other countries; in Paris, for instance, as soon as a child is taken into a foundling asylum the mother is not allowed to apply for information respecting it more than four times a year. In the Hungarian institutions a very different system prevails. It often happens that, in the case of infants, the mother and child are not only separated, but, if the mother requires it, suitable accommodation is provided for her by the state. In the case of children the mother is requested to visit the child, and, as far as possible, to help in its up-bringing. Should she in any case be of the

opinion that her child's surroundings are unsuitable to its proper physical or mental development, she can, by reporting this to the state authorities, have the child removed elsewhere, even though her complaints should be due merely to a mother's natural anxiety. Should the mother's or the relations' or even the child's circumstances change, so that the child could be brought up at home, the mother may at once reclaim the child without being put to the expense of any reimbursement of its past maintenance.

SUPERVISION OF STATE CARE BY CITIZENS' ASSOCIATION

The relations between the child and state are controlled by an independent body called the Orphans' Protection Society, which is chosen from among the citizens of the community and is invested with magisterial authority. The result is expected to be a decrease in infant mortality, and also in the number of juvenile criminals, because it has been found that the majority of such criminals were those who had been abandoned to chance in their early years.

MORAL WELFARE OF CHILDREN GUARDED

The Hungarian government also takes measures to prevent the corruption of children's morals. By an order of the minister of the interior, children are taken charge of by the state if it is found that they are being brought up in immoral surroundings. Children in such a case, even though the parent may be in a position to provide for all physical wants, are removed from these evil influences.

EXPENSE TO THE STATE

By protecting children in these various ways, the state is accomplishing a great work which cannot fail to have a beneficial effect on the whole Hungarian people. The yearly expenditure by the state for the protection of children amounts to \$2,000,000.

The Outlook for Medical Men in Hungary

The number of medical men in Hungary is increasing constantly, but the prospects of the practitioners are not increasing at the same rate. This is chiefly important for a large percentage of the present doctors in Hungary, for as an investigation conducted by a medical corporation in this country shows, fully 32 per cent. of all medical students and recently graduated doctors come from the poorest and often lowest strata of the population. Therefore medical organization could not be successful in this country, for the newly qualified M.D. is always willing to do anything to earn even a small living as quickly as possible. The Hungarian ministry for education has just now ordered that the holders of diplomas gained abroad (Austria included) can apply for the right to practice only under the condition that they produce proofs of having passed examinations absolutely equivalent to those required from a medical student in Hungary (knowledge of Latin, Greek, an equal curriculum, and the same subjects as are required in Hungary).

Marriages

JOSEPH B. COX, M.D., to Miss Dollie Clements, both of Howell, Ind., March 1.

EBB. C. JOHNSTON, M.D., to Miss Madge Good, both of Chattanooga, Tenn., February 23.

EUGENE D. REGAN, M.D., to Miss Marion Smith, both of Milwaukee, Wis., February 22.

A. F. MCKAY, M.D., to Mrs. Laura V. Smith, both of Colorado Springs, Colo., February 22.

EUGENE E. COERPER, M.D., Fredonia, Wis., to Miss Madeline A. Oppen of Milwaukee, February 22.

PAULINE I. MYERS TOWNSEND, M.D., and Lawrence A. Hanson, both of Marshalltown, Ia., recently.

HARRY WILLIAM ACKERMANN, M.D., Rockford, Ill., to Miss Mand Goodspeed of Elgin, Ill., February 21.

ISAIAH J. WATERMAN, M.D., Creston, Ia., to Miss Rachel Kegley of Colfax, Ia., at Des Moines, February 20.

CLAUDE W. ASBURY, M.D., Hymers, Ind., to Miss Abby Lucas of Sullivan, Ind., at Terre Haute, Ind., February 21.

FRANK M. HUMPHREY, M.D., Bluemont, Va., to Miss Lillian Rosa Belle Talbott, at Washington, D. C., February 22.

FRANK JOHN HIRSCHBOECK, M.D., Chisholm, Minn., to Miss Elizabeth Robertson Carmichael of Lansing, Mich., February 16.

Deaths

Walter Remsen Brinkerhoff, research worker and pathologist, who spent five years as director of the Molokai (H. I.) Leprosy Investigation Station of the U. S. P. H. and M.-H. Service; died at his home in Jamaica Plain, Boston, Mass., March 2, from pneumonia; aged 36. Dr. Brinkerhoff graduated from Harvard University in 1897, and from Harvard Medical School four years later. His expert training in pathology was obtained in the laboratory of the Boston City Hospital, where he was successively intern and second and first assistant in pathology. In 1902 he was made assistant in pathology in his alma mater. Two years later he was made a fellow of the Rockefeller Institute for Medical Research, and in 1905 was appointed physician to the Carnegie archeologic expedition to the Transcasian Territories. He made researches on the white cells of the blood and small-pox, carrying on the latter work in Boston in 1901 and 1902, and in Manila in 1903 and 1904. In 1906 he was placed in charge of the Leprosy Investigation Station at Molokai, and remained there for nearly five years, returning a few months ago to accept the assistant professorship of pathology in Harvard University. He was a member of the Massachusetts Medical Society, the American Association of Pathologists and Bacteriologists and the Society of Experimental Medicine. Dr. Brinkerhoff was highly esteemed by his associates, and his untimely death deprives the scientific world of a notable research worker.

William Worrall Mayo, M.D., pioneer surgeon of Minnesota, died at his home in Rochester, March 6, aged 91. He was born near Manchester, England, received his preliminary education at Manchester College, and took his medical lectures at the Indiana State Medical College in 1852, and at the University of Missouri Medical Department, Columbia, from which he received the *ad eundem* degree of M.D. in 1854. He first settled in Lafayette, Ind., but soon moved to Rochester, Minn. He was for many years a member of the American Medical Association and was president of the Minnesota State Medical Association in 1872. Soon after his arrival in Minnesota he was made surgeon-in-chief of the provost-marshal's office for the southern district of Minnesota. Dr. Mayo was the pioneer surgeon of the northwest and established a reputation which has resulted in making Rochester the surgical Mecca of the United States.

Albert Sydney Ashmead, M.D., of New York City; research worker in leprosy, pellagra and Asiatic diseases; died in Jefferson Hospital, Philadelphia, February 20, after an operation for disease of the intestines, aged 60. He received his medical degree from the University of Pennsylvania, Philadelphia, in 1869, and four years later was appointed foreign medical director of the Tokyo Fu Hospital, Tokyo, Japan. He also taught the first class of students in the Tokyo Charity Hospital Medical School. After three years he returned and practiced in Doniphan County, Kan.; and while there was local surgeon for the St. Joseph and Grand Island Railroad. In 1882 he removed to New York City. He was one of the founders of the Berlin Leper Conference of 1897, and contributed largely to the literature of leprosy.

Thomas Berton Davis, M.D. University of Louisville, Ky., 1869; a member and formerly president of the Arizona Medical Association; organizer and first president of the Yavapai County Medical Society; a pioneer physician of Arizona; formerly medical cadet and acting assistant surgeon, U. S. Army, with Civil War service; died at his home in Prescott, February 17, from intestinal obstruction, aged 66. At a special meeting of the Yavapai County Medical Society, resolutions were unanimously adopted setting forth the high personal and professional attainments of Dr. Davis, and expressing regrets at his death. These resolutions were endorsed by the druggists of the city.

Edwin H. Carter, M.D. Eclectic Medical Institute, Cincinnati, 1865; Rush Medical College, 1897; for several years a member of the Iowa State Board of Health; and State Board of Medical Examiners; vice-president of the Iowa Public Health Association; formerly professor of surgery and clinical surgery, theory and practice of medicine and clinical medicine, and dean of the faculty of Drake University Medical Department; died at his home in Des Moines, February 24, from cerebral hemorrhage, aged 74.

James Crawley Donoghue, M.D. *cum laude*, Harvard Medical School, 1897; of Boston; a member of the American Medical Association; instructor in histology in his alma mater; and last year appointed instructor in diseases of the blood in Tufts College Medical School; physician for twelve years at the Boston Dispensary and visiting physician to St. Mary's Infant

Asylum; died at the home of his parents in Georgetown, Mass., February 26, aged 46.

Franklin Cooley, M.D. University of Louisville, Ky., 1848; surgeon of the Tenth Missouri Volunteer Infantry and Seventh Missouri Volunteer Cavalry during the Civil War; for sixteen years a member of the local pension examining board of Lexington, Mo.; founder of the first medical college in Kansas City, and professor of surgery for three years; died at the home of his daughter in Kansas City, February 16, aged 90.

Edward Hitchcock, M.D. Harvard Medical School, 1853; senior professor and professor of hygiene and physical education in Amherst (Mass.) College and of physical culture and hygiene in Cornell University; a pioneer in the physical training of students, and the author of a number of text-books on physiology and anatomy; died at his home in Amherst, February 15, aged 82.

Floyd Preston Sheldon, M.D. University of Michigan, Ann Arbor, 1878; an eye and ear specialist of New York City; and a director and vice-president of the Citizens Loan and Saving Association; oculist and aurist to the Home for the Friendless, and consulting oculist to the Webb Home; died at his home in New York City, February 18, from nephritis, aged 53.

Thomas James Manahan, M.D. Harvard Medical School, 1899; assistant surgeon on the hospital ship *Bay State* during the Spanish-American War; a member of the staff of the Massachusetts General Hospital, and proprietor of the McDonald Hospital, Corey Hill, Brookline; died in that institution, February 14, from pneumonia, aged 37.

Francis M. Greene, M.D. Jefferson Medical College, 1860; a member of the Kentucky State Medical Association; for more than half a century a practitioner of Fayette County, Ky.; acting assistant surgeon U. S. Army during the Spanish-American War; died at his home in Lexington, February 19, from senile debility, aged 77.

Homer Baxter Sprague, M.D. Bellevue Hospital Medical College, 1881; a member of the Medical Society of the State of New York; for twenty-six years a practitioner of Yorkville, New York City, and a prominent social worker; a member of the State Lunacy Commission; died at his home, February 25, from pneumonia, aged 51.

Carroll Thrasher, M.D. Cooper Medical College, San Francisco, 1900; at one time police surgeon of San Francisco, and superintendent of the small-pox hospital; and later surgeon on a steamer plying between San Francisco and Panama; died suddenly at his home in San Francisco, February 10, from heart disease, aged 34.

Llewellyn Thomas Botsford, M.D. New York Homeopathic Medical College, New York City, 1878; for several years health officer of Colton, N. Y., and for six years coroner of St. Lawrence County; a member of the board of education of Canton for many years; died at his home in Potsdam, February 8, from diabetes, aged 58.

Stephen Tabor Birdsall, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1868; New York Homeopathic Medical College and Hospital, New York City, 1868; a member of the American Electrotherapeutic Association; died at his home in Glens Falls, N. Y., January 27, from cerebral hemorrhage, aged 65.

James Kelley Farnum, M.D. University of Michigan, Ann Arbor, 1870; surgeon for the Pere Marquette and Grand Trunk systems for several years; died in the City Hospital, Port Huron, Mich., February 11, from shock following the amputation of a foot as the result of a street-car accident four days before, aged 64.

Benjamin Franklin Cessna, M.D. University of Michigan, Ann Arbor, 1852; Jefferson Medical College, 1858; for many years a trustee of Ohio Wesleyan University, in which he endowed a chair of English language and literature; died at his home in Kenton, Ohio, January 1, from acute gastritis, aged 84.

John C. Nottingham, M.D. Bennett Medical College, Chicago, 1873; a veteran of the Civil War; at one time treasurer of Delaware County, Ind.; a charter member and one of the organizers of the Saginaw Valley Medical Society; died at his office in Bay City, Mich., February 25, from heart disease, aged 69.

Alexander S. Stewart, M.D. Eclectic Medical Institute, Cincinnati, 1865; a pioneer practitioner of South Dakota; a veteran of the Civil War; and a member of the legislature from Pawnee County, Neb., in 1869; died at his home in Hot Springs, S. Dak., January 22, from nephritis, aged 71.

Hannibal Amilcar Beeson, M.D. Miami Medical College, Cincinnati, 1879; for many years a practitioner of Leesburg, Ohio; hospital steward and assistant surgeon in the Navy during the Civil War; died at the home of his son in Roswell, N. M., February 11, from angina pectoris, aged 69.

Thomas K. Reed, M.D. University of Pennsylvania, Philadelphia, 1864; vice-president and one of the organizers of the First National Bank of Atlantic City, N. J.; a surgeon of volunteers during the Civil War; died at his home in Atlantic City, February 12, from heart disease, aged 72.

Charles Spinning Cowan, M.D. Miami Medical College, Cincinnati, 1880; formerly president of the Shelby County (O.) Medical Association, and Siskiyou County (Cal.) Medical Society; died at his home in Fort Jones, Cal., Nov. 26, 1910, from angina pectoris, aged 60.

John A. Rynard, M.D. Jefferson Medical College, 1872; formerly councilman and a member of the school board of South Harrisburg, Pa.; local surgeon for the Pennsylvania System at Goldsboro from 1880 to 1888; died at his home in Harrisburg, February 10, aged 71.

Alonzo R. Stephens, M.D. Albany (N. Y.) Medical College, 1865; a member of the Bradford County Pension Board; assistant surgeon in the Federal service during the Civil War; died at his home in Herriekville, Pa., February 10, from heart disease, aged 75.

Philo Kelly Stoddard, M.D. Buffalo (N. Y.) Medical College, 1848; surgeon of the One Hundred and Sixty-First New York Volunteer Infantry for two years during the Civil War; died at his home in Prattsburg, N. Y., February 3, from gastritis, aged 85.

Caleb Horace Closson, M.D. Jefferson Medical College, 1872; a member of the Medical Society of the State of Pennsylvania; first secretary of the Altoona Board of Health; died at his home in that city, February 24, from cerebral hemorrhage, aged 62.

E. B. Harrell, M.D. Tennessee Medical College, Knoxville, 1907; a member of the American Medical Association, and of the pension board of Unicoi County, Tenn.; died at his home in Unicoi, Nov. 23, 1910, from typhoid fever, aged 35.

William J. Middleton, M.D. Kentucky School of Medicine, Louisville, 1891; a pioneer practitioner of Idaho; for many years a member of the Idaho State Medical Association; died at his home in St. Anthony, January 13, from paresis.

Wallace Deane Carr, M.D. University College of Medicine, Richmond, Va., 1908; a member of the Medical Society of Virginia; a specialist in diseases of children; died at his home in Richmond, February 24, from heart disease, aged 35.

Amy Garrison Brown Kimball, M.D. Cleveland College of Physicians and Surgeons, 1878; for three years intern in the Northeastern Hospital for Women, Boston; died at her home in Jackson, Mich., January 29, from pneumonia, aged 63.

Emmet Densmore, M.D. New York University, New York City, 1885; of New York City; an apostle of natural food and simplicity in living and diet; died at his cottage in Cassadega, Fla., February 19, from tuberculosis, aged 73.

John J. Sweeney, M.D. College of Physicians and Surgeons, Baltimore, 1910; of Govanstown, Baltimore; died in Mercy Hospital, February 18, from the effects of bichlorid of mercury, self-administered in mistake for candy, aged 25.

Nellie Knowles Horn, M.D. Fort Worth (Tex.) University, 1908; a member of the Tarrant County Medical Society; died at her home in Altus, Okla., January 16, eight days after an operation for cancer of the uterus, aged 36.

Jesse W. Buell, M.D. New York Homeopathic Medical College, New York City, 1877; attending physician to the Rochester (N. Y.) Homeopathic Hospital; died at his home in that city, February 17, from pneumonia, aged 59.

Thomas E. Briggs, M.D. Saginaw Valley Medical College, Saginaw, Mich., 1903; of Saginaw; a member of the Michigan State Medical Society; died at the Saginaw General Hospital, February 23, from pneumonia, aged 32.

Arthur B. Ralph, M.D. Washington University, St. Louis, 1859; of Orrick; a member of the Missouri State Medical Association; died at the home of his daughter in Orrick, February 17, from pneumonia, aged 74.

Gustavus Adolphus Tucker, M.D. Jefferson Medical College, 1854; for thirty-one years an employee of the *Chattanooga Times*; died at the home of his daughter in Hill City, Chattanooga, Tenn., February 10, aged 82.

Joseph W. Bourne, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1889; formerly of

South Auburn, Neb.; died at his home in Omaha, February 14, from arteriosclerosis, aged 53.

George W. Seymour, M.D. New York Homeopathic Medical College, New York City, 1872; for more than forty years a practitioner of Westfield, N. Y.; died at his home, February 13, from pneumonia, aged 69.

David Dunn Martin, M.D. Starling Medical College, Columbus, O., 1851; (license, Okla., 1908); a practitioner for nearly sixty years, died at his home in Newkirk, Okla., February 5, from cancer, aged 82.

James M. Patterson, M.D. University of Nashville, Tenn., 1859; a Confederate veteran; formerly a member of the Tennessee legislature; died at his home in Verona, Tenn., February 18, aged 82.

Rufus C. Corey, M.D. Homeopathic Medical College of Missouri, St. Louis, 1887; of Seattle, Wash.; died in the City Hospital, February 13, from the effects of an overdose of morphin, aged 46.

William G. Mangold, M.D. College of Physicians and Surgeons, New York City, 1889; of Brooklyn, N. Y.; died in the Brooklyn Hospital, February 15, from cerebral hemorrhage, aged 47.

Edward Clay Reid, M.D. Louisville (Ky.) Medical College, 1875; president of the school board of Tulsa, Okla.; died at his home in that place, Nov. 20, 1910, from acute nephritis, aged 58.

Napoleon B. McKay (license, Kansas, 1901); of America City; for fifty-four years a practitioner of Kansas; died at the home of his daughter near America City, February 4, aged 84.

James Kennedy Johnstone, M.D. Victoria College, Coburg, Ont., 1870; government inspector of electric meters; died at his home in Toronto, Aug. 12, 1910, from pneumonia, aged 61.

Lee Washington Fulton, M.D. Rush Medical College, 1869; of New Berlin, Ill.; a practitioner for fifty-four years; died at the home of his son in Alexander, Ill., February 18, aged 73.

Sands Macamly Davis, M.D. New York University, New York City, 1853; died at his home in Sugar Loaf Valley, Mass., January 8, from organic heart disease, aged 81.

Henry J. Weyl, M.D. Eclectic Medical Institute, Cincinnati, 1875; a veteran of the Civil War; died at his home in Decatur, Ill., February 23, from prostatic hemorrhage, aged 75.

Albert Seessel, M.D. University of Leipzig, Germany, 1876; of New York City; died in the German Hospital, New York City, Dec. 24, 1910, from lobar pneumonia, aged 60.

Henry Lewis Perney (license, Iowa, years of practice, 1886); for nearly half a century a practitioner; died at his home in Wilton, February 13, from cancer, aged 74.

Charles Westley Throckmerton, M.D. Western Pennsylvania Medical College, Pittsburg, 1909; died at his home in Johnstown, Pa., February 16, from pneumonia, aged 23.

Joseph E. Ferte, M.D. Ecole de Médecine et de Chirurgie, Montreal, 1853; died at his home in Livingston, Mont., February 12, from cerebral hemorrhage, aged 78.

John F. Michael, M.D. College of Physicians and Surgeons, Baltimore, 1885; died at his home in Morgantown, W. Va., Sept. 26, 1910, from prostatitis, aged 70.

Frank B. Behner, M.D. Kentucky School of Medicine, Louisville, 1902; of Marion, Ohio; died in Richmond Township, February 19, from tuberculosis, aged 30.

George Thomas Borden, M.D. Hahnemann Medical College, Philadelphia, 1876; died at his home in Caledonia, N. Y., February 14, from nephritis, aged 57.

N. W. Williams, M.D. Tulane University, New Orleans, 1875; formerly of Holly Springs, Miss.; died at his home in Gulfport, Miss., February 21, aged 53.

Mathew Wilkinson Ross, M.D. Jefferson Medical College, 1889; died at his home in Scranton, Pa., Sept. 3, 1910, from sarcoma of the lower jaw, aged 56.

Constantine H. Murphy, M.D. Washington University, St. Louis, 1854; died at his home in Chesterfield, Ill., February 13, from heart disease, aged 83.

Jeremiah B. Dustin, M.D. Medical College of Ohio, Cincinnati, 1874; died at his home in Bidwell, O., February 17, from cerebral hemorrhage, aged 62.

William M. Glass, M.D. Medical College of Indiana, Indianapolis, 1871; died at his home in Summitville, Ind., January 27, from nephritis, aged 80.

[Dr. Daniel Franklin Royer is not dead; see California news, this issue.]

Association News

THE LOS ANGELES SESSION

List of Meeting Places and Section Hotels—The Northern Railroad Routes

We give here a schedule of meeting places for the various sections and other gatherings and of the hotels designated for the various sections. A map of Los Angeles will be published in the special number of THE JOURNAL to be issued in May giving full details of the session. Some information about the meeting is being published in each issue of THE JOURNAL. For example, a list of hotels, with description and rates, appeared February 18, page 527.

THE NORTHERN RAILROAD ROUTES

DR. M. L. HARRIS, Chicago, chairman of the Committee on Transportation, makes the following announcement, continuing the subject of railroads from the issues of the past few weeks:

The northern routes include the Northern Pacific, the Chicago, Milwaukee & Puget Sound, the Great Northern and the Canadian Pacific railroads, and, for a part of the distance, the Oregon Short Line. All of these routes lead to the northwest, namely, to Vancouver, Seattle, Tacoma and Portland.

On the Canadian Pacific the mountain scenery is perhaps the most beautiful on this continent, and this part of the great Rocky Range frequently has been called the Alps of America. On the other lines, although the mountain scenery is very beautiful, the greatest attraction is undoubtedly the Yellowstone Park. All those who have not visited this great National Park should not fail to improve this opportunity to see the wonderful geysers, the lake, the beautiful Yellowstone falls, the deep canyon with its gorgeous colorings, and many other interesting formations.

There are many beautiful and interesting sights along the Columbia River, including the great salmon fisheries, which are the largest in the world.

The Shasta route between Portland and San Francisco is justly famous, for the stateliness and grandeur of Mount Shasta is unsurpassed.

For those who enjoy the water there is an excellent line of boats between San Francisco and Portland.

The rate over any of these northern lines is \$62.50 round trip from Chicago, plus \$15 arbitrary for the coast line, but attention is again directed to the fact that this rate is not available for both going and returning by a northern route.

As it requires so much time thoroughly to see and enjoy the Canadian Rockies, Yellowstone Park and the other places

of interest, it is suggested that it is perhaps better to go by one of the southern or central routes and to return by a north-route; stop-overs on the return trip may be had at almost any place and for any length of time within the final limit of the ticket, September 15.

SPECIAL TRAINS

Announcement of special trains will be made in THE JOURNAL in the issue of March 25. All who are concerned in the arranging of special trains to Los Angeles from any part of the United States, or from Los Angeles on the return trip, are asked to notify THE JOURNAL at once with full particulars so that this announcement may be complete.

Correspondence

Federation of Women's Clubs Starts Educational Campaign in Social Hygiene

To the Editor:--It may be of interest to your readers to know that the General Federation of Women's Clubs, with a membership of 800,000, has decided to take up an educational campaign on social hygiene. A committee of three physicians and one lay woman was appointed by the president to start the work. The opportunity is a great one, but the task of doing it wisely and yet of facing the facts honestly is no small one. A large number of women in the federation are not even acquainted with the name "social hygiene;" a still larger number are afraid of the subject.

Our experience in Illinois has been of the most encouraging nature. In the last four years a committee, consisting of a number of women physicians and some lay members of the Chicago Woman's Club, in cooperation with the Chicago Woman's Club and the Chicago Society for Social Hygiene, carried on extensive educational work.

Before almost every club in the city and in the state one or more lectures on social hygiene have been given. Members of the committee have also spoken before mothers' meetings and fraternal organizations. Several public courses of lectures, including the anatomy and physiology of the organs of generation, embryology, sexual awakening, dangers of syphilis and gonorrhea, have been given at the Chicago Woman's Club, at the Chicago Public Library, and at the Chicago Academy of Science. The audiences in many cases were large and apparently took the profoundest interest in the subject.

(Continued on page 761)

LIST OF SECTION MEETING PLACES AND HOTELS

Section, etc.	Name of Hall	Location of Hall	Hotel Headquarters	Location of Hotel
General Hotel Headquarters.....	.....	.....	Alexandria	5th and Spring
Registration	Hamburger (4th floor) ..	8th and Broadway...	.....	.....
House of Delegates.....	Armory.....	7th and Spring.....	.....	.....
Commercial Exhibit.....	Hamburger (4th floor) ..	8th and Broadway...	.....	.....
President's Reception.....	Shrine Auditorium	655 W. Jefferson....	.....	.....
Smoker	Hamburger (roof garden)	8th and Broadway...	.....	.....
Scientific Exhibit.....	Hamburger (4th floor) ..	8th and Broadway...	.....	.....
Information, P. O., etc.....	Hamburger (4th floor) ..	8th and Broadway...	.....	.....
Practice of Medicine.....	Majestic Theater	8th and Broadway...	Lankershim	7th and Broadway
Nervous and Mental Diseases.....	Walker (McKinley)	7th and Grand.....	Westminster	4th and Main
Diseases of Children.....	Walker (Lincoln)	7th and Grand.....	Westminster	4th and Main
Dermatology	Blanchard (Broadway) ..	3d and Broadway...	Hollenbeck	2d and Spring
Pathology and Physiology.....	Blanchard (Symphony) ..	3d and Hill.....	Hollenbeck	2d and Spring
Surgery	Baptist Auditorium	5th and Olive.....	Alexandria	5th and Spring
Genito-Urinary Diseases.....	Blanchard (Music)	3d and Hill.....	Hollenbeck	2d and Spring
Obstetrics	Baptist Aud. (Berean) ..	5th and Olive.....	Hayward	6th and Spring
Preventive Med. and Public Health..	Hamburger's	8th and Broadway...	Alexandria	5th and Spring
Pharmacology	Walker (Garfield)	7th and Grand.....	Lankershim	7th and Broadway
Ophthalmology	Parish (2d floor).....	6th and Olive.....	Van Nuys	4th and Main
Laryngology and Otology.....	Parish (1st floor).....	6th and Olive.....	Angelus	4th and Spring
Stomatology	Dental College	5th and Wall.....	King Edward....	5th and Los. A.

[The Local Committee on Arrangements sends the above schedule of meeting places and of the hotels designated as headquarters.] •

This committee feels very strongly that in order to awaken similar interest among women all over the country, the cooperation of physicians is absolutely necessary. Physicians are the properly qualified people to discuss the dangers of disease, as well as to teach the lay public the principles of health in a rational and scientific manner. The lay public must understand these principles if we are to have an advance in the control of venereal disease. The principles of ignorance on matters of health and disease have been the methods of the past and have served us very poorly.

The committee has sent out letters to all state federations of women's clubs requesting them to urge the clubs in their federations to have at least one meeting during the months of March and April on the subject of social hygiene, advising them to apply for speakers to the physicians in their locality.

The committee has also suggested that the following outline be substantially adhered to by the clubs: (1) How prevalent is gonorrhea? (2) How is it contracted and communicated? (3) What are its dangers to mother and child? (4) What is its treatment and how can it be exterminated? (6) How prevalent is syphilis? (7) How is it contracted and communicated? (8) What are its dangers to mother and child? (9) What is its treatment and how can it be exterminated?

This apparently extreme outline for lay clubs is deemed necessary because the temptation to dodge the real issue is too great.

It is hoped that the physicians in each community will respond to the request on the part of women's clubs for such lectures.

RACHELLE S. YARROS, M.D.,

Chairman Social Hygiene Committee of the General Federation of Women's Clubs.

The Septic Tank

To the Editor:—THE JOURNAL, Dec. 10, 1910, contains an editorial on the septic tank in which there is a quotation from the well-known sanitary engineer, Mr. Rudolph Hering. The quotation does not fairly represent Mr. Hering's views, and the general trend of the editorial is hardly in keeping, apparently, with the present state of engineering thought.

It is true that the former septic tank has proved a disappointment; it is true that the sludge so treated is often more difficult to manage than the untreated sewage; it is true that not unfrequently the rising sludge breaks up the scum, and creates a disagreeable condition; but it is not true that the septic tank idea is being abandoned.

In the Emscher Valley, in Germany, there is a sewage district of 308 square miles, containing a population of about 2,000,000 persons, and the population is rapidly increasing. Dr. Ing. Karl Imhoff, of Essen, is the Chief of the Sewerage Department (*Abwasserabteilung*) of the Emschergenossenschaft. The Emscher, or, as it is more frequently called, the Imhoff tank is proving thoroughly satisfactory. In that German district there are seven now in operation, serving 250,000 persons. Ten more are being built, and thirty additional tanks are projected for the district. In America, a trial tank has been in operation for some time at Philadelphia, and another is located at the Thirty-Ninth Street testing station of the Chicago Drainage District. A large tank is under construction at Holmsburg, near Philadelphia, and another is being built to care for the entire sewage of Atlanta, Ga. According to a recent number of the *Municipal Engineer*, Erie, Pa., is to construct one, on the advice of Mr. Hering. Similar tanks have been advised for Batavia and Oswego, N. Y.

In the *Engineering News*, Dec. 1, 1910, Mr. Hering says: "It was apparent to me that the sludge question, which had been the *l'élé noir* for 30 years, was nearing a satisfactory solution. The Imhoff tank, based on what had appeared to me a rational principle, was completely fulfilling its promises of two years before by transforming the compacted suspended matter into inoffensive humus material. The reason for this inoffensiveness was a complete digestion under favorable conditions, of all the material that usually becomes foul."

The gases arising are approximately 75 per cent. marsh gas, and 25 per cent. carbon dioxid. (In the articles of Dr. Imhoff in

the *Engineering Record*, and by Hering and Saville in the *Engineering News*, the carbon dioxid is called monoxid, but in a private communication to me Dr. Imhoff corrects the misstatement.) Saville says that it has only been necessary to remove the sludge from some of the tanks once or twice a year. In others it was done more frequently. The removed sludge is inoffensive, and when spread on the drying beds becomes spadeable in from one to four days.

The test tank in Chicago is by the side of the Dortmund test tank. The effluent from each is perfectly clear, but whereas that from the Dortmund tank is very offensive, on account of the large amount of hydrogen sulphid contained, that from the Imhoff is as sweet as spring water.

The drying bed for the Bochum, Germany, plant, which cares for the sewage of 145,000 persons, is only half an acre in size, and the entire sewage of Schwerin, Mecklenburg-Schwerin, is treated within sight of the ducal palace, without offense.

HENRY B. HEMENWAY, M.D., Evanston, Ill.

[COMMENT:—We are at a loss to understand the statement in the first paragraph of the above communication regarding the views of Mr. Hering. If Mr. Hering's own words do not represent his views, we cannot understand why he should have written them or whose views they do represent.

As regards the Imhoff tank, our correspondent is evidently unfamiliar with the history of septic tank treatment, with the characteristics of the Imhoff tank itself and with current nomenclature. The Imhoff tank, as is well-known among sanitary engineers, is so arranged that the sewage with which it is filled is not allowed to reach a "septic" condition. The Imhoff tank is ordinarily spoken of as a purification tank or, as Mr. Saville calls it in the article cited by Dr. Hemenway, "strictly speaking a clarification tank." The distinction between the Imhoff tank and what for many years has gone under the name of septic tank is clear and sharp, and is thoroughly understood by practical workers in this field. —EDITOR.]

Encouragement of the Nostrum Evil by "Reputable" Physicians

To the Editor:—Permit me to ask a question. Why is it that medical men of repute will write articles for so-called medical periodicals whose advertising pages are reeking with advertisements of the worst nostrums, the very kind that the presumed leaders of the profession have set their faces against? I have before me a sample copy of such a periodical making a specialty of surgery. The leading article is written by an eminent surgeon of Baltimore, who specializes in gynecology. What are we to think about such doings? If he is of the rank and file that fight the nostrum evil, why does he not write only for such periodicals as have taken up this fight?

A. E. CONTER, M.D., Apalachicola, Fla.

[COMMENT.—We do not know why reputable physicians will write for such medical journals as those described by our correspondent. Probably for the same reason that equally reputable men will allow their names to appear as "associate editors" or "collaborators" in connection with the same kind of journals. The most disheartening phase of the fight for decency and truthfulness in medical advertising is the apparent indifference, on the part of many physicians of high standing, to the character of the advertising found in medical journals for which they subscribe and to which they contribute. As has been stated time and again in THE JOURNAL, if physicians would insist that the journals they patronize shall be as clean in their advertising pages as they are in their editorial pages, the evils connected with the "proprietary" business would be solved in six months. So long as the leading members of the medical profession give financial support—as subscribers—and moral support—as contributors—to those medical journals whose advertising pages are a disgrace to medicine, so long will the great American fraud—as it relates to the medical profession—flourish. So long, too, will these journals that are trying to be decent labor under a grievous disadvantage.—EDITOR.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

WANTED—FICTION EXTOLLING THE AIMS OF PHYSICIANS

To the Editor:—Kindly send me the names of books—modern fiction—in which the aims and ideals of modern physicians are extolled.
MONTE STERN, M.D., South St. Paul, Minn.

ANSWER.—To reply to our correspondent's query with anything like completeness would require much time and original investigation. It would be well worth doing, however, and we suggest the subject as an inviting one to some physician with literary tastes. If our readers will inform us of books which they have found worthy of commendation along this line we will make up a list and print it in this column for the benefit of all. Such a list will doubtless be of service, as a suggestion for gifts, for placing on reception-room tables, and for the leisure reading of persons interested in the lives of physicians, etc.

THE MANDELBAUM TEST IN TYPHOID FEVER

To the Editor:—Will you kindly publish in your department of Queries and Minor Notes the method of carrying out and the value of Mandelbaum's test in typhoid fever?
E. D. W.

ANSWER.—Mandelbaum's method for rapid and early differentiation of typhoid was described in THE JOURNAL, March 5, 1910, page 827, with illustrations of the pipettes used and of the negative and positive reactions as observed in the hanging drop. Corroborative testimony as to its value was mentioned in THE JOURNAL, Aug. 6, 1910, page 543, and a few other writers since have endorsed its value, especially for detection of healthy bacillus-carriers. It does not seem to have been given much of a trial in this country to date.

TUBERCULOSIS SANITARIUMS—PUBLIC AND PRIVATE

To the Editor:—Can you supply me with a list of the tuberculosis sanitariums in this country, both private and public?
WALTER RITTENHOUSE, M.D., Lake Geneva, Wis.

ANSWER.—A book entitled "The Campaign Against Tuberculosis in the United States, Including a Directory of Institutions Dealing with Tuberculosis in the United States and Canada," may be obtained from Dr. Livingston Farrand, 105 East Twenty-Second Street, New York City. This is a cloth-bound book of 467 pages and gives much other information besides that mentioned in the title. The price is \$1.

REMOVAL OF IMPACTED CERUMEN FROM THE EAR

To the Editor:—The removal of hardened wax from the ear is often a tedious matter, because of the time required to soften it with the usual solution of soda, glycerin and water. I have found that a mixture of acetic acid 1 part and water 3 parts has no injurious effect and will soften the wax very quickly. It may be dropped in and allowed to soak, or used with a syringe in large quantities.
A. T. BLACHLY, M.D., Woodstock, Ore.

ANSWER.—Hydrogen dioxide is another efficient agent. It should be dropped carefully into the ear, with due regard to the pressure that may be caused if the escape of the resultant foam is hindered.

The Public Service

Medical Department, U. S. Army

Changes for the week ended March 4, 1911.

Wolven, Homer F., D.S., reports for temporary duty at Boise Barracks, Idaho.

Ford, Joseph H., major, ordered to duty with troops from Fort Wadsworth, N. Y., to Fort Crockett, Texas.

Stallman, George E., D.S., granted three months' leave of absence about June 15, 1911.

Woodbury, Frank T., major, granted leave of absence for one month and ten days, about April 21, 1911.

Dean, Elmer A., major, granted leave of absence for one month, about March 1, 1911.

Wheate, J. Marshall, M.R.C., orders to proceed to the Philippine Islands for duty is revoked.

Wheate, J. Marshall, M.R.C., relieved from duty at Fort Lincoln, N. Dak., and ordered to Boise Barracks, Idaho, for duty.

Clarke, Joseph T., lieutenant-col., assumed temporary charge of office of chief surgeon, Department of the Columbia, and as attending surgeon, department headquarters.

Welles, E. M., Jr., lieutenant, ordered to proceed from Army General Hospital, San Francisco, to Presidio of Monterey, Cal., for temporary duty.

Kremers, E. D., lieutenant, left Presidio of San Francisco, en route to San Francisco, for duty as surgeon, U. S. Army transport *Buford*, during the trip to China and return.

Field, Peter C., major, relieved from duty at Fort Slocum, N.Y., and ordered to Philippines division for duty on the transport sailing from San Francisco about June 5, 1911.

Miller, Reuben B.; Eastman, William R., and Hall, James F., captains, ordered to Washington, D. C., on May 22, 1911, for examination to determine their fitness for promotion.

Stallman, George E., D.S., ordered to Fort Clark, Texas, for temporary duty.

Kellogg, Preston S., M.R.C., granted leave of absence for one month.

Qualls, Guy L., M.R.C., recently appointed, is ordered to Jefferson Barracks, Mo., for duty.

Connelly, Philip B., M.R.C., recently appointed, is ordered to Fort Monroe, Va., for duty.

Mitchell, Leopold, M.R.C., recently appointed, is ordered to Washington Barracks, Washington, D. C., for duty.

Baker, Frank C., major, left Fort Moultrie, S. C., on tour of inspection of Medical Department, North Carolina National Guard.

Newlove, George, M.R.C., reports arrival at Fort Sam Houston, Texas, for temporary duty in the field.

Myers, William H., M.R.C., reports for temporary duty at Fort Moultrie, S. C.

U. S. Public Health and Marine-Hospital Service

Changes for the fourteen days ended March 1, 1911.

White, J. H., surgeon, granted eighteen days' leave of absence from Feb. 16, 1911, without pay.

Earle, B. J., P. A. surgeon, granted ten days' leave of absence from March 1, 1911.

Lloyd, B. J., P. A. surgeon, directed to proceed to Spokane, Wash., on special temporary duty, Feb. 28, 1911.

Creel, R. H., P. A. surgeon, directed to make such trips as may be necessary in investigation of oyster beds of Virginia, Feb. 17, 1911.

Turnipseed, D. C., asst.-surgeon, directed to proceed to Manila, P. I., and report to chief quarantine officer for duty, Feb. 16, 1911.

Stiles, C. W., professor of zoology, detailed with the mine rescue car of the department of the interior on special temporary duty Feb. 14, 1911.

Allan, A. Smith, A. A. surgeon, granted seven months' leave of absence from April 1, 1911, without pay.

Hasse, P. F., A. A. surgeon, granted seven days' leave of absence from Feb. 11, 1911, under paragraph 210, Service Regulations.

McLarty, A. A., A. A. surgeon, granted thirty days' leave of absence from Feb. 25, 1911.

Schug, F. J., A. A. surgeon, granted thirty days' leave of absence from Feb. 18, 1911.

Storrs, H. R., A. A. surgeon, granted thirty days' leave of absence from March 1, 1911.

Wood, J. E., A. A. surgeon, granted fifteen days' leave of absence from Feb. 24, 1911.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Los Angeles, June 27-30.

Alabama, Medical Society of the State of, Montgomery, April 18.
Am. Assn. of Pathologists and Bacteriologists, Chicago, April 14-15.
American Gastro-Enterological Assn., Philadelphia, April 19-20.
California, Medical Society of State of, Santa Barbara, April 18.
District of Columbia, Medical Association of, Washington, April 25.
Georgia, Medical Association of, Rome, April 19-21.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Medical Society of the Missouri Valley, St. Joseph, Mo., March 16-18.
Mississippi State Medical Association, Jackson, April 11.
New York, Medical Society of the State of, Albany, April 18.
South Carolina Medical Association, Charleston, April 19-21.

CONFERENCE ON MEDICAL EDUCATION AND ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION

Seventh Annual Conference, Held in Chicago, March 1-3, 1911

DR. ARTHUR DEAN BEVAN in the Chair

Dr. A. D. Bevan stated that as chairman of the Council on Medical Education of the American Medical Association he had for seven years made a special study of medical education including the conditions in foreign countries. From this study the following conclusions may be drawn: First, medicine is to-day a science just as chemistry and physics are sciences. The art of medicine to-day rests as firmly on a scientific basis as does the practical application of chemistry and engineering, and as there can be but one science of chemistry, so from now on there can be but one science of medicine. The fads and "pathies" that existed under the old empirical practice of medicine become impossible in the light of modern scientific medicine. A thorough training in the sciences on which medicine is based is now essential and a thorough

familiarity with disease processes in the living patient must be mastered before the student is permitted to begin practice.

A close analysis of all the facts and a careful study of the results arrived at in other countries leads to the conclusion that the minimum amount of training which will make of a medical student a safe practitioner of medicine is the following: After graduating from high school he should have at least one year of training in physics, chemistry and biology; two years in the science of anatomy, physics, pharmacology and pathology; two years in the study of medicine, surgery, obstetrics and the specialties, with the opportunity of studying these subjects in the dispensary and hospital, and lastly a year's practical training as an intern in a hospital.

The program of this conference has been framed for the purpose of presenting in detail this conception of the essentials in modern education. I hope that as a result of this meeting the medical schools and the state boards represented will use all the influence in their power to secure, as soon as possible, the adoption of these requirements in their own schools in their own state.

Progress and Needs in Medical Education

DR. N. P. COLWELL, Chicago, Secretary of the Council on Medical Education: Changes for the better in medical education have been particularly rapid since 1904 when the Council on Medical Education was organized. Up to that year the number of medical colleges continued to increase regardless of the frequently published references to the overcrowded condition of the profession and reports showing the need of better rather than of a larger number of medical colleges. The increase in number continued until in 1904 the maximum of 166 medical colleges was reached, constituting practically half of the world's supply.

Since 1904, however, there has been a decrease in the number of colleges until now the number has been reduced to 129. Of the forty-four colleges closed since 1907, twenty colleges were closed outright, and twenty-four by merging with others. This decrease has been due to the closing of weak and inferior colleges, or by the merging of two or more medical colleges, forming in each instance one invariably stronger and better equipped college. Instead of a serious matter, therefore, this decrease in the number of medical colleges has been of positive benefit, resulting as it has in the formation of fewer but better colleges.

Since 1904 there has also been a decided advancement in the standards of admission. Until 1904, only three or 1.9 per cent. of all medical colleges were requiring for admission more than a high-school education, but now 41 or 31.8 per cent. (nearly one-third) of all colleges are requiring for admission one or more years of collegiate work, and the teaching of medicine as a whole has been placed more largely on a university basis.

In the last seven years, however, other radical improvements in medical education have taken place. College terms have been lengthened, new methods of teaching have been adopted, more salaried teachers have been employed, more endowments secured, new buildings erected, better laboratories and laboratory equipment installed and better hospital connections and clinical facilities secured. In the last year, several of the larger medical schools have received large donations, have been thoroughly reorganized, have built teaching hospitals, and have adopted higher standards of admission. And reports of other similar changes of importance have continued to come in.

Under the methods and conditions which still exist, there is scarcely any person so ignorant that he cannot gain admission to some medical college. So long as an applicant can pay the required fee, there are still colleges which are only too glad to accept him regardless of his lack of preliminary education. The low-standard colleges referred to can exist only in states where the laws regulating the practice of medicine are inadequate or are not enforced.

The solution of many of the problems of medical education rests in the hands of the state licensing boards and doubtless will be solved by them if they are given a fair chance. In many of the states, the medical boards are seriously handi-

capped. In the first place, as a rule, the board is too closely connected with politics, and in some states the members are appointed largely for political reasons, and are liable to be changed with every turn of politics. It is often difficult, therefore, to get good men to accept places on the board. In several states, the board is not given full authority in the premises. Either it is hindered, because of a very poor practice act, or the authority is limited or divided by the establishment of special boards for the various medical sects, which make impossible a satisfactory regulation of the practice of medicine. In the fifty states and territories of the Union there are eighty-three different licensing boards—counting the osteopathic.

At most, there should be but one board in each state; that should be a permanent board and should be composed of men appointed for their particular skill in the examining and licensing of physicians, and not for political reasons. If possible, the board should have a permanent secretary who is selected by the board and who is not subject to removal with every change of governors.

Not only should there be but one board in each state, but there should be a single educational standard to which every applicant for license to treat the sick, by whatever means or method, should comply. Let there be but one portal of entry to the practice of medicine. All who are to treat human ailments, no matter whether they are regulars, homeopaths, osteopaths, or the followers of any other school, are alike in that they must make a diagnosis; they must be capable of differentiating between the various diseases in order to treat intelligently the patients who may come to them.

Entrance Examinations

DR. THOMAS S. FISKE, Secretary of the College Entrance Examination Board, New York City: Certain classes of men may be admitted to the study of medicine with comparative safety on the basis of credentials issued by their former teachers. These are: (1) college graduates and students who have completed at least a part of a college course, when they can present credentials issued by some college in good standing showing that they have studied physics, chemistry and biology, in addition to the fundamental elements of an ordinary education; (2) graduates of accredited high schools, who have completed a four-year course in which the subjects just mentioned have been included. The North Central Association of Colleges and Secondary Schools, like several other similar associations, has prepared a list of accredited high schools whose credentials are recognized by a large number of colleges and universities. In addition to candidates belonging to the two classes already specified and able to present satisfactory credentials, there are numbers of young men who every year demand the privilege of being admitted to the study of medicine. In this number will be: (1) college men and high-school graduates whose credentials do not cover all the required preliminary studies; (2) candidates from unaccredited institutions, that is, from colleges and schools which have not received the privilege of issuing acceptable credentials; (3) candidates of irregular preliminary education, such as those who have been prepared by private tutors, have studied in correspondence schools or in extension courses, or are self-taught. In this irregular class will be included naturally all students who have attended accredited high schools without completing the school course.

Standing at the point of contact between the secondary school and the college, the fundamental principle first in order of importance is that of cooperation between school and college. The board represents a cooperation between the colleges on the one hand, and the secondary schools on the other in respect to a matter of vital importance to both. The secondary schools as well as the colleges have a voice in framing and administering the policies of the board. In the second place, the College Entrance Examination Board does not itself assume power or claim a right to formulate definitions of the requirements for admission to college. In the third place, while the board represents a combined effort on the part of many colleges, it is provided that no college shall

surrender its own individuality. Each institution preserves the right to enforce such standards of excellence as it pleases or to make such allowance as it wishes for character and capacity on the part of students applying for admission. The certificate issued by the board states merely that the holder was examined at a stated time and place in specified subjects, and, as the result of such examinations, received the ratings entered on the certificates.

The following manifest advantages of the examinations held by the College Entrance Examination Board are: 1. They are uniform in subject-matter. 2. They are uniformly administered. 3. They are held at many points to meet the convenience of students at one and the same time. 4. They represent the cooperative effort of a group of colleges, no one of which thereby surrenders its individuality. 5. They represent the cooperation of colleges and secondary schools in respect to a matter of vital importance to both. 6. By reason of their uniformity they aid greatly the work of the secondary schools. 7. They tend to effect a marked saving of time, money and effort in administering college admission requirements.

Subjects Included in the Two Years of College Work Required for Admission to Medical Colleges

DR. CHARLES R. BARDEEN, Madison, Wis.: During the two years of college work required by the majority of medical colleges which can afford to maintain high preliminary standards, about half the time should be devoted to physics, chemistry, biology and English. The other half should be divided between the study of foreign languages and one or more non-technical studies such as art, history, economics, civics, mathematics and philosophy. The aim of this preliminary college work should be to produce breadth of view as well as to give some understanding of scientific knowledge and methods.

Five-Year Medical Course

DR. J. G. ADAMI, Professor of Pathology, McGill University, Montreal: From an educational point of view the great danger of democracy lies in the fallacy that since every individual has the right to equal opportunities all individuals must be given the same opportunities. As a consequence, precise and cast-iron regulations would become the order of the day, and one fixed curriculum would be laid down as the *sine qua non*, whereby at 10:30 a. m. across the whole continent, from the Atlantic to the Pacific and from the Polar regions to the Gulf of Mexico, in country school and crowded city, the individual who has attained to a certain standard in a certain year of the course is being taught the subject-matter of a particular chapter of a particular book on a particular subject. In medical education, it is essential that there be established a minimum of knowledge, and also a minimum time requisite for the acquirement of that knowledge. The Council on Education of the American Medical Association has accomplished a work, the value of which it is difficult to estimate, in making this recognized, and in establishing what should be the minimum. Nevertheless, this minimum should not be regarded as the optimum, and no cast-iron routine should be established to which every medical student should be subjected. Hence, in speaking of the five-year course in medicine, now in operation in the leading Canadian schools, it is not deemed essential that all the medical schools of the continent should adopt such a course. There might be other medical schools having a similar environment, however, which might obtain the best results educationally by establishing a similar course.

Two main reasons led McGill University, four years ago, to change from the four to the five-year system. The first was to make sure that the students possessed a sound training in the preliminary sciences, biology, chemistry, physics, etc. The second reason was to insure thorough hospital training, and to afford adequate time for clinical work. Since our students came from a wide area in a young country, a certain number possessed no opportunity for instruction in the elementary sciences, and as a matter of economy of effort it was better that McGill should have the supervision of the courses in those sciences, rather than that the students should attend courses not specially devised for medical students.

Educationally, the graded course bearing a definite relationship to future teaching is of foremost value. It might be well if the courses in physics, chemistry and biology were not delivered in the medical college itself, but in the laboratories of another faculty; it might also be well if the actual teachers were not medical men. Nevertheless, the teaching of these elementary branches should be given with special reference to the future needs of the student. As a matter of fact it was found possible to give the ordinary medical student as sound and generally useful a course in these preliminary sciences in one year as ordinarily consumed two years in the arts or academic course.

This is not the optimum; the man who desires to do so might well take a complete academic course or to specialize in certain scientific branches. It is necessary, however, to fix a minimum for the ordinary students, the men who at most look forward to ordinary practice, and who constitute the bulk of students in the medical school.

Briefly, the objects in the development of the curriculum at McGill have been: (1) to give a sound course in the preliminary sciences subjects; (2) to make the courses from the third to the fifth year as practical as possible; (3) to observe a natural sequence in the various courses; and (4) to give the maximum of hospital instruction with the freest employment of the wards and of bedside instruction.

Equipment and Instruction of the Laboratory Years

DR. E. P. LYON, Professor of Physiology, St. Louis University School of Medicine: The chief function of a medical school is to make good physicians. The good doctor must be an accurate observer; for training observation anatomy and its related sciences are valuable. He must be a skilful experimenter; chemistry, bacteriology, physiology and pharmacology are preeminently experimental sciences, and each has its peculiar methods and value for medical training. The good physician must further be a man who is able to interpret the facts gained by observation and experiment; all the sciences are valuable as training for this power, but pathology is especially useful. The sciences fundamental to medicine are, therefore, justifiable in the medical curriculum on account of their disciplinary value.

The scientific instruction must be in the hands of professional scientists, not practitioners of medicine. These men must be provided with proper laboratories for teaching and research, with equipment, materials, libraries and assistance. Anything less than this provision is to disregard the model which the school is trying to realize, namely, the good physician.

The laboratory work should be conducted by the professors and not by cheap assistants. If the right men are chosen for heads of departments, the choice of specific equipment may be left to them. The state boards would do well to insist that the colleges have trained instructors, rather than publish lists of required equipment which may or may not be used.

The powers of good observation, experimentation and judgment are necessary for the technical work of the physician. But on account of his intimate relation to the people he needs many other traits which may be summed up as character. The medical school can do little by precept but much by example. The medical teachers should be men of character and culture.

Instruction and Equipment of the Clinical Years

DR. GEORGE BLUMER, Dean of the Medical Faculty, Yale University: The problem of teaching in clinical years is a threefold one. The student should receive a training in the fundamental principles of medicine, surgery and obstetrics. He should also receive a practical training in physical and clinical diagnosis and surgical technic and should have an opportunity to apply the principles and technic by actual contact with patients. The proportion of clinical and didactic teaching as methods of imparting fundamental training should be determined by local conditions. There is an unfortunate tendency to overemphasize didactic teaching. On the contrary technical training in clinical and physical diagnosis should be by labo-

ratory methods. There is a marked advantage in the use of living animals in teaching surgical technic. The contact of students with individual patients is the keynote of the fourth year of instruction. A system of clinical clerks is desirable. In regard to the equipment necessary there should be laboratories with sufficient microscopic and other necessary apparatus for each student; a dispensary especially equipped for teaching with abundant material and a hospital especially equipped for teaching under competent medical school control. The greatest needs at present are proper endowment and properly paid and well-trained men in the clinical years. There is also a lack of absolute control of hospitals by medical schools.

DISCUSSION

MR. ABRAHAM FLEXNER, New York City: It is absolutely necessary that the function of passing on preliminary credentials or holding preliminary examinations should be taken away from the medical schools, and in the case of independent medical schools and of medical departments which nominally or actually belong to universities, the entire business of passing on credentials should be handed over to the academic department. Even this latter step will not insure us any more conscientious or intelligent passing on credentials than the medical department is in the habit of giving, and the more one becomes familiar with the details of administration of American colleges and universities, the more one is inclined to think that the medical schools are not in that matter the only offenders. There are very few colleges or universities that handle the subject of admitting students either intelligently or conscientiously. The recent reports of the president of the Carnegie Foundation show that the admission requirements of American colleges are, without exception, largely nominal; that is to say, the conditions are such that students are so freely admitted and the conditions under which they are admitted are such that it is difficult for any institution with which I am acquainted to make clear the precise basis on which entrance conditions are enforced. The remedy and improvement for this condition are more likely to come if we can secure concentrated criticism and publicity regarding entrance records of the American colleges than if the responsibility is distributed among a great many registration offices or township offices largely without any of the necessary facilities for dealing with records intelligently.

DR. CHARLES W. DABNEY, President of the University of Cincinnati: The authors of these papers have thrown light on the difficult problem of medical education from different points of view. One of the most gratifying observations is that wherever we find advanced entrance standards, the colleges having such high standards have prospered and are prospering. That has been true everywhere, and I am delighted with the progress being made in the advancement of medical education. A thought that has come to me in my own experience in the last few years is that we are in danger of making our methods in medical colleges too mechanical, too fixed, and I hope that some one will tell us how we are going to overcome that. I would like to enter a protest against too mechanical requirements. In our institution we are conscientious in the enforcement of entrance requirements. A general thought I would advance is this: in medical schools, as in engineering schools and colleges of liberal arts, we are introducing too many mechanical methods. We want educated men. We want to produce men who can observe and think and reason. Four years is a desperately short time to give a man an education. He can be given a start, and can probably be trained to observe and to think in that short period of time.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: We must not have cast-iron rules in the teaching of medicine; we must have diversity. We must not expect any two medical schools to teach medicine in exactly the same way. The individual teacher must always be given a certain amount of freedom in the management of his department. I do not expect to dictate to the professor on physiology how he shall teach physiology. If he is a capable man, that must be left to him. I recognize that the fifth-year medical course, adopted in the Canadian medical schools, as referred to by Professor Adams, is applica-

ble to, and probably must be adopted by, certain schools in the United States, but I do not believe that it is comparable with the six years combined course. I do not believe it is so good.

DR. HENRY A. CHRISTIAN, Boston: Of the various methods of increasing the curriculum, three general suggestions have been made. One concerns itself with the increasing the required hours within the assigned time. More has been said about that in the past year than this year. The result of that suggestion has been that the curriculum has been crowded. The limit has been reached already. At present, our curriculum needs energetic surgical treatment. In other words, we need to reduce materially the number of subjects taught, and the number of hours of required work. So far as the curriculum is concerned, leaving it as a four-year curriculum, the war cry now should be simplification. A second method suggested of increasing the curriculum has been along the lines of increasing the preliminary requirements of students before they enter a medical school. We have gradually increased the standard of medical education by increasing the preliminary preparation of the medical student. The method of pediatrics can well be applied to that phase of the subject; we should continue to feed the preliminary requirements until students gradually grow to a larger size. It may be that breast milk, or modified milk, will be best for the infant, but the infant at the present time to my mind needs a little more food and a little more growth. A third method suggested of improving the curriculum has been by the addition of a fifth year. Dr. Westbrook, of the University of Minnesota, proposed that the fifth year shall be a hospital year. In discussing that paper I offered certain objections, not to the student having as much clinical experience as he could possibly get, but to incorporating a fifth year in the medical curriculum and making the medical school responsible for that hospital year.

SYMPOSIUM ON STATE LICENSE

Valuation of Credentials

DR. FRANK B. HILLER, Secretary Missouri State Board of Health: There rests on a medical licensing board a responsibility and duty threefold in character: (1) that highest and greatest duty of safeguarding the public against the unworthy acts of the unqualified who desire to engage in the practice of medicine; (2) the duty of demanding of the institutions teaching medicine and surgery, that these schools and colleges shall so measure up to the standard of equipment and teaching capacity as to permit none to leave their halls with the degree of M.D. except those who are well-rounded and qualified morally and professionally to take their places in the ranks of a profession whose standards and knowledge are advancing with remarkable rapidity of force; (3) that of dealing justly and adequately with the applicant as he appears before such a board, an aspirant to have conferred on him the legal right to engage in the practice of the profession he has chosen. The standards demanded by the board must and necessarily do form the basis from which the valuation is computed, and the quality and uniformity of requirements constitute the rock on which reciprocity suffers injury, and in many instances wreckage. In other words, uniformity of medical requirements and standards exacted by all examining boards in the country is the ideal for which we are working. The agitation by the American Medical Association has brought about many reform methods in the examining boards. The work of the Association necessarily has been along the lines of agitation and education, the Association not having within itself the legal power to enforce the requirements it has advocated. The state examining boards, however, in practically all states, are supported by statutory law enabling them to enforce many or all of the advanced requirements that have been set forth by the Council on Medical Education, and all boards should vigorously assume the responsibility and boldly and justly administer the duties with which they are charged.

Interstate Reciprocity

DR. W. T. GOTT, Secretary Indiana State Board of Medical Registration and Examinations: Under our form of government the physician's license makes him a professional prisoner in the state which granted him his license. If the exigencies

of climate, fortune, or business make it necessary for him to change his location to some other state it is necessary that his qualifications be again tested, and he must undergo another examination. Is this right? If the United States is one country and one people, is it fair or reasonable to require a citizen to submit to forty-eight examination tests in order to demonstrate his fitness to practice medicine in this country? Under our form of government by federated states, however, that is necessary unless some plan of interstate agreement can be secured that will in a measure nationalize the licensing of physicians. That plan is by interstate reciprocity by which due weight is given by one state to credentials obtained from a sister state whose requirements and standards are substantially equivalent to those of the state of proposed residence.

Some men hold that such reciprocity agreements cannot be fairly entered into until all states secure uniform practice acts and uniform requirements; and without question such uniform legislation and requirements would be a great advantage to society, to the individual and to the public. However, if no attempt has been made to establish reciprocity relations between states until all states have adopted by legislative enactment uniform medical practice acts, the millennium would have been reached before a single license would have been issued through reciprocity.

In recognition of a strong demand in the profession, some states entered into reciprocal agreements as early as 1901, and at present the majority of states have such agreements with certain other states. Reciprocity in medical licensure, if conscientiously administered, has a favorable influence on educational standards. State practice acts are not apt to be weakened or the standards lowered since that would endanger the reciprocal relations with other states. Medical colleges also are urged to keep their standards high since their students are thereby made eligible to registration through reciprocity in a larger number of states.

So long as cults in the healing art exist, it is a serious mistake, in my opinion, to provide for each a separate board of medical examiners. The administration of such boards is consciously or unconsciously influenced, biased, and unnecessary temptation is put in the hands of such boards to be lax in passing on the credentials of applicants of their own system of practice. The credentials issued by a board composed entirely of representatives of one system of practice should not be acceptable for a certificate through reciprocity and such a ruling would have a salutary effect in upholding the standard of educational qualifications throughout the country.

Examinations

DR. WILLIAM S. FULLERTON, St. Paul: The primary object of a state board examination is not to protect the physician against the unlicensed man, but the one and only object for the existence of the state board is to protect the public against the incompetent practitioner of medicine, and on that ground, and that alone, state boards rest. So long as the appointment of a state medical examining board is a political favor for party allegiance, irrespective of selecting the best men for the position, just so long will the public fail in being protected to the degree to which they are entitled. Men appointed on boards of examiners should not be behind those who are teaching the subjects in colleges, and they should not be subject to removal at the end of a short term. They should be chosen on the recommendation of the medical profession to the appointive power. These men should have facilities, both financial and otherwise, for carrying on the examinations.

Discussion on State License

DR. HERBERT HARLAN, Maryland: Are examinations as now conducted the best method of testing a candidate's fitness to practice medicine? I should say, unqualifiedly, no; they are not. I believe that a practical examination is feasible, but not on every subject in every department; but I believe that it can and will be slowly introduced. I recognize that there are many difficulties in the way. The Maryland law says that the examination shall be written, but when we succeed in having the law amended, as we hope to do, practical examinations will be provided for.

DR. G. B. YOUNG, United States Public Health and Marine-Hospital Service, Chicago: My experience on an examining board has led me to arrive at the conclusion that a high school certificate is very indefinite as far as giving a reliable test of the candidate's educational fitness to study or to practice medicine is concerned. What we want in education preliminary to study of medicine, as I understand it, is not simply the acquisition of certain knowledge which makes the acquisition of subsequent medical knowledge easier, but such a training of the student's mind will produce a candidate who is intellectually fit to master the problems which are presented in acquiring a medical education, and has ability to apply that knowledge to practice. Is it not worth while for the organized boards to consider the propriety of including in their examination some test or means of ascertaining the definite value to be assigned to the certificates which are presented?

DR. CHARLES H. COOK, Natick, Mass.: Boards of registration in medicine are to protect the public or the citizens of the commonwealth, and the members are state officials, rather than physicians, appointed to those positions, not for the benefit of physicians primarily, but to protect the public. It is a question whether the power of officials of one state can be delegated to the officials in another state. So far as I know, this point has never been carried to the courts. If it were, I would be interested to know what the decision would be.

MR. ABRAHAM FLENNER, New York City: None of the European countries I have visited—France, Germany, Austria or England—still makes exclusive use of the written examination. Although they all to some extent employ a written examination, the emphasis falls strongly on the practical features. One hears in America many different objections to the introduction of the practical examination. In some instances the laws seem hostile. Whether the law which prescribes a written examination could not really be circumvented, so that a practical examination, so far as the answers go are concerned, can take more or less a written form, I do not know. I should think it not impossible that a little ingenuity expended on that point might bring forth some interesting results and avoid the necessity of recasting the state law. It is alleged, also, that the numbers to be examined in this country are fatal to the introduction of the practical examination. I believe that the Minnesota State Board, for example, is not now embarrassed by the question of numbers. I suspect that any state board now undertaking to examine its candidates practically will find that the embarrassment due to the popularity of the examination will prove decreasingly important. As a matter of fact, if the practical examination were introduced, I believe it would be found that the question of numbers would cut no figure whatsoever. The most efficient practical examination which it was my good fortune to witness was also the largest from the standpoint of numbers, this examination having been held by the Conjoint Board, in London, England.

DR. GEORGE H. MATSON, Columbus, O.: The Ohio State Board has undertaken practical examinations in physical diagnosis. We have now finished three examinations of this kind. The applicants who have appeared before us have been called on to test their ability on patients who were suffering with various cardiac and pulmonary diseases, with enlarged livers and spleens, and some of them with incipient nervous affections, tabes particularly, and one or two patients with hemiplegia. We secured these patients from the county infirmaries and from the dispensaries, and the first exhibition of this practical examination was remarkable. Formerly, we had at our June examination from 240 to 250 applicants, but since we have established practical examinations we are having from 125 to 140.

Universal reciprocity can never obtain for three reasons: first, because universal uniformity can never obtain in medical colleges. Second, universal laws can never obtain in a progressive body of states, and, third, we can never have uniformity in the personnel of medical boards, so that when we speak of having universal reciprocity we can only look in the future to the minimum medical requirement and never to a maximum. Practical examinations are a reality, and not a theory.

Evening Session

Standards and Authority

PROF. GEORGE EDGAR VINCENT, President-Elect of the University of Minnesota: Physicians are rightly regarded as social servants; their skill and fidelity are obviously vital to the community. Yet this view is far from universal. Individuals by tens and thousands see in a medical career chiefly a means of livelihood. They resent the rising standards of medical education as obstacles to the early enjoyment of an income. Many of these individualists resort to short-cut schools and to least resistant states. But these outcasts are embittered by exclusion from prestige in practice. They swell the ranks of the quacks and unfurl the black flag of the medical privateer. The discredited schools and diploma mills also insist on the old dogmas of liberty and *laissez faire*, and make appeals to the traditions of the fathers, the spirit of '76 and other quaintly irrelevant ideas and shibboleths. To the influences which resist the standardization of medical education may be added makers of proprietary remedies whose success varies directly with the credulity of the public. But in spite of impatient selfishness, mental inertia, sincere fanaticism, unscrupulous greed, the standardizing of medical education goes steadily if too slowly on. The association under whose auspices we meet affords an example of that extra-legal centralized organization which creates national institutions amid what often seems a chaos of state particularism. Slowly but inevitably we are selecting a medical élite, experts to whom we entrust a constantly growing body of scientific knowledge and an elaborated technic. If the community for its own protection insists on testing and training its social functionaries, it must provide a way of finding and encouraging unusual ability however this may be circumstanced. A system of scholarships awarded by competent authority after adequate tests and continued only so long as the scholar's work justifies the support would seem to be a socially necessary consequence of the increased demand of medical education. Medical associations, individuals, institutions and the state should all have a share in creating such a system.

Scientific men should face facts as they are. The public mind is like a force of Nature. It is childish to rail at it, to denounce it, to expect it to be docile about technical matters. Physicians should diagnose the condition of the public mind calmly and in a scientific spirit. They should try to trace the play of cause and effect, and then take measures to bring desired results to pass. In this they have the right to ask the cooperation of all thinking men and women. The public is controlled by leaders. These leaders must be informed and intelligent. Colleges and universities have a responsibility in training these leaders. Every institution of higher education should be a model of public sanitation and hygiene. Every graduate should be well-grounded in the principles of personal and community health. The public schools could do much more than they do at present to train children in hygienic habits and in intelligent deference to sanitary regulations. Popular literature, lectures, parent's meetings, visiting nurse associations, organizations like the antituberculosis societies, city and state health departments and boards—agencies of many kinds are all engaged in the work of popular health education. Would that Mr. Carnegie's next \$10,000,000 gift might be devoted to publishing in newspapers authoritative advertising bulletins on hygiene and sanitation. Many an editor would be glad to be freed from irksome slavery to the "patent-medicine" men.

Great responsibility for the education of the public must fall on members of the medical profession. Physicians and professors of medicine must devote some time to public addresses, to cooperation with public school authorities, to hearty support of local health authorities when these are reasonably competent, and to civic movements designed to improve a defective public health service.

Movements for legislation affecting medical education, admission to the practice of the profession, the organization of health boards, the enactment of sanitary regulations, etc., should all be regarded as a part of the process by which the expert few and the many are to be brought into relations of mutual respect and good will.

The State and Medical Education

PROF. WILLIAM L. BRYAN, President of Indiana University: The first appropriation of public funds for medical education in Indiana was made within the past thirty days. The schools of medicine have come together. Aside from the two-year school at Valparaiso, for which I wish to say a good word in passing, we have now in Indiana one school of medicine, and that is a department of the state university. The sects have come together on the terms of the law governing the medical schools. The language of the statute is as follows:

That there shall be no discrimination for or against any school or system of medicine in the university, and that all or each of the schools or systems of medicine now recognized by the state shall have adequate opportunity to teach the practice of medicine in the university according to the principles advocated by them respectively, and that it shall be the duty of the trustees of Indiana University to provide such instruction in as thorough a manner as the means at their disposal will permit, and as nearly as possible to provide the same quality of instruction whenever a reasonable demand shall be made for the same.

Everybody agreed to that. The university holds the doors of the school hospitably open to every variety of medical theory on the conditions set forth in the law. Up to this time no particular school of medicine has taken advantage of this law.

The Responsibility of State Universities in Public Health Matters

PROF. GEORGE E. MACLEAN, President, State University of Iowa: A college of medicine first should turn out well-prepared practitioners, not simply to cure disease, but educated as sanitarians, and conscious that the medicine of to-day must lend itself to the science of preservation and health and prevention of disease. The practitioner must be more than a mere medical man. He must be a citizen, and with large functions for society. He, therefore, will study in the university psychology, sociology, philanthropy, social pathology. Experience shows that he ought to know something of political and economic science, for more physicians break into the legislature than into the penitentiary. The state board of health should find the highest expert service, free from all political contamination, in the men of laboratories of the State University. The university students, and especially the medical students, should have the benefit of these health experiment stations, for enlarging the scope of their undergraduate education, and in order to be trained for sympathetic cooperation with the health authorities and the university as they settle in their professions throughout the state.

The Board of Control in Iowa is charged with inspection of poor-houses, and even of private eleemosynary institutions, and the state board of health with inspection of hospitals, maternity and children's homes. This accepted responsibility by the state opens the door when correlation of all the state bodies is effected, for the university to aid by its experts, and to make all these institutions in some sense adjuncts to the university laboratories. A federation of the hospitals, public and private, with the university, which might furnish interns, would not only give a proper extension of the course in medicine, but would disseminate missionaries of public health. Most naturally, the university becomes as much of a coordinating point in sanitary matters as it is in educational affairs.

Impressed by our opportunities and the vision of the future possibilities of public health, we put up the prayer to you medical men: "Come over into Macedonia and help us."

The original Macedonian cry was a missionary call and a crisis in civilization when the Occident turned to the Orient for the life of Christianity. At this moment, according to Edward A. Woods, America is awakening to the realization that the chief wealth of her country is not in its material resources, but in the lives and health of its people. The lives of a nation, according to the insurance men, are worth three times its property, or over three and one-half billions of dollars. In the light of the inestimable worth of life in a nation with a Christian faith, how great our responsibility in this tremendous public health movement now just starting to conserve health and even lengthen life!

JOINT CONFERENCE ON MEDICAL PRACTICE ACTS

Medical Practice Acts and the Public

HON. EDWARD J. BRUNDAGE, Corporation Counsel, City of Chicago: Notwithstanding the vastly greater importance of the public health, all requirements for the practice of medicine have been left by the people to the physicians themselves. While watchful over the possession of things material, the people have been careless in their dealings with the most precious of all assets—good health. If unfit men are practicing medicine in this day, the fault is not with the profession, but with the public that permits quack-producing conditions to exist. There has been a great advance in the last decade in the standard for the practicing of medicine, and physicians are entitled to the credit for raising the standard. The public, through ignorance or lack of understanding, has contributed little toward helping physicians in this work. The state of the public health is dependent on the progressiveness of the medical profession, but the profession is not responsible if the public is lax. Some of the people have become aware of this situation, but the vast majority are still unable to discriminate between physicians properly trained and those untrained. The title of doctor is the most abused of all. In its common use it signifies nothing as a title of learning or distinction. Doctors are of as many varieties as the product of a pickle factory. The thing essential for the protection of the public is some way to discriminate between men bearing the title. In my judgment a man of training, high education and character, ought to possess a title distinguishing him from the man who treats the diseases of animals or practices chiropody. But one course appears to the layman to protect the public against such incompetency, and that is to raise the standard of admission to medical colleges by requiring a preliminary degree in arts or sciences as a prerequisite. Even then, after graduation, no license should be granted to practice medicine or surgery until actual experience in a hospital or similar work has been obtained, for a sufficient period to demonstrate ability.

The best evidence that the public is becoming aware of the importance of the physician to the welfare of the community is the growing demand for the creation of a national department of health. Problems in matters of health are constantly being created with the rapid growth of urban life. Medical science is taxed to its greatest capacity to obviate the danger caused by the massing of people in restricted areas. No branch of science has progressed so rapidly, no profession contains more thinkers, willing to devote their lives to the betterment of mankind. The public is learning more and more to depend on physicians, and I am sure the progressive men of the medical profession will find increasing support from the public at large.

Attitude of the Judiciary in Enforcement of Medical Practice Acts

JUDGE JESSE A. BALDWIN, Appellate Court, Chicago: The medical practice acts in the various states have been vigorously contested on the ground of alleged unconstitutionality. A proper consideration of the basis on which such legislation rests readily discovers satisfactory reasons why the courts, in more than thirty of the states where the legislation was directly attacked, have distinctly sustained the constitutionality of such legislation. With the medical practice acts varying, as they do, in the several states, and with supreme courts, and in many instances appellate courts, in each of the states, it is not surprising that there should be a lack of absolute uniformity either in the legislation or in the decisions of the courts under it. It is difficult to draw any conclusion as to the attitude of the judiciary in the enforcement of medical practice acts from the decisions, and yet examination makes it safe to say that so far as they are criminal statutes, enforceable by fine and imprisonment, the courts are required by the accepted canons of construction to construe them strictly, but examination also shows that both the judiciary and the medical fraternity are applying a progressive science.

While possibly the courts are even more conservative, and more subservient to precedent than the medical profession, no one, after a careful review of the situation, can deny that even the courts are affected by new and progressive views and con-

structions which are, by changed conditions and necessities, made applicable to the case under consideration. The statutory regulations in regard to the practice acts must be adopted in good faith, must be reasonable, must operate equally on all alike, must prescribe qualifications reasonably possible of attainment by study and character, and fairly intended to protect the public against fraud and imposition. If these requirements are met, the acts will be sustained by the courts, even though the conditions are rigorous, and though sometimes the provisions are not such as the court would itself deem the wisest.

"Let me urge you to move forward unitedly, and secure in the interests of suffering humanity the strongest and best legislation possible; continue in your efforts to compel higher standards in your profession, subordinating selfish interests to the public good, and be assured that the attitude of the judiciary in the enforcement of legislation enacted under such conditions and to embody such purposes will be cordially sympathetic."

What Should be the Attitude of the State Toward the Practice of Medicine

DR. M. L. HARRIS, Chicago: The only justifiable pretext for a medical practice act is that it shall protect the people against ignorance and incompetence on the part of those who treat the sick. It was thought that this might be accomplished by prohibiting anyone from practicing medicine who had not been licensed so to do, and in not licensing anyone who had not proved himself qualified. A law carefully drawn up on these lines and strictly enforced would undoubtedly restrict the practice of medicine to those qualified. But none of the acts so far passed adhere strictly to this plan nor are any of those which closely approximate it strictly enforced. The state should not attempt to restrict the practice of medicine to a particular class, but should designate those who are competent so that the public may be able to distinguish between the competent and incompetent. Joined to this duty of guidance is the equally important duty of protection. None but qualified physicians should be eligible to any medical position in the public health service, or in any public or charitable institution under the control of the state or any of its municipalities. As all contagious diseases are a menace to the public, and as most of them should be reported to the proper health officers, no unqualified person should be permitted to treat or to assume the medical care of people suffering from these diseases. All parents, guardians and institutions having minors under their care or control should be obliged to furnish them with qualified medical attention in case they are sick or injured and require it. No death certificate should be accepted by the authorities unless signed by a qualified physician. In this manner the state will be able to carry out its duty of protection.

The restrictive or licensing plan of regulating the practice of medicine is fundamentally wrong in principle in that it makes the state dictatorial in a matter of personal rights which is best left to the thinking individual.

Regulation of the Practice of Medicine for the Public Good

MR. CHARLES R. HENDERSON, Professor of Sociology, University of Chicago: Studies and experience disclose the necessity of training in purely scientific investigation. Every advance movement in public hygiene must start from a new laboratory revelation, as the control of diphtheria, typhoid, tuberculosis, summer diseases of infants. Not all, not even a majority of physicians, can be pioneers, but every one should have the fundamental discipline which will make him intelligent and sympathetic toward the investigators. The educated physician is needed to save the nation from quackery which fattens on popular ignorance and inherited superstition. The "patent-medicine" vendors and the faith-healers thrive because science is not a common heritage. The alcoholic superstition owes its survival partly to the want of unanimity among doctors. Free competition in each calling has limits of usefulness. A physician's "trust" is desirable on certain conditions: it must admit all who are competent; it must use fair tests to exclude all others; its charges must not be prohibitive to the poor. Some affect to fear that examinations will snuff out some spark of genius; but the criticism of scholars is a

guarantee that no valuable idea will be lost. Indeed, the higher the standard of state examination, the more certain it becomes that every possible hypothesis will be adequately tested by men who try their experiments cautiously on animals before they take too great risks with human patients.

The Administration of Medical Practice Laws

DR. A. B. BROWN, Secretary Louisiana State Board of Medical Examiners: In order for the Board of Medical Examiners to administer usefully the functions that should belong to such a board, it is essential that there should be legislative authority broad enough to permit the board to cover the entire field of regulation of practitioners of medicine. Such a statute must not be too strict in limiting the power of such board. It is humanly impossible for the author of a statute of this nature to foresee all the possible changes that may occur in connection with the development of medical science. The definition of the practice of medicine must be comprehensive. It must enable the board to reach every person who professes to cure disease, or to remedy defects in human beings, or to relieve physical pain or to rectify mental aberration. As a prerequisite to the right to take examinations, the statute should require the presentation to the board of examiners of a diploma, or equivalent certificate showing that the candidate had completed, to the satisfaction of the medical college issuing it, his course in said college; said diploma or equivalent certificate must be issued by a college the requirements of which are satisfactory to the board. The standing of each college must be left to the judgment of the board of examiners. There can be no other judge of the collegiate standing than the board. The legal procedure by which the law is to be enforced should be such as to render the board independent of any local influences that might attempt to obstruct the provisions of the board.

Financing of State Board Work

DR. HERBERT HARLAN, President, Maryland State Board of Medical Examiners, Baltimore: The objection to the financing of state boards by the state, is the difficulty in arranging for a liberal expense account under the control of the board. For example, would the average controller pass the voucher for *per diem* and traveling expenses of a representative of a board to attend such a meeting as this one? Again, the state law officers would surely be expected to act as counsel in defending suits and pushing prosecutions. Many state's attorneys have shown themselves to be, if not hostile, at least very indifferent in regard to enforcing medical practice acts. In Maryland we had great difficulty on this point even though we have our own attorney to aid us. It is my opinion that the best results would come from leaving the distribution of the funds entirely with the boards. In certain states, where the amount is large, larger than is needed for all expenses and for reasonable compensation of the secretary and members, as the money all comes from the physicians, there could be no serious objection to having the surplus turned over to the uses of the state medical society.

CONFERENCE OF THE NATIONAL LEGISLATIVE COUNCIL

The chairman, Dr. H. B. Favill, appointed the following committee on resolutions: Dr. E. J. McKnight, chairman, Hartford, Conn.; Dr. A. B. Brown, New Orleans; Dr. R. M. Funkhouser, St. Louis; Dr. Charles F. Whithington, Boston; and Dr. Frederick R. Green, Chicago, secretary of the Council on Health and Public Instruction, *ex officio*.

DR. F. R. GREEN, Chicago, presented his report, after which there was a roll-call by states and presentation of reports from state representatives. There were also reports from interim committees, Carroll memorial, medical expert testimony and optometry.

Report of Committee on Optometry

DR. JOHN C. BOSSBY, Chairman, Boston: Twenty-four states had legalized optometry by the end of 1909; or, as opticians claim, had recognized it as a profession. In 1910 physicians vigorously fought the further extension of this pernicious measure, and the opticians were beaten in every

state where they made their effort. The committee finds apathy on this subject in the medical ranks. The fight in the past has been by a few medical men, and this state of affairs should be remedied. Columbia University, of New York, was persuaded during the last year to establish a course in optometry. The university prescribed a minimum of twelve students before starting the course. The result of the establishment of this course has been that Columbia University has been quoted in many states as the chief argument for the establishment of further optometry laws; and yet, with all this effort, there were on the first of February of this year, but eleven students taking this course. The committee is impressed with the great harm that can be done to the public through unwise legislation, and its members hope that every medical man present at this conference will see this subject in all its present and future dangers.

Educational Work in Vital Statistics

DR. CRESSY L. WILBUR, Chief Statistician, Bureau of the Federal Census, Washington, D. C.: One of the chief assets of the Bureau of the Census in its work of endeavoring to promote the better registration of vital statistics in the United States is the continued earnest cooperation of the organized medical profession. Nothing could be done if the physicians of the United States were opposed to the enactment and enforcement of effective registration laws, and practically all that has been done to secure such legislation has been through the active efforts of the medical profession. The registration service in the United States is too often treated as merely clerical or the mechanical part of public health organization and entrusted to utterly incompetent hands. The result may be exceedingly disastrous when the health officer undertakes to test his work by the use of vital statistics, and in general it may be said that all sanitary workers in this country are hampered by the lack of uniformity and thoroughness in statistical publications; hence the desirability of building up, with its roots in the broad scheme of medical education, a body of trained practical workers in vital statistics and appreciative students and users of their results. This object is nearer to accomplishment than ever before, but it will take many years of earnest cooperative effort on the part of these councils of education and legislation, with the full support of the entire profession before we shall bring this neglected subject up to the full measure of its usefulness.

REPORT OF COMMITTEE ON RESOLUTIONS

The Committee on Resolutions presented the following report, which was adopted:

WHEREAS, The Committee on Carroll Memorial has completed its work in a highly satisfactory manner to all concerned; therefore, be it

Resolved, That the final report of the committee be accepted and the committee discharged; and be it further

Resolved, That the committee recommends that the cordial thanks of the conference be extended to Major Ireland and his committee for the efficient manner in which they have accomplished their work.

Resolved, That the thanks of the conference be extended to Drs. Halsey, Gay and Bristow for their individual efforts in the consideration of medical expert testimony, and that this committee be discharged; and, be it further

Resolved, That the Council on Health and Public Instruction be requested to establish a standing committee to give this matter thorough consideration and, if possible, to confer with a committee of the American Bar Association.

Resolved, That the Seventh Annual Conference of the American Medical Association on Medical Education and Medical Legislation deplores the action of Columbia University, of New York, in establishing a course of study in optometry, for the reason that opticians have never succeeded in founding an official school of optics or optometry, but have relied on the recognition or legalization of the word optometry to make them a profession, and for the further reason that the existence of such a course at Columbia University has this year been used in many states as the chief argument for the further enactment of optometry laws, which are designed to permit opticians to practice medicine in a limited degree; and, be it further

Resolved, That a copy of these resolutions be transmitted by the secretary of the conference to the president of Columbia University of New York.

Resolved, That this conference reaffirms its endorsement of the model bill on vital statistics and expresses its appreciation of the interest shown by Hon. E. D. Durand, director of the census, and by Dr. Cressy L. Wilbur, chief of the division of vital statistics, in promoting the adoption of uniform vital statistic laws in the various states, and that the secretary be instructed to furnish a copy of these resolutions to the above-mentioned gentlemen.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE SECRET COMMISSION EVIL

The following editorial appeared in *Colorado Medicine*, February, 1911:

"EVERY MAN WHO DOES GOOD WORK SHOULD BE PAID FOR WHAT HE DOES, AND NO MAN SHOULD BE PAID FOR WHAT HE DOES NOT DO."

1. A surgeon who lets it be understood that he will give to every doctor sending him a case, a certain proportion of the fee, whether he earns it or not—say half, as is frequently done—really makes every one who agrees to this his hired agent, just as much as if he sent him out to canvass the incoming railroad trains with the promise of a fat commission for every patient he might steer in.

These agents are sometimes beginners in practice or else more or less unsuccessful and unscrupulous practitioners. They soon discover that they can make more money and make it easier by furnishing cases on commission than they can through legitimate practice, and their hunt for subjects for operation becomes a frantic one. With a poorly paying practice on the one hand and a rich bait of 50 per cent. of the fee dangling within easy reach on the other, they soon begin to strain a point and urge operations where operations are unnecessary. It becomes easy to say: "If you are not operated on you will die." Under the circumstances excuses for this questionable conduct are easily found.

Now, the surgeon who employs these agents is a more or less unscrupulous man, who is wildly grasping for work and does not care how he gets it. He is not willing to earn it by proving to others that he can do things well, thus establishing a legitimate reputation—the recognized and approved method—but he is anxious to buy his work and let the proof of ability come afterward, if it ever does come.

It may be said that such a man may soon become an expert operator, owing to the amount of work which he will do. True: but an expert operator does not constitute a good surgeon—this requires, in addition, judgment, learning, conscience, and an undeviating purpose to do that which is best in every respect for the patient, irrespective of fees and operative statistics. In this sense, he who buys his cases can seldom become a good surgeon.

When an agent sends a case to such a commission-paying employer, the necessity for an operation has often been exaggerated so as to make sure of bagging the game. Hence, in order to protect the interests of his agent, as well as the interests of his pocket, the surgeon *must* operate; but it can readily be conceived that his already elastic conscience is usually equal to the emergency; and I venture to say that few such cases are ever turned down, even when an operation is not really called for.

2. Hence, the commission business leads to indiscriminate, reckless and useless operating; and in these days, when the tendency in this direction is already too great, owing to the comparative ease with which many operations can be done, this is unfortunate, to say the least.

3. Individual ability in different lines of work should be encouraged and not hampered. In every community there are surgeons who are noted for certain things—one is particularly skilful in hysterectomy, another in operating on the brain, a third in the surgery of the appendix, a fourth in stomach and gall-bladder work. The general practitioner is supposed to find out in the course of time who these men are, and his patients have a right to expect that he will use this knowledge for their benefit. But how can a fine, or even a coarse discrimination be exercised with 50 per cent. of the fee obscuring the vision, and with nothing to do but reach out and take it? The doctor's employer, the commission-paying surgeon, inevitably gets the case, whether he is the best man to handle it or not.

Suppose your wife were very sick and required the services of a surgeon, and you trusted your family physician to pick out the one best suited to operate on this particular case; and you found out afterward that the surgeon had really been selected not because of fitness, but because he paid your doctor half the fee for selecting him. How would you feel about this? Would you not feel that you had been buncoed? Would you not call it an unjustifiable traffic in human misfortune? Would you not feel like shooting your family physician, especially if disaster resulted to your wife?

4. Publicity is what is needed: If but two doctors resided in a small town and one was known to be a "commission-doctor," while the other carried on a legitimate business of his own, being in the employ of no one and choosing his surgeons according to their merits alone—if this state of affairs existed, other things being equal, how long would it take the populace to make a selection between these two men?

And this suggests the easiest, best and quickest manner of doing away with the commission evil—publicity. Such things flourish in darkness. Turn on the light and they run for cover. Is there any doubt that if the public knew a surgeon obtained his work by paying commissions rather than by proving his skill it would express its disapproval by avoiding him?

5. Every man should be paid for what he does, and no man should be paid for what he does not do:

Simply referring a case to a surgeon without further action should usually mean a consultation fee only, which the patient will generally pay without question. It is true, however, that in surgical cases the responsibility is often increased by advising operation; but if the case is one which should go to the surgeon, is not the responsibility even greater if he is not so advised? In fact, the responsibility cannot be escaped either way. It would be right, however, for medical men to demand a larger fee for the added responsibility and trouble accompanying the diagnosis of many surgical cases, the selection of a surgeon, and other matters incidental to the necessary arrangements for an operation. When this matter is presented in a proper light to the public it is always quick to see its justice.

When a case is sent to a surgeon, especially to a strange surgeon in a strange city, the patient often desires his physician to accompany him. Even when this is not actually necessary, it contributes a feeling of security and backing which would otherwise be absent. In addition, most individuals wish their physician to be present at an operation, and it gives them confidence to know that he is there and watching over their interests. They also want him to see them during their convalescence, to cheer them up and to make such suggestions as his knowledge of their peculiarities may prompt.

There can be no question that these attentions should be paid for according to their value; but this is not yet sufficiently recognized. Physicians too often give their time and skill and receive no pay in return. Undoubtedly, the proper method would be for the patient to meet these obligations directly. At present, however, he often does not see it in this light, and in order to educate the people up to this point (6) it is permissible for the surgeon and the physician to present a joint bill—for services rendered by Dr. A. and Dr. B. This can be itemized if desired, or at least it should be if the patient request it. Understand, what makes such a joint bill legitimate is that it is clearly indicated that it is for services rendered by both the attendants, and not by the surgeon alone. In this way it not only assists the physician in collecting his just dues, but also helps to educate the public to understand that the physician's time and services in connection with an operation are worth something—a point well worth driving home at every opportunity, because services for which nothing is charged are usually estimated as being worth nothing.

The other day a Denver surgeon remarked: "It is nobody's business what I do with a fee, as long as I do not overcharge—if I want to give half of it away, that is my affair, and does not concern the patient or anyone else." But it does concern some one else. It concerns the patient, the public and the whole medical profession.

If we wish to retain the confidence of the public, and our own honesty and self-esteem, no transaction should be entered into that we cannot openly lay before the patient and his friends. This is a precept which we cannot afford to neglect. The tendency is already too great to distrust the actions and motives of doctors, and we should do all in our power to combat it rather than to encourage it. We should in every way endeavor to convince people that we are honest men with right motives, who are trying, within our limitations, to cure the sick without taking undue advantage of them. This is really what separates us from the charlatan and the quack. It is the standard raised by our forefathers, and we should endeavor to maintain it.

7. When an agent receives part of a fee without earning it, somebody suffers—either the surgeon gets too little or the patient pays too much. In the former instance the rights and dignities of the profession are trampled on, and in the latter the individual is buncoed.

For the surgeon's agent to receive from the patient something for nothing without the patient's knowledge, is as culpable as if he engaged in a get-rich-quick scheme, or robbed a bank or held up a citizen on the highway. Because surgeons are popularly believed to make more money than the general practitioner, which in the long run is questionable, is no reason why

the latter should graft either on the surgeon or on the public. If there is a real grievance it should be rectified in some more legitimate manner, in accord with the high ideals and moral responsibilities which physicians are supposed to possess—for instance, by educating the public to understand that with the growth of surgery increased responsibilities and duties have been thrust on the general practitioner, which should receive increased remuneration.

It goes without saying that every surgeon will be glad to assist in such a campaign of education so far as lies within his power. For instance, a few words to the patient in explanation of the situation are usually sufficient to bring about a proper understanding of the value of the services rendered by the physician before the operation, during or after it; assuming, of course, that the physician is not a grafter and desirous of obtaining remuneration for something he does not do. It is usually easy enough to convince a patient that a good diagnosis, involving the responsibilities and trouble of an operation, is worth more than ordinary medical services, and should be paid for accordingly, but this can never be done by the medical man pretending to work for nothing and then getting half the fee from the surgeon.

8. Buying cases is worse in some ways than advertising in the daily press, because the public has no way of protecting itself against this form of graft. All members of the profession recognize that advertising in the newspapers or on bill-boards is a serious breach of ethics. This is one thing on which we fully agree and are extremely "touchy." The reason for this is not so much because it lowers our dignity and cheapens us, although this is of importance, but because advertising enables men to make false and wonderful claims to deceive the public, the extent of which is limited only by their ability to write and pay for advertisements. From time immemorial it has been recognized that the only decent and honorable course for the doctor to pursue is to let his work speak for itself, and not cry his accomplishments from the house-tops, this being left to the quacks and to the charlatans. If we acknowledge this to be true, how do we reconcile with it the actions of the commission-paying surgeon? Instead of letting his work speak for itself, he pays for his cases—he does not make his reputation, he buys it like any other charlatan. He introduces into the profession a form of advertising much more pernicious than that which employs the newspapers, because against its secret practice the public cannot defend itself. People may be too intelligent to be misled by the allurements of an ordinary advertisement; but when they are steered against a commission-paying surgeon by his paid agent they are helpless, because the game of graft and bunco is a hidden game and not an open one, like that of the ordinary quack.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—Second Weekly Meeting

TUMORS OF THE UTERUS

FIBROMYOMATA: Histologic varieties, number, size, rate of growth. Clinical varieties; interstitial, subperitoneal, submucous and intraligamentous. Secondary changes: Atrophy, calcification, fatty degeneration, infection, edema, necrobiosis, cystic degeneration, malignancy.

DIAGNOSIS: History, symptoms, physical examination.

1. Interstitial, pelvic and abdominal in situation.
2. Subperitoneal, pelvic and abdominal in situation.
3. Submucous fibroma. Uterine polypi.
4. Intraligamentous, between folds of broad ligament, anterior and posterior tumors.

CHORIOEPITHELIOMA. DECIDUOMA MALIGNUM

ORIGIN: Fetal or maternal. Location. Microscopic diagnosis. Metastasis.

SYMPTOMS: History, hemorrhage, discharge, pain, anemia, cachexia, etc. Physical examination. Symptoms of metastasis. Differentiate from carcinoma and sarcoma, incomplete abortion, submucous fibroid.

CANCER OF UTERUS: (a) Of the body, (b) of the cervix. Diagnosis, history, symptoms, physical signs, microscopic examination.

SARCOMA OF THE UTERUS: 1. Fibrosarcoma, affecting primarily the parenchyma. 2. Diffuse sarcoma, affecting primarily the endometrium. Diagnosis of each type.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Garde, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

MAINE: Portland, March 14-15. Sec., Dr. F. W. Searle, 806 Congress St., Portland.

MASSACHUSETTS: State House, Boston, March 14-16. Sec., Dr. Edwin B. Harvey, Room 159, State House.

Indiana January Report

Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Jan. 10-12, 1911. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 17, of whom 16 passed and 1 failed. Seven reciprocal licenses have been granted since Jan. 1, 1911. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1910)		86.7
Northwestern University Medical School	(1892)		88.9
College of Med. and Surg., Physio-Medical, Chicago	(1911)		85.6
Chicago College of Medicine and Surgery	(1910)		89.5
Indiana University	(1910)		83.9
Hospital College of Medicine, Louisville	(1892)		75.7
University of Louisville	(1910)	87,	92.1
Southwestern Homeopathic College, Louisville	(1906)		75.0
University of Michigan, College of Med. and Surg.	(1910)	85.3,	84.6
Eclectic Medical Institute, Cincinnati	(1910)		85.2
Ohio-Miami Medical College	(1910)		89.7
University of Toronto, Canada	(1907)		89.8
University of Aberdeen, Scotland	(1889)		90.4
Regia University, Pavia, Italy	(1891)		84.4

FAILED

Indiana University, School of Medicine	(1910)	67.3
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LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Coll. of Phys. and Surg., Chicago	(1905) (1908) (1909)	Illinois
University of Maryland	(1898)	Maryland
University of Michigan, College of Med. and Surg.	(1909)	Michigan
Cleveland Homeopathic College	(1909)	Ohio
Western Reserve University, Cleveland	(1909)	Ohio

North Dakota January Report

Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, Jan. 3-5, 1911. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 8, of whom 7 passed and 1 failed. Six candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1892)		83
University of Iowa, College of Medicine	(1910)		84
Keokuk Medical College, College of Phys. and Surg.	(1891)		75
Baltimore Medical College	(1910)		84
Johns Hopkins University	(1905)		82
Western Reserve University	(1908)		85
Jefferson Medical College	(1910)		90

FAILED

Chicago Physio-Medical College*	(1896)†	
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LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1905) (1909)	Minnesota
Chicago College of Medicine and Surgery	(1908)	Illinois
University of Minnesota, Coll. of Med.	(1906) (1909)	Minnesota
Hamline University	(1906)	Minnesota

* In 1899 this college became the College of Medicine and Surgery, Physio-Medical, Chicago.

† No percentage given.

Book Notices

PRACTICAL BACTERIOLOGY, BLOOD WORK AND ANIMAL PARASITOLOGY. Including Bacteriologic Keys, Zoölogic Tables and Explanatory Clinical Notes. By E. R. Stitt, M.D., Surgeon, U. S. Navy. Second Edition. Cloth. Price, \$1.50 net. Pp. 345, with 91 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

In the second edition of this book the original arrangement has been adhered to, but the matter has been thoroughly revised. Chapters on immunity, anaphylaxis and poisonous snakes have been added, and the matter on the important subject of animal parasites has been rewritten, as has also the section on the bacteriology and parasitology of the body fluids. Other additions are, an outline of methods for the chemical examination of urine and gastric contents, and for the determination of nitrogen elimination. The author has avoided theoretical consideration, and does not hesitate to say plainly what is and what is not important in laboratory diagnosis. This is an advantage, when spoken with the authority of knowledge and experience. The book is well illustrated. Methods and procedures are concisely yet clearly given. The usefulness of the index, however, and consequently of the book as a work of reference, is impaired by the fact that the parasites are indexed solely under the name which the author has adopted, even though that may be less familiar than another name. Thus, *Lambia intestinalis*, *Acanthia lectularia* and *Necator americanus* are indexed under those names alone; one looks in vain for *Cercomonas*, *Cimex* and *Uncinaria*. Unfortunately, moreover, the index is not complete, even as to names used by the author.

THE HYGIENE OF INFANCY AND CHILDHOOD AND THE UNDERLYING FACTORS OF DISEASE. By A. Dingwall Fordyce, M.D., Extra Physician, Royal Hospital for Sick Children, Edinburgh. Cloth. Price, \$2.50 net. Pp. 289. New York: William Wood & Co., 1910.

In this book the author has attempted to "correlate the primary scientific facts of medicine as they apply especially to pediatrics," in order to assist the pediatricist in keeping abreast of the scientific advances associated with his own clinical work. Food, heredity, environment, bacterial infections and the different age periods with their characteristics and susceptibilities to disease and their developmental peculiarities, are discussed.

FEVER-NURSING. Designed for the use of Professional and other Nurses, and especially as a Text-Book for Nurses in Training. By J. C. Wilson, M.D., Author of "A Treatise on the Continued Fevers." Cloth. Price, \$1 net. Pp. 248. Philadelphia: J. B. Lippincott & Co., 1910.

The text of this book, which originally embodied the substance of Dr. Wilson's lectures before the nurses' class at the Philadelphia Hospital, has gone through revisions until this, the fifth edition, contains only the essentials of nursing in fevers according to present ideas. The demand for a new edition gives evidence that it is meeting its purpose.

THE PRESCRIBING OF SPECTACLES. By Archibald Stanley Percival, M.B., Senior Surgeon Northumberland and Durham Eye Infirmary. Cloth. Price, \$2 net. Pp. 159, with 24 illustrations. New York: William Wood & Co., 1910.

The author presents the subject of refraction in a practical manner, enabling one to quickly grasp the essentials in determining the errors of refraction and of ocular muscle balance. The use of the various instruments of precision is well treated, and some space devoted to the various types of lenses. A large part of the book is given to the mathematical problems connected with this subject.

NOTES ON DENTAL METALLURGY. For the Use of Dental Students and Practitioners. By W. Bruce Hepburn, L.D.S. (Glasgow), Lecturer on Dental Metallurgy and Visiting Dental Surgeon in the Glasgow (Incorporated) Dental Hospital and School. Cloth. Price, \$2 net. Pp. 213. New York: William Wood & Co., 1911.

This work is a most complete summary of dental metallurgy. It is written on a short, concise plan, and the subjects can be quickly and easily referred to by the student. Those making a specialty of this line of work should have this book within reach for reference.

STUDIES IN INVALID OCCUPATION. A Manual for Nurses and Attendants. By Susan E. Tracy. Cloth. Price, \$1.50 net. Pp. 175, with illustrations. Boston: Whitcomb & Barrows, 1910.

Although this book is not directly medical, it is of interest to physicians, and to all who have to do with invalids. Practically every sort of work that may be employed to pass the tedious time of persons crippled or otherwise shut-in has been explained and illustrated here.

Medicolegal**Insufficient Evidence of Malpractice and Erroneous Rulings**

The First Appellate Division of the Supreme Court of New York reverses, in *Brown vs. Goffe* (125 N. Y. S. 458), a judgment for malpractice, and orders a new trial. It deems it sufficient to say that the principal operation performed by the defendant involved the removal of certain of the plaintiff's organs which had become diseased. Later in the same day a condition arose which required a second minor operation, mainly for the purpose of drainage, and some time later a second incision was made for the same purpose. Still later, after the plaintiff had sufficiently regained her strength, a fourth operation was performed, consisting of opening one of the incisions already made and securing so far as possible some of the spots found to have been weakened by the infection found on the occasion of the first operation.

The burden of the complaint was that the defendant, while possessing the requisite skill and learning, did not use reasonable care in the exercise of his skill and the application of his knowledge. But there was no evidence in the case from any qualified witness to the effect that any one of the operations performed by the defendant was improper, or was carelessly, negligently, or unskillfully executed. Furthermore, the charge of negligence and carelessness in the aftercare of the patient rested entirely on the evidence of the plaintiff herself, a young woman about 25 years of age who had been employed as a waitress in a restaurant, contradicted in the main not only by the defendant, but also by his assistants and the house surgeons of the hospital. It was insisted throughout the trial and on the appeal that the defendant had compelled the plaintiff to lie for days at a time with unchanged bandages and dressings. This insistence had no better foundation than the plaintiff's inadmissible evidence that one of the hospital staff had told her that the defendant had given orders that the bandages should not be changed. No legal evidence of such an order was given. But counsel quoted a sentence from the defendant's evidence that "I never ordered the bandages removed," but carefully refrained from quoting the very next sentence, that "the bandages were taken off every day after they were soiled." It is well settled that the burden of establishing affirmatively either want of skill or negligence in the care and attention of a patient must be assumed by him.

A very important inquiry in a case like this is whether or not the defendant did that which his best judgment dictated. One of the obligations resting on a surgeon or physician is to use his best judgment in exercising his skill and applying his knowledge, and when his acts are challenged it must necessarily be open to him to show that they accorded with his judgment as to what should have been done. So the defendant was prevented from showing precisely that which it was incumbent on him to show, when this question was excluded: "Now, in performing this operation did it, in your judgment, become necessary to separate the tissues in either way from the sac in which the pus was found?"

The necessities of the case required that the defendant should leave, in a large measure, to the hospital staff the care of the patient after the operations, which it was shown was the usual and proper practice in hospital cases, and it was error not to allow him to answer the perfectly proper question as to what instructions he left with the hospital physicians or nurses as to care of the patient.

Practice of Medicine by "Suggestive Therapeutics"

The Fourth Appellate Division of the Supreme Court of New York in *People vs. Mulford* (125 N. Y. S. 680) affirms a conviction of the defendant of practicing medicine without having a license and being registered as required by Chapter 344 of the Laws of New York of 1907, which declares that "A person practices medicine within the meaning of this act . . . who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition."

It appeared from the evidence, without contradiction, that the defendant had an office, where he received patients, and treated them for physical ailments, and received compensation therefor; that he gave no medicine, and prescribed none; that he performed no surgical operations, and used no surgical instruments; that his entire treatment consisted of the laying on of hands, and manipulation, breathing and rubbing his hands together; and that his treatment was beneficial to his patients. The sign in front of his office indicated that his treatment was known and designated as "suggestive therapeutics." On the evidence he was practicing medicine, the court holds, as defined by the above statute, and was guilty of a misdemeanor thereunder.

The only contention of the defendant was that the statute is a violation of the state and United States constitutions, but it does not seem to the court to require any extended discussion to show that the legislature had the right to enact the provisions of this law, and that it does not violate the provisions of the constitutions.

It was said that the defendant could do no harm, if he did no good, and that he should therefore have been permitted to practice his calling without interference, and that this law, which brought him within the definition of one who practiced medicine, and was therefore prohibited from doing so without a license and being registered, deprived him of a legal right to carry on a proper business, and was a violation of the provisions of the constitutions. But a patient may often suffer as well from a failure to prescribe proper remedies, or afford surgical relief promptly, as from making improper prescriptions, or performing unskilful operations. A physician who holds himself out to treat patients for physical ills should know whether to do anything, and what to do, to relieve his patient; otherwise, he should not be permitted to practice, and impose on the unfortunate sufferers who, like the poor, are always with us, and many of whom need the protection of the state against quacks in and out of the profession of medicine. "I [Justice Williams wrote the opinion] have no sympathy with this class of practitioners, who seek to remain outside of the control of the state, for the welfare of the people."

School Boards May Employ Suitable Persons to Ascertain Physical Condition of Pupils

The Supreme Court of Minnesota holds, in *State ex rel. Stoltenberg vs. Brown*, City Comptroller (128 N. W. R. 294), that a school board may employ a suitable person to ascertain the physical condition of the pupils in attendance on the public schools of the district.

The court says that the education of a child means much more than merely communicating to it the contents of textbooks. But, even if the term were to be so limited, some discretion must be used by the teacher in determining the amount of study each child is capable of. The physical and mental powers of the individual are so interdependent that no system of education, although designed solely to develop mentality, would be complete which ignored bodily health. And this is peculiarly true of children, whose immaturity renders their mental efforts largely dependent on physical condition. It seems that the school authorities and teachers coming directly in contact with the children should have an accurate knowledge of each child's physical condition, for the benefit of the individual child, for the protection of the other children with reference to communicable diseases and conditions, and to permit an intelligent grading of the pupils.

In this case the board of education of Minneapolis, pursuant to a previously adopted resolution recommending the employment of a suitable graduate nurse for one month to make an inspection of the physical condition of the pupils of certain named schools, appointed the relator to make such inspection at a salary of \$60 for the month's services. She performed those services, a warrant for her pay was drawn and signed by the president and secretary of the board, but the city comptroller refused to countersign the warrant. The above considerations and many others not deemed by the court necessary to mention leads it to the conclusion that the comptroller was properly directed by mandamus to countersign the warrant.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

February 25

- 1 A Case of Meningomyelitis with Complete Recovery. W. M. Leszynsky, New York.
- 2 Study of Fats and Lipoids in Animal Tissue. J. Wright, New York.
- 3 Neurofibromatosis. W. B. Trimble, New York.
- 4 *Nature of the Virus of Yellow Fever, Dengue and Pappataci Fever. C. F. Craig, Washington, D. C.
- 5 Relation of the Doctor to the Church. C. E. Nammack, New York.
- 6 Two Cases of Renovesical Tuberculosis Treated with the Bacillus Emulsion. J. Pedersen, New York.
- 7 Chyluria Containing the *Cercomonas Hominis*. C. Rosenheck and G. L. Rohdenburg, New York.

4. Nature of Virus of Yellow Fever, Dengue and Pappataci. —In reviewing the work which has been done on the nature of the virus of yellow fever, dengue and pappataci fever, Craig says that one is impressed with the similarity existing between them, a similarity which points to the close relationship of the causative organism. Clinically, there is considerable resemblance, all three diseases having a sudden onset, running a comparatively rapid course, and terminating by crisis rather than by lysis. In point of severity, pappataci fever is the mildest, yellow fever the most severe, while dengue occupies the position between the two. In all three the cause is present in the blood, but only during certain periods; in yellow fever during the first three days of the disease; in pappataci fever during the first day; and in dengue, so far as is known, during the third and fourth days of the attack. In all, the injection of filtered or unfiltered blood produces the disease. All three of the fevers are transmitted by an insect; in two, yellow fever and dengue, by a mosquito, and in pappataci fever by a biting fly. In yellow fever and pappataci fever the causative agent undergoes a cycle of development within the transmitting insect, while in dengue this point is still undetermined. In yellow fever the mosquito does not become infective until twelve days after it has bitten the infected individual, while in pappataci fever the fly does not become infective for from seven to ten days. In all three diseases the causative agent is ultramicroscopic in size, as it passes through the best filters that can be obtained, and because the most careful examinations of the blood, both microscopically and culturally have failed to show any parasite. In addition, there is conclusive evidence that these diseases are not contagious. The careful consideration of all of these facts impresses Craig with the belief that yellow fever, dengue, and pappataci fever, as well as other diseases due to a filterable virus, are caused by parasites which differ markedly from any with which we are acquainted. The evidence goes to show that they differ from one another in virulence, thus producing the variations in the clinical picture of the three diseases, just as in malarial infection we have different species of plasmodia which produce mild or severe attacks. In many respects these fevers resemble those due to the malarial plasmodia. Like the malarial fevers, they are transmitted by insects, but may be produced by the injection of blood from an infected individual; while there is almost as much difference in the severity of the fever due to the benign tertian plasmodium and the often fatal infection produced by the estivo-autumnal plasmodia, as there is between yellow fever and severe dengue. The discovery of the actual organisms concerned in the production of these fevers is apparently impossible until we can perfect the microscope or discover some method of staining or cultivating them, but Craig believes that, in time, it will be proved that these fevers are due to closely related species belonging to the same genus, and that in all probability they will be found to belong to that great class of organisms which are daily becoming of more vital interest to the physician, the protozoa.

Lancet-Clinic, Cincinnati

February 18

- 8 Acute Lung Tuberculosis: A Contagious Serolymph Disease. "Aerogenous." F. Gaertner, Pittsburg, Pa.
- 9 Conclusive Researches of Medicine. A. R. Peebles, Boulder, Colo.
- 10 The Adjustment of Eyeglasses. F. W. Davis, Cincinnati.
- 11 Examination of Prof. Irving Fisher's Report on National Vitality. L. Irwell, Buffalo, N. Y.

Illinois Medical Journal, Springfield

February

- 12 *Bismuth Paste in Rectal Fistula. E. G. Beck, Chicago.
- 13 A Clinical Service in Our State Hospitals. F. P. Norbury, Kankakee.
- 14 Ligation for Partial Thyroidectomy for Hyperthyroidism. C. H. Mayo, Rochester, Minn.
- 15 *Vital Statistics in Illinois. G. W. Webster, Chicago.
- 16 The Matas Operation for the Cure of Aneurysm. D. A. K. Steele, Chicago.
- 17 Leukocytes in the Diagnosis, Classification and Prognosis of Pulmonary Tuberculosis. J. F. Hultgen, Chicago.
- 18 *Hemolytic Jaundice. W. S. Thayer, Baltimore.
- 19 Report of Work Done at Ottawa Tent Colony, with Suggestions for Improvement. J. W. Pettit, Ottawa.
- 20 The Spread of Venereal Diseases. E. W. Fiegenbaum, Edwardsville.

12. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1584.

15. **Vital Statistics in Illinois.**—The history of the vital statistics movement in this country is discussed fully by Webster. His concluding remarks, based, in the main, on the Illinois situation, although applicable to other states occupying the same position as Illinois in this matter, are, in part, as follows:

It is the duty of the State of Illinois to see to it that at least the three principal events in the life of each of its citizens be made a matter of public record. These three principal events are birth, marriage and death. Illinois has spent \$40,000,000 on a sanitary canal, largely for the purpose of improving the water supply of some of her cities and chiefly for the purpose of diminishing deaths from typhoid. To what extent has the typhoid death-rate of the state as a whole been affected? Nobody knows. Owing to the lack of any adequate system of sanitary bookkeeping, we don't know the actual annual death-rate in the state, from typhoid, or any other disease, either before the canal was opened, or afterward. What would you think of the business sagacity of a corporation that would spend \$40,000,000 on some improvement and then fail to keep a set of books that would enable it to know whether it was a paying investment or not? For several years the Illinois State Board of Health has been engaged in a state-wide antituberculosis crusade. And with what result? Nobody knows. We do not know the exact death-rate from this disease and consequently are not in a position to estimate correctly the value of any or of all the methods instituted for its suppression. The Illinois State Geologic Survey and the Illinois State Water Survey have done splendid service in showing the need of a better water-supply and how to obtain it. What effect has it had on the typhoid or other mortality? Nobody knows. In Illinois, the birth or the death of a blooded horse or a Jersey bull is at once recorded in a herd-book, but the people of southern Illinois, through the voice of their chosen representatives, have gone on record as saying that it is too much trouble to obtain legal permission to bury their dead or to make a legal record of the event and, consequently, in this state, outside of cities having ordinances with a compulsory burial-permit feature, a human being may be placed underground without the slightest legal note or record. What a disgrace to our state that we should be found holding open the door for graveyard insurance. When a human being can pass, or be sent, from this world to the next, without a single formality, inquiry into or record of the cause of the death, and the body buried like a dog, it is time we enacted and enforced a suitable law, if for no other reason than as a deterrent of crime. Good laws are the expression of an enlightened public sentiment enacted for the protection of society as a whole, and not for any class, and another failure to enact a satisfactory birth and death law in Illinois will be greatly to the discredit of the intelligence and public spirit of the people of the state. For sanitary, legal, social, economic reasons, Illinois should prepare and enact, and then enforce, such a birth and death law as will enable her to take her proper place among, not only foreign countries, but her immediate neighbors in the Registration Area of the United States, to the end that sanitary science can be advanced, preventive medicine be improved, the legal rights of every citizen be better protected, a proper foundation be laid for the working out of many social problems of vital importance, the health of every citizen be better protected and life prolonged.

18. **Hemolytic Jaundice.**—Thayer shows that the studies of the last several years have brought out a fairly definite clinical syndrome, that of acholuric jaundice associated with splenomegaly and fragility of the red blood-corpuscles. In its purest form, this group of symptoms is manifested in a sharply defined disease picture, congenital, often familial, splenomegalic jaundice. It is probable that many of Gilbert's cases of chronic simple jaundice with splenomegaly as well as of Hayem's infectious splenomegalic jaundice are examples of the disease. A similar condition is, however, not infrequently encountered in adult life. In these so-called acquired cases the symptoms are, as a rule, considerably more acute and severe than in the congenital malady. The syndrome has, moreover, been found in a variety of other instances of non-obstructive jaundice associated with various infections or poisons. What the essential primary element in these cases may be, is not at present clear. Most important is the recognition of those apparently idiopathic examples of acquired hemolytic jaundice simulating pernicious anemia, cholelithiasis, the so-called splenic anemias or indeed, icterus gravis; most important because of the fact that the recognition and persistent treatment of some of these patients with iron may bring a great improvement, and perhaps permanent recovery. The recognition of this syndrome has opened again, and in an interesting manner, the question as to the possibility of a purely hematogenous jaundice. The methods of studying the corpuscular resistance necessary for the diagnosis of such cases are, of course, too delicate for use by the busy practitioner, but they may be carried out easily in any well-equipped laboratory. In the severe acquired forms, rest in bed and the other adjuvants suitable for the treatment of any grave anemia should be adopted. In congenital hemolytic jaundice recovery is unknown, but a temporary improvement in the anemia may be obtained by persistent treatment with iron. In acquired hemolytic jaundice long continued treatment may result in apparent, perhaps, indeed, in complete recovery. This is a very important fact when one reflects on the futility of treatment with iron in Addisonian anemia, a malady which may so closely resemble this syndrome.

Ohio State Medical Journal, Columbus

February

- 21 *Two Cases of Heart Block. L. C. Grosh, Toledo.
- 22 Natural History of Appendicitis. J. C. Oliver, Cincinnati.
- 23 Thyroid in Infancy. A. J. Bell, Cincinnati.
- 24 Possible Abuse of the Eustachian Catheter. J. B. Alcorn, Columbus.
- 25 Radical Treatment of Abortion. G. W. Kosmak, New York.
- 26 The Role of Functional Conditions in Psychiatry. J. C. George, Dayton.
- 27 Alimentary Toxicoses and Intoxication. J. J. Thomas, Cleveland.

21. Abstracted in THE JOURNAL, July 16, 1910, p. 244.

Journal of Experimental Medicine, New York

February

- 28 *Cardiac Hypertrophy. H. A. Stewart, New York.
- 29 Mercury Bichlorid and Serodiagnosis of Syphilis. H. Noguchi and J. Bronfenbrenner, New York.
- 30 Barium Sulphate Absorption and Serodiagnosis of Syphilis. H. Noguchi and J. Bronfenbrenner, New York.
- 31 Effects of Mechanical Agitation and of Temperature on Complement. H. Noguchi and J. Bronfenbrenner, New York.
- 32 Morphologic Changes in a Mouse Carcinoma in the Course of Long-Continued Transplantation. R. Kilduffe, Philadelphia.
- 33 Relations of Embryonic Tissue and Tumor in Mixed Grafts. P. Rous, New York.
- 34 *Effect of Pregnancy on Implanted Embryonic Tissue. P. Rous, New York.
- 35 Influence of Mouse-Rat Parabiosis on the Growth of Rats of a Transplantable Mouse Sarcoma. R. A. Lambert, New York.
- 36 *The Estivo-Autumnal Parasite: Its Sexual Cycle in the Circulating Blood of Man. M. Rowley-Lawson, New York.
- 37 *Malarial Pigment (So-Called Melanin): Its Nature and Mode of Production. W. H. Brown, Madison, Wis.

28. **Cardiac Hypertrophy.**—Stewart deals with first, the development of the reactive processes known as hypertrophy, in point of view of time after the establishment of a condition favorable to its onset; second, the question of co-hypertrophy; and third, the relation which the altered muscle bears to the normal. He found that hypertrophy induced by the production of aortic insufficiency involves all the chambers of the heart. The greatest absolute increase in weight is in the left ventricle. The remaining segments, arranged in the order of

decreasing increments are septum, right ventricle and auricles. The greatest relative increase is also in the left ventricle, but the auricles show a relative hypertrophy greater than that of the septum or right ventricle. The co-hypertrophy of the auricle is not due to an altered venous pressure, but results from an increased force of auricular systole. The heart shows an increase in weight within one week after the production of aortic insufficiency. The increase in weight is due only in part to an increased water content.

34. Effect of Pregnancy on Implanted Embryonic Tissue.—Rous found that grafts of embryonic tissue, obtained at operation and implanted in the mother, will grow well in case she no longer carries young. The growth is no more rapid than that in favorable non-pregnant aliens, but persists for a longer period without retrogression and results in a greater variety of tissues. The superiority of auto-transplantation over iso-transplantation is responsible for this fact. No evidence of a specific "growth-substance" peculiar to the pregnant state is furnished by the experiment. When a mouse is implanted with embryonic tissue from its own uterus, and still carries developing young, the fate of the grafts is very different from that just described. They are vascularized from the host but fail to grow or differentiate. Yet they do not die, and after pregnancy is concluded they may start to grow. The finding is strikingly like that of others of implanted tumor in pregnant hosts. It seems probable that some general factor affecting the growth of implanted tissues is here concerned.

36. The Estivo-Autumnal Parasite.—The description of two distinct types of estivo-autumnal crescentic parasites given by Craig, Rowley-Lawson has been unable to confirm. She says that the crescentic parasite is throughout the entire existence extracellular (i. e., not without the substance of the red corpuscle, but attached to its surface). It develops from the familiar small ring-form parasite, retaining a circular contour until fully matured. The very young ring-form parasite has no capsule; the macrogamete has one during its development and sexual activity; while the microgametocyte has it only during its development. The sexual cycle of the crescent may occur in the circulating blood of its human host. The cycle is probably very rapid, for practically the whole cycle can be seen in a few smears taken from one puncture. This microgametocyte, or male, develops a flagellum (microgamete) which, after the parasite has assumed the crescentic phase, leaves the body of the parasite and enters the body of the macrogamete, or female, during its existence as a round body. Fertilization is then accomplished. The microgametocyte, after the escape of the flagellum, shows evidence of degeneration and is probably cadaveric. After fertilization, the macrogamete assumes the crescentic form, reaches the reproductive phase and undergoes sporulation, the product of which appears to be the small ring-form parasite. Renewed infection of the red cells then takes place.

That the sexual cycle is not seen oftener in the circulating blood of man, Rowley-Lawson believes, may be due to one or more of the following reasons: (a) The process of reproduction may be and probably is very rapid (some forms of protozoa are exceeded in rapidity or reproduction only by bacteria). (b) The cycle may usually take place in some of the internal organs. (c) It may be that the sexual cycle occurs in the peripheral blood only at intervals, when it becomes necessary for the parasite to renew its exhausted vitality. (d) The occasional occurrence of the sexual cycle in the circulating blood may be due to some slight chemical change in the composition of the host's blood-serum. She finds no good evidence of conjugation-forms in estivo-autumnal malaria. She found some of the young ring-form parasites in close approximation or overlying each other. As the sexual cycle does not take place in the blood of man, such a process of conjugation would seem unnecessary, unless it occurred as an atypical process. The fact that the crescent is more resistant to quinin than the other varieties of malarial parasites might be explained by the presence of a capsule which appears to protect the parasite, certainly during the sexual

phase and probably during the "resting" period (when not undergoing sexual changes). The youngest form of ring parasite shows no evidence of encapsulation. This may explain the fact that quinin is best administered just before the paroxysm when the parasite is undergoing segmentation.

37. Malarial Pigment.—Two important methods for the study of malarial pigment are described by Brown: (a) a method for obtaining a solution of malarial pigment from fixed tissues without the removal of a trace of hemoglobin from the red blood-corpuscles; (b) a method for obtaining an iron reaction in malarial pigment. By comparing the bleach reactions and solubility of melanins and malarial pigment, the dissimilarity of the two classes of pigments has been demonstrated. The spectroscopic examination of a solution of malarial pigment proves conclusively that the pigment is hematin. It is suggested that the action of a proteolytic enzyme of the malarial parasite on the hemoglobin of the red corpuscle is the most probable mode of elaboration of malarial pigment. The difficulty with which the human organism disposes of malarial pigment indicates that the production of hematin cannot be considered as a normal intermediate process in the formation of bile pigments from hemoglobin.

Journal of the Oklahoma State Medical Association, Muskogee
February

- 38 Some Disorders of Sleep. A. D. Young, Oklahoma City.
- 39 Difficult Surgical Cases. V. Berry, Okmulgee.
- 40 Thrush. W. L. Davis, Kingston.
- 41 Nephrectomy for Infected Cystic Kidney; Recovery. J. H. White, Muskogee.
- 42 Diagnostic Relationship Between Internal Medicine and Special Surgery. J. Block, Kansas City, Mo.
- 43 Salvarsan in Syphilis. E. S. Laim, Oklahoma City.
- 44 Ergotin. H. H. Redfield, Chicago.
- 45 Sterilization of the Unfit. S. M. Jenkins, Enid.

Annals of Surgery, Philadelphia

February

- 46 *Anesthesia by the Intratracheal Insufflation of Air and Ether. C. A. Elsberg, New York.
- 47 *Intussusception, with Special Reference to Adults. E. Eliot, Jr., and J. A. Corseaden, New York.
- 48 *Diverticula of the Lower Bowel: Their Development and Relationship to Carcinoma. L. B. Wilson, Rochester, Minn.
- 49 *The Coincidence of Volvulus and Real or Simulated Strangulated Hernia. R. T. Miller, Jr., Pittsburg, Pa.
- 50 *Restoration of Fecal Continence After Iliac Colostomy. A. Marro, Turin, Italy.

46. Intratracheal Insufflation of Air and Ether.—This paper is devoted to the subject of anesthesia itself, with special reference to the technique of the method. The apparatus used for intratracheal insufflation is described. Elsberg has so far anesthetized about thirty patients by intratracheal insufflation. Some of them were operated on for intrathoracic disease, many for abdominal or other affections. He has found the anesthesia very useful in operations on the head and neck, as the anesthetist was never in the operative field or in the way of the operator or his assistants.

47. Abstracted in THE JOURNAL, Jan. 28, 1911, p. 298. Appended to this paper are the abstracts of 264 cases recorded in the literature.

48. Diverticula of the Lower Bowel.—Fifteen cases of diverticula of the lower bowel were studied by Wilson up to Dec. 1, 1910. Three of these were cases of peridiverticulitis. In these the inflammation did not involve the mucosa. Its presence in the peridiverticular fat was apparently due to leakage through the thin-walled diverticulata—a condition similar to that seen in old umbilical hernias. The symptoms were those of peritonitis or obstruction from pressure. In four cases carcinomata had developed in the diverticula, probably from epithelium segregated by chronic inflammation.

49. Volvulus and Strangulated Hernia.—Miller presents two cases, with abstracts of the cases reported since Knagg's paper in 1900. Volvulus, he says, may produce in a hernia signs and symptoms which accurately simulate hernial strangulation; or it may be associated with actual strangulated hernia. Volvulus, in either association, may readily escape recognition; it is probably contributing heavily to the mortality of strangulated hernia. The diagnosis before operation is usually exceedingly difficult; there are, however, certain very suggestive features, viz., advanced age, the presence of hernia for

many years, shock out of proportion to the signs about the rupture, and marked abdominal pain and tenderness with occasionally a palpable mass. The diagnosis at operation depends on careful observation, there being certain signs which are pathognomonic; an operation undertaken for strangulated hernia must demonstrate absolutely the strangulation. Volvulus proximal to actual strangulated hernia apparently offers no sure means of diagnosis other than routine abdominal exploration—a procedure which is manifestly not to be recommended.

50. Fecal Continence After Colostomy.—The fundamental idea of the method Marro applies consists in causing the proximal end of the resected intestine, properly mobilized, to cross a subcutaneous tunnel, which is parallel to the exterior border of the rectus muscle, in such a way that a simple belt (that of the drawers, for instance), going round the trunk and passing over the iliac wings, should play the part of an effectual and comfortable band of compression on the intestinal segment running between skin and aponeurosis. Such a compression may be rendered more active by a contraction of the abdominal wall, in the moments in which the individual feels the need of it, e. g., in diarrheic attacks and during active peristalsis of the colon. Theoretically, its function would thus imitate well enough the natural function of the sphincters. Three cases are reported in which the method proved quite successful.

University of Pennsylvania Medical Bulletin, Philadelphia

January

- 51 The Public Health Course at the University of Pennsylvania. A. C. Abbott, Philadelphia.
- 52 Therapeutic Results from the Use of Salvarsan in Twenty-One Cases of Syphilis. J. F. Schamberg and N. Ginsburg, Philadelphia.
- 53 Studies in Spirochetal Infections. D. H. Bergey, Philadelphia.

Journal of Abnormal Psychology, Boston

February-March

- 54 *Hysteria and Modern Psychoanalysis. A. Friedländer, Frankfurt, Germany.
- 55 *Fundamental States in Psychoneurosis. B. Sidis, Boston.
- 56 *The Mechanism and Interpretation of Dreams. E. Jones, Toronto.
- 57 *Id. M. Prince, Boston.
- 58 Raymond—His Life and Example, 1844-1910. W. B. Swift, Boston.

54. Hysteria and Modern Psychoanalysis.—According to Friedländer, we do not possess a therapy applicable in all cases of hysteria. The cathartic method of Breuer and Freud, from the theoretical standpoint, has been very fruitful for the psychology of hysteria; it is of practical value in certain cases of traumatic hysteria. The association studies of Jung and others deserve critical consideration. The psychoanalytic method, he says, is surely not the only one that is of value in the treatment of hysteria, neurasthenia or obsessions. In so far as the method is connected with the detailed discussion of sexual matters and perversities, it is justly rejected by many authors. Psychical treatment, as it is practiced by those who do not belong to Freud's school, accomplishes as much as sexual psychoanalysis, but it must be aided according to the particular case by general therapeutic measures applicable to functional neuroses and psychoses. (Training in work, hydrotherapy and electrotherapy, dietetics, etc., and, under certain conditions, hypnosis.) The procedure of those authors who carry on a propaganda in lay journals about this method of treatment, which at best is not proved, and which is rejected by many, Friedländer holds deserves emphatic disapproval.

55. Fundamental States in Psychoneurosis.—Sidis says that in all his phobia cases, he found as the basis of the morbid condition the primitive instinctive fear of the unknown, of the unfamiliar, a fundamental fear instinct rooted in the impulse of self-preservation, and an overdeveloped sense of the mysterious. The recognition of these fundamental states by the psychopathologist and their disintegration by treatment are of the utmost importance for psychopathology and psychotherapeutics. The fear of the mysterious is the beginning of phobia.

56 and 57. The Mechanism and Interpretation of Dreams.—Jones holds that up to the present no one who has taken the

trouble to acquire the psychoanalytic method has failed to confirm Freud's theory in all essential particulars. Prince, on the other hand, holds that no one who has shown by his writings that he is thoroughly trained in and conversant from first-hand knowledge with all the phenomena of abnormal, experimental and functional psychology has accepted Freud's theory.

Ophthalmic Record, Chicago

February

- 59 A Fatal Case of Dementia Following Cataract Extraction. E. Hill, Philadelphia.
- 60 A Case of Anisometropia. R. P. O'Connor, U. S. Army.
- 61 Contusion of the Eyeball. E. E. Blaauw, Buffalo, N. Y.
- 62 Soft Fibroma of the Conjunctiva. J. S. Wyler, Cincinnati.
- 63 Use of Diagnostic Doses of Old Tuberculin in Determining the Etiology of Optic Neuritis and Neuroretinitis of Obscure Origin. W. E. Gamble, Chicago.
- 64 *An Unusual Case of Foreign Body in the Eye. R. S. Lamb, Washington, D. C.

64. Foreign Body in Upper Eyelid.—The patient in this case was suffering from a condition of the left eye which to all appearances was a trachoma with pannus, or possibly a kerato-iritis with vascularization of the cornea of such long standing as to have caused the beefy-looking inflammation of the upper lid. He gave a history of having got a piece of hair in the eye and of having it removed at one of the hospitals, since when the eye had been better and worse, but always somewhat inflamed. After bleaching with cocain and adrenalin as much as possible, a thorough search failed to discover any sign of any foreign substance, and Lamb concluded it was a case of syphilis, even though the patient denied the knowledge of having been infected. He treated him accordingly internally with Donovan's solution, external mercury rubs and locally with yellow oxid and atropin sulphate 1 per cent., having him use smoked glasses. In the course of a few days the man was better, but complained now of a more marked scratching sensation, whereupon Lamb took cocain and adrenalin, bleached as best he could, and searched carefully and long, finally locating in one of the fleshy masses of the upper lid, near its center at the upper border of the cartilage, a small black point. The surrounding flesh was removed and a wiry hair $\frac{1}{4}$ inch long was pulled out. It had been imbedded in the lid at right angles to its surface, and so whenever the granulating flesh grew smaller the hair presented itself and began again the process of scratching the cornea.

Yale Medical Journal, New Haven, Conn.

January

- 65 *A Rare Type of Unilateral Hematogenous Infection of the Kidney. G. E. Brewer, New York.
- 66 Duties of the State in the Prevention of Tuberculosis. H. F. Stoll, Hartford, Conn.
- 67 A Case of Dystrophia Adipose Genitalis or Hyposecretion of the Pituitary Gland. F. E. Johnson, Providence, R. I.
- 68 Treatment of Pulmonary Tuberculosis Outside of the Sanatorium. D. B. Deming, Waterbury, Conn.
- 69 Some Features of Rectal Alimentation. L. M. Gompertz, New Haven, Conn.
- 70 *Chronic Family Jaundice. W. Tileston, New Haven, Conn., and W. A. Griffin, Sharon, Mass.

65. Unilateral Hematogenous Infection of the Kidney.—Brewer has encountered fourteen cases of this severe type of unilateral infection. Of these, two patients were untreated; both died within twelve days. Four patients were treated by nephrotomy and drainage; all died shortly after operation. Eight were treated by early nephrectomy; all recovered. He also reports a number of cases of some of the milder types of the affection in which measures less radical than nephrectomy are indicated. These cases, like the preceding group, often simulate in their symptomatology, appendicitis, cholecystitis, or abscesses of the liver. If unrecognized and unrelieved by appropriate treatment, they go on to the formation of the more definite and more easily recognized lesions, as renal abscess, perinephritic abscess, pyelonephritis, or pyonephrosis. The lesions in these cases, while the same in general character as in the severe type, are fewer and more scattered, and the amount of renal tissue involved is less. Stripping the capsule from the organ when the lesions are small, or combined with the openings and drainage of cortical abscesses or areas of necrosis when present, constitutes the best treatment. In certain instances, when the treatment has been delayed too long, the suppurative process continues and

a secondary nephrectomy may be necessary. Brewer has operated in about twelve cases of this type, and while there was no postoperative death in the series, on one occasion he was obliged to perform a secondary nephrectomy for advancing sepsis; in another patient in whom the function never returned, he performed nephrectomy for persistent renal neuralgia; and in at least one other case a persistent pyelonephritis has resulted. The end-results in most instances, however, have been satisfactory.

There is still a milder type of the disease, the so-called idiopathic pyelitis, which, as a rule, requires no treatment other than rest, hexamethylenamin, and the ingestion of a large amount of pure water. The symptoms are mild in character, and when on the right side are often mistaken for a subacute appendicitis or cholecystitis. The disease may or may not be ushered in by a chill. When present, the chill generally indicates a severe type of infection. The initial rise of temperature is high, generally 104 F. (40 C.), or 105 F. (40.5 C.); pulse is frequently 120, or above. The toxemia is marked from the first and, with the high fever, suggests often an acute grippe, lobar pneumonia, or one of the exanthemata. Then follows a more or less vague pain in the abdomen, or flank, corresponding to the side of the lesion. Tenderness and muscular rigidity over the region of the appendix, or gall-bladder, leads often to error in believing one of these organs to be the seat of the disease. As the urinary secretion from the infected kidney is greatly diminished, and is largely diluted by the abundant secretion from the unaffected organ, the mixed urine, when passed or drawn from the bladder, is often quite normal in appearance, and the slight trace of albumin, blood and pus, is often overlooked unless a more than ordinary careful examination is made. The one pathognomonic sign present in all cases is a marked unilateral costovertebral tenderness.

70. This article was also published in the *American Journal of the Medical Sciences*, June, 1910.

Iowa Medical Journal, Des Moines

February

- 71 Indication for Removal of Tonsils. R. M. Lapsley, Keokuk.
- 72 Function of the Vestibular Apparatus. E. R. Lewis, Dubuque.
- 73 Relation of the Faucial Tonsils to General Infection. G. F. Harkness, Davenport.
- 74 Fractures. J. W. Osborn, Des Moines.
- 75 Salvarsan in Syphilis. R. A. Weston, Des Moines.
- 76 Case of Syphilis Treated with Salvarsan. J. J. Murphy and W. J. Neuzil, Cedar Rapids.

Kentucky Medical Journal, Bowling Green

February 15

- 77 Occupational Diseases. C. Weidner, Louisville.
- 78 The Surgical Patient. M. Casper, Louisville.
- 79 Points in Diagnosis as Revealed by the Roentgen-Ray. E. T. Bruce, Louisville.
- 80 *A Case of Heroin Poisoning. J. T. Trawick, Louisville.
- 81 Postoperative Hernia and Intestinal Resection. Intraligamentary Myoma. W. H. Wathen, Louisville.
- 82 Endothelioma of the Ovary with Involvement of the Ileocecal Junction. W. H. Wathen, Louisville.
- 83 A Case of Head Injury. Osteoma of the Uterus. J. H. Peak, Louisville.
- 84 A Case of Puerperal Eclampsia. J. Hancock, Louisville.

80. **Heroin Poisoning.**—Trawick reports a case of severe poisoning following the injection of $\frac{1}{2}$ grain of heroin, a short time after an operation for chronic appendicitis. The symptoms appeared within ten minutes. The patient had the appearance of a person profoundly under the influence of an opiate. After about an hour of medical and mechanical stimulation and manipulation, the respiration count was about ten to the minute, but during that hour it had been very irregular, going from four to eight a minute, and back to four. The pupils were contracted to pinpoints during this time. The patient recovered.

Chicago Medical Recorder

February

- 85 *Painful Affections of the Feet. J. L. Porter, Chicago.
- 86 *Local Paresis of the Bladder. G. Kolischer and H. Kraus, Chicago.
- 87 *When and How to Treat Varicocele in the Male Operatively. A. P. Heineck, Chicago.

85. Also published in *Surgery, Gynecology and Obstetrics*, January, 1911, abstracted in *THE JOURNAL*, Feb. 4, 1911, p. 379.

86. Abstracted in *THE JOURNAL*, Feb. 18, 1911, p. 536.

87. This article has also appeared in the *Illinois Medical Journal*, November, 1910; *Toledo Medical and Surgical Reporter*, December, 1910; *Texas Courier-Record of Medicine*, December, 1910; *Nashville Journal of Medicine and Surgery*, December, 1910; *Medical Summary*, January, 1911; *Pacific Medical Journal*, January, 1911; *Denver Medical Times and Utah Medical Journal*, February, 1911; and the *Medical Fortnightly*, Jan. 25, 1911.

Annals of Otology, Rhinology and Laryngology, St. Louis December

- 88 The Maxillary Sinus in the Embryo, Child and Adult Man. J. P. Schaeffer, Ithaca, N. Y.
- 89 Effect of Maxillary Readjustment on the Development of Nasal Chambers and Face. G. V. I. Brown, Milwaukee, Wis.
- 90 Widening the Dental Arches in Nasal Stenosis; Its Results and Possibilities. N. M. Black, Milwaukee, Wis.
- 91 Comparative Anatomy of the Larynx in the Anthropeidea. J. G. Wilson, Chicago.
- 92 Physiology of Tone Perception. G. E. Shambaugh, Chicago.
- 93 Present Status of Labyrinthine Surgery. S. J. Kopetzky, New York.
- 94 Capsulated Bacteria in Production of Acute Middle-Ear Affections. H. B. Graham, San Francisco.
- 95 Anatomic Explanation of Vestibular Nystagmus. L. K. Guggenheim, St. Louis.
- 96 *Investigation of Postoperative Conditions from Five to Ten Years After Intubation. B. R. Shurly, Detroit.
- 97 A Case of Purulent Pachymeningitis with Extradural Abscess, Subdural Abscess and Septic Thrombosis of the Lateral Sinus, Complicating Chronic Suppurative Middle-Ear Disease. J. J. Carroll, Baltimore.
- 98 Annual Report of the Sanatoria for Tuberculosis in the United States of America and in Canada. J. W. Gleitsmann, New York.
- 99 A Case of Brain Abscess with Rare Ocular Symptoms. C. Barek, St. Louis.

96. **Postoperative Conditions After Intubation.**—Of a carefully recorded series of 437 intubations for laryngeal diphtheria, in 80 per cent. of which the patients were alive when the tube was removed, Shurly has been able to locate and examine thirty of the older children. All these patients had clinical laryngeal diphtheria. The age varied at operation from seventeen months, the youngest, to eleven years, the oldest. The smallest dose of antitoxin given was 1,000 units; the largest 4,000 units. The time during which the tube was worn consecutively was from forty-eight hours to one hundred and twenty-four hours. No instance of retained tube occurred in any of these cases. Four patients required reintubation. In one case intubation had been attempted by two other operators during some hours, without success. Other cases of diphtheria appeared in the same family or in the neighborhood, from which the contagion could be traced in five of these cases. The subsequent statements show the extent of susceptibility of infectious or contagious diseases in these cases, as follows: Measles, ten cases; chicken-pox, four cases; mumps, four cases; whooping-cough, two cases; scarlet fever, three cases. Partial or complete aphonia remained for from one day to seven years after the removal of the tube. "Throat disease" was claimed in ten cases. Four patients were partial, periodic or complete mouth-breathers. Other adenoid symptoms were present in six cases. Lung or heart disease was noted in six cases. Affections of the ears were acknowledged by four. A greater susceptibility to eoryza was observed in seven cases. Dyspnea, asthma or hay fever was present in two cases (from adenoids).

The examination was made five years after intubation in one case, and from eight to twelve years in the other cases. Nasal conditions requiring operations were: Deflected septum, four; intumescent and hypertrophied turbinates, two. In eight nasopharyngeal conditions required operation (tonsils). No laryngeal conditions required operation. Enlarged cervical glands were found in nine cases. Thickening of the interarytenoid fold was observed in four cases. Every patient in this series was intubated for laryngeal diphtheria. Shurly concludes that intubation in laryngeal diphtheria is required more frequently when marked tonsillar hypertrophy exists, and that pathologic adenoids and tonsils are prominent predisposing factors in diphtheritic infections of the larynx. No deleterious effects of antitoxin were noted. Laryngeal paralysis is extremely rare after intubation, he states. Scar tissue was observed in two cases. The cicatrix was insignificant and apparently produced no modification in function. No case of laryngeal paralysis was found, although one with motor insufficiency was observed. Children developing laryn-

geal diphtheria show, Shurly says, a marked tendency to other infections in childhood. So-called chronic catarrhal inflammation of the upper respiratory tract is usual after severe diphtheria.

Medical Fortnightly, St. Louis

January 25

- 100 *When and How to Treat Varicocele in the Male Operatively. A. P. Heineck, Chicago.
- 101 *Abdominal Position for Drainage in Suprapubic Prostatectomy. H. J. Scherck, St. Louis.
- 102 The Medical Profession Must Change Its Tactics. W. J. Robinson, New York.

February 10

- 103 The Need of an Adequate Alphabet. A. L. Beuediet, Buffalo, N. Y.

100. This article has also appeared elsewhere. See No. 87.

101. Abstracted in THE JOURNAL, Feb. 18, 1911, p. 535.

Therapeutic Gazette, Detroit

February

- 104 Value of Taka-Diastase in Diabetes Mellitus. E. J. G. Beardsley, London.
- 105 *Relative Value of the Various Methods for the Determination of Kidney Sufficiency. B. A. Thomas, Philadelphia.
- 106 Teaching of Therapeutics. H. C. Wood, Philadelphia.
- 107 Case of Vincent's Pseudomembranous Angina. W. E. Shea, Missoula, Mont.
- 108 *Surgical Anesthesia and Blood-Pressure. G. F. Lull and C. H. Turner, Philadelphia.

105. Abstracted in THE JOURNAL, Nov. 19, 1910, p. 1838.

108. **Surgical Anesthesia and Blood-Pressure.**—The authors made a study of the blood-pressure and its relations to the pulse rate during administration of various anesthetics, hoping to determine by instruments of precision the onset of untoward symptoms. In all cases, the pressure was taken the day previous to operation, one hour before operation, at the starting of the anesthetic, every five minutes during the operation, one hour after the operation, and the day following; the pulse rate being recorded each time the pressure was taken. In some cases the Stanton instrument, in others the Tycos, was used. They learned that when ether is used the blood-pressure rises at first in nearly every case. When the ether was preceded by ethyl chlorid the pressure remained unchanged during the few moments of ethyl chlorid administration, but when the ether was started, the pressure rose as in the cases in which ether alone was employed. When the skin incision was made it was found that there was a fall in the blood-pressure, which was more marked if the patient was but lightly anesthetized; this fact was also noted in operations in which the peritoneum was incised. One point already well known was once again confirmed, namely, that if the ether was pushed to the point of very deep anesthesia during the operation the blood-pressure fell in proportion to the degree of ether saturation. They conclude that artificial anesthesia causes in many cases a marked alteration in the ratio between the blood-pressure and the pulse rate; this is augmented by anything that produces shock to the nervous system during the operation, notably incision of the skin or peritoneum or drawing on the pedicle of an organ. If at the time of this shock anesthesia be light, the shock will not be so marked as if the patient were under deep anesthesia. In certain operative cases in which the patients show abnormal blood-pressure, on the one hand whether it be high or low, or on the other hand present evidences of cardiac fatigue or actual myocardial weakness, a suitable course of treatment would likely be to diminish chances of circulatory complications both during and after operation to a considerable degree.

Denver Medical Times and Utah Medical Journal, Denver

February

- 109 *Varicocele of the Spermatic Cord. (a) When to Operate? (b) How to Operate? A. P. Heineck, Chicago.
 - 110 Penetrating Wounds of the Eyeball. L. W. Snow, Salt Lake City, Utah.
109. See No. 87.

Canadian Medical Association Journal, Toronto

February

- 111 Surgical Treatment of Gastric and Duodenal Hemorrhage. G. E. Armstrong, Montreal.
- 112 Exophthalmic Goiter. A. McPhedran, Toronto.
- 113 *Death and Disability Resulting from Childbirth. H. M. Little, Montreal.

- 114 Two Cases of Typhoid Spine. J. Halpenny and D. F. McIntyre, Winnipeg.
- 115 Origin of Urinary Calculus. G. S. Gordon, Vancouver, B. C.
- 116 Sarcoma of the Lung. E. S. Jacques, Montreal.

113. **Death and Disability.**—From the opening of the new Montreal Maternity, Oct. 17, 1905, to Oct. 1, 1909, there were treated at that institution 2,634 patients. Of these thirty-five died. It is admitted that this 1.33 per cent. unexpurgated mortality is unusually high, but no patient seriously ill was refused admission, even postpartum, and during the entire four years no patient whose death seemed imminent was allowed to be removed from the hospital. The causes of death were one or other of the forms of toxemia, 40 per cent.; infection, 37 per cent.; and all other causes, including placenta prævia, 23 per cent. Of thirteen patients dying as the result of infection, seven came to the hospital after treatment outside; four had been delivered; two partially delivered; and in one, a placenta prævia; had been repeatedly examined. Another patient with a streptococcus sore throat died of peritonitis within a few hours of delivery, and the child likewise died of streptococcus septicemia. One case of Cesarean section terminated fatally after operation, as did also one case in which pubiotomy was done. For the three remaining cases there is no excuse offered by Little. Two of the patients were delivered spontaneously and one by a low forceps operation, all within two weeks of one another. He says that while laceration of the cervix and of the perineum may account for a certain number of the conditions noted, one further feature in the general management of cases postpartum seems to be accountable for much later distress. This is the custom of tightly bandaging the patient after delivery, and leaving her in such a condition that she is comfortable only when lying flat upon the back. This procedure has, he believes, three distinct disadvantages. In the first place, it absolutely opposes any involution of the round ligaments, which would tend to draw the uterus forward; it prevents the falling forward of the uterus on the bladder, with the consequent tendency to spontaneous micturition; and, finally, tends permanently to hold the uterus back, so that the anterior lip of the cervix is drawn forcibly from the more or less fixed posterior lip, and laceration, if present, is prevented from healing by the formation of scar tissue in the angle of the wound. Not only does this permanent opening of the cervix cause discomfort later, but it is usually associated with a permanent displacement of the uterus. Opposed to these three marked disadvantages of the binder, there is, in Little's opinion, no definite advantage to be claimed for its use.

Texas State Journal of Medicine, Fort Worth

February

- 117 Modern Civilization's Greatest Blot—Our Care of the Insane. J. M. O'Farrell, Richmond.
- 118 Reasons Why the Care and Treatment of Mental Diseases in Texas State Hospitals Are Not Ideal. J. R. Nichols, San Antonio.
- 119 Prophylactic Suggestions in Degenerative Tendencies. G. H. Moody, San Antonio.
- 120 Pneumonia: Its Symptomatology and Diagnosis. G. B. Foster, Waco.
- 121 The Adenoid Operation. H. C. Haden, Galveston.
- 122 Treatment of Syphilis with Salvarsan. M. W. Colgin, Waco.

Journal of Ophthalmology and Oto-Laryngology, Chicago

February

- 123 *Recent Contributions to Our Knowledge Concerning Sympathetic Ophthalmia. E. V. L. Brown, Chicago.
- 124 Use of Scarlet Red in Corneal Diseases. W. O. Nance, Chicago.
- 125 Acute Purulent Frontal Sinusitis. C. M. Miller, Richmond, Va.
- 126 Objective Aural Tinnitus Associated with Hyperthyroidism. D. Yates, New York.

123. Abstracted in THE JOURNAL, June 4, 1910, p. 1893.

St. Louis Medical Review

January

- 127 Physiology and Hygiene of Puberty. H. Ehrenfest, St. Louis.
- 128 Pelvic Diseases Associated with Puberty. E. Marx, St. Louis.
- 129 Relation of Puberty to Nervous Diseases. M. W. Hoge, St. Louis.
- 130 Cutaneous Accidents of Puberty. J. Grindon, St. Louis.
- 131 Other Diseases Associated with Puberty. I. Gray, St. Louis.
- 132 Conditions Producing the Nervous Child. S. R. Roberts, Atlanta, Ga.
- 133 Salvarsan in Syphilis. J. L. Bohm, St. Louis.
- 134 Leprosy. J. Knott, Dublin.

Journal of the Delaware State Medical Association, Wilmington

February

- 135 Pulmonary Tuberculosis. W. C. Pierce, Wilmington.
136 Value of Laboratory Findings in Diagnosis and Prognosis of Abdominal Surgical Diseases. B. W. Goldsborough, Cambridge.

Journal Minnesota State Medical Association and Northwest

Lancet, Minneapolis

February

- 137 Orthopedic Treatment of Infantile Paralysis. A. J. Gillette, St. Paul.
138 *How Shall We Treat Appendicitis After the First Forty-Eight Hours? J. E. Moore, Minneapolis.
139 Iodin in Surgery. F. E. Walker, Hot Springs, S. D.

138. Abstracted in THE JOURNAL, Nov. 26, 1910, p. 1923.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 11

- 1 *The Choice of a Diuretic. E. Smith.
2 *Serotherapy of Diphtheria. E. W. Goodall.
3 *The Argyll Robertson Sign in Cerebral and Spinal Syphilis. J. M. Clarke.
4 Tuberculin Dispensaries. A. M. N. Pringle.
5 Color Vision and Color Blindness. F. W. Edridge-Green.
6 Yellow Fever in West Africa. Sir R. Boyce.
7 *Poisoning After Small Doses of Acetyl-Salicylic Acid (Aspirin). C. Morgan.

1. **The Choice of a Diuretic.**—The citrates, acetates and tartrates of sodium, potassium and ammonium, Smith says, increase the osmotic pressure of the blood and draw water from the tissues into the blood stream. They do not, therefore, irritate the kidneys, and may be used without fear, he declares, even when these organs are acutely inflamed. It is important that when taken, these drugs should be well diluted, for their action on the kidneys is thus rendered more certain; and it is useful to combine them with spirits of nitrous ether, which, on account of the nitrite of ethyl it contains, is a useful agent in causing dilatation of the afferent vessels of the kidney. In cases of renal dropsy, if the illness be acute, the saline diuretics are the only remedies of the kind which can be given without risk of further injury to the affected organs. That they may act with success, it is of the highest importance to make sure that there is no obstruction to the portal circulation through the liver. A preliminary dose of blue pill followed by a liberal saline aperient is always advisable; and if during the course of the treatment the action of the remedies is found to be getting uncertain or ineffectual, especially if the arterial tension be high, a repetition of the dose will prove to be of service. In all cases, a careful watch should be kept on the work of the bowels, and their action should be encouraged by sufficient doses of a watery aperient every day or every other day, such as the compound jalap powder. To be effectual, this powder must be ordered in adequate dose, and its action can be rendered more energetic by the addition of jalap. In the treatment of adults, elaterium is a useful remedy, but in early life its action is uncertain, and the jalap powder is to be preferred in the case of a child.

The remedial action of pilocarpin Smith has not found very satisfactory. When the acuteness of the attack subsides and the complaint begins to settle down into a chronic course, Smith advises the use of some of the special drugs which act directly on the secretory apparatus, such as digitalis and caffeine. In the choice of a diuretic in cardiac dropsy, we must bear in mind that the cause of the edema lies primarily in the chest, and not in the abdomen, and that remedies which act on the kidney are of little or no value unless combined with others which strengthen the action of the heart. We must remember, too, that when blood-pressure is low, drugs which tend to lower arterial tension still further are not only useless, but become an actual source of danger. Digitalis, strophanthus, convallaria, squill and some other drugs act as cardiac tonics, but digitalis, as a rule, is the most prized. Its efficacy as a diuretic may be further enhanced by giving it in combination with other drugs which promote diuresis by dif-

ferent means. The citrate of caffeine is, perhaps, the most useful of these drugs in ordinary cases. The combination is further strengthened by the addition of sweet spirits of nitre, as dilator of the afferent vessels of the kidney, in doses of from 30 to 60 drops. In giving this combination it is best to prescribe the digitalis alone or in conjunction with the nitrous ether for two or three days before adding the caffeine, as digitalis requires to be taken several days before its effects become noticeable. The dose of caffeine should be moderate (from 2 to 3 grains two or three times a day), as stimulation of the epithelial cells of the kidney should always be looked on as a temporary measure which is not to be abused, and may do harm if carried to excess.

The infusion of broom-tops (*scoparius*) is another safe remedy which may be usefully combined with digitalis. It contains spartein, an alkaloid which has an action on the heart similar to that of caffeine, and also contracts the afferent vessels of the kidneys. An ounce of the infusion given in conjunction with a dram of the infusion of digitalis, from 30 to 60 drops of spirits of nitrous ether, and from 60 to 90 drops of the acetate of ammonia solution is a diuretic of great value, both in cardiac dropsy and in that which results from renal disease after the acute stage is at an end. Nitrous ether is one of the most valuable diuretics and can be included in most combinations; but it is incompatible with salicylates, and also with antipyrin and any drug containing tannin. Its good effects are most noticeable when given in combination with acetate of potash, digitalis and squill.

When progress seems at a standstill, there are two drugs, either of which will often bring about a welcome change in the situation—tincture of cantharides, from 2 or 3 to 10 minims, and mercury. Either calomel or blue pill may be employed, but Smith prefers the latter. Mercury is to be avoided, he says, if renal disease be present, and when given should not be pressed if diuresis does not result in the course of three or at the most four days, for it is in such cases that the system may possibly be unfavorably affected by the treatment. Smith has given blue pills in doses of 3 grains, three times a day, in many cases, both to young people, 10 or 12 years of age, and also to the adult, and has found it to be very well borne and to produce free secretion; but when diuresis has been fully established, he has made it a rule to discontinue the mercury and replace it with a mixture of caffeine and spirits of nitre with infusion of broom-tops. If the mercury be continued too long there is the risk of setting up stomatitis; and in any case it is wise while the remedy is being taken to wash out the mouth several times a day with a suitable antiseptic solution.

2. **Serotherapy of Diphtheria.**—Goodall is averse to using antitoxin as a prophylactic. He says that not only might it happen that the person treated was especially and peculiarly susceptible to the action of serum, even if he was not known to be asthmatic, but supposing he was not naturally susceptible, it would not be unlikely that by the injection one would render him artificially so, in which case, if subsequently it were found to be necessary to use antitoxin remedially, he would run the risk of undergoing a very unpleasant illness. There are outbreaks of diphtheria in institutions for the care of children, in which, Goodall thinks, the use of antitoxin as a prophylactic, given cautiously and after due inquiry into the children's life history, may be justified. But he is strongly of the opinion that an indiscriminate use of serum as a prophylactic is not only unnecessary, but unjustifiable.

3. **Argyll-Robertson Sign in Cerebral Syphilis.**—In a recent analysis of forty-eight cases of syphilis of the brain and twenty-one of the cord, sixty-nine in all, Clarke obtained the following results with regard to the Argyll-Robertson pupil: In every case there was a clear history of syphilis, or some undoubted syphilitic lesion, and, in addition, in the later cases Fleming's test was positive. Out of the sixty-nine cases, the Argyll-Robertson pupil was present in two of cerebral syphilis. One patient was a man, aged 32, apparently with syphilitic meningitis of the convexity; he had headaches, was apathetic, forgetful, depressed, with indistinct or slightly slurring speech and exaggerated knee-jerks. He showed

no improvement under treatment, and his symptoms suggested the possibility of an early stage of general paralysis. The other patient was a woman, aged 45, who suffered from right facial paralysis twelve years ago, five years ago was under Clarke's care for cerebral syphilis, with right hemiplegia and Argyll-Robertson pupil, and has developed on the hemiplegia a typical *tabes dorsalis*. In another patient there was paralysis of the right third nerve, with complete iridoplegia, the left pupil did not react to light on admission, but recovered fully under treatment. In six patients the pupil reaction to light was sluggish, but not absent, and in three it became much brisker after treatment. One patient suffered from epileptiform fits, both general and localized, with headache and vomiting; two from hemiplegia, with headache and vomiting; one from meningitis of the convexity, with hemiparesis, cranial nodes and double optic neuritis; the fifth was a patient with hereditary syphilis, with cerebral symptoms and optic neuritis; and the sixth was a patient suffering from syphilitic cerebrospinal meningitis, with hemiplegia and intense optic neuritis. Optic neuritis, in varying intensity, was present, therefore, in three of the six patients with sluggish reaction; optic neuritis does not, of course, abolish the light reaction.

Of the twenty-one spinal cases, in one the light reaction was sluggish, and in two the Argyll-Robertson sign was present. Of the latter, one was a rather remarkable case. The patient was a man, aged 32, who had had left hemiplegia two years before, from which recovery was not complete. When admitted, he was dull, apathetic, and had some mild delusions as to place and as to his circumstances. The cord affection corresponded to Erb's syphilitic spinal paralysis, and was of very gradual onset, with the usual affection of the bladder, great exaggeration of deep reflexes, and double extensor plantar reflex. The pupils were very small. Under mercurial treatment he made an unexpectedly good recovery, both as to his mental and physical state, and was able to return to work. The Argyll-Robertson sign persisted. In the other case the cord affection was of the same kind, with no affection of sensation, no ataxy, and no symptoms, except slight incontinence, beyond those clinically referable to degeneration of the pyramidal tracts; the disease was also of very gradual onset. It is an interesting point that the only cases presenting the Argyll Robertson sign among Clarke's cases of syphilitic disease of the cord are cases belonging to the clinical group of syphilitic spastic paraplegia, first described by Erb.

7. Poisoning After Small Doses of Acetylsalicylic Acid.—Morgan reports a case of a rare idiosyncrasy to acetylsalicylic acid, a vasomotor neurosis, allied to angio-neurotic edema, but without visceral symptoms. Half an hour after taking 5 grains of the drug, the patient noticed that her lips were swollen. The swelling spread rapidly all over the face, and finally the tongue and throat became affected. In twenty-four hours all swelling had disappeared. Several months later the patient was told to take the drug again. Within an hour she became very anxious and restless, her face was enormously swollen, especially the eyelids, lips and nose. The tongue was swollen so much that it was with difficulty protruded between the teeth. The fauces also were much swollen, and she complained of great discomfort in her throat. There was no headache, but she complained of her head being "funny and uncomfortable." On her hand and forearms there was an urticarial rash. The pulse was 110, feeble. The pupils were moderately dilated, and the conjunctiva of both eyes were bloodshot. Next morning the swelling was much less, but the eyelids were still very puffy, and the vessels of the conjunctiva engorged; in fact, this symptom did not disappear for a week. The pulse was 80, and she felt well.

Lancet, London

February 11

- 8 Clinical Aspects of Emotion and Action. T. C. Shaw.
- 9 *Color Vision and Color Blindness. F. W. Edridge-Green.
- 10 *Pathology and Treatment of Injuries Caused by Electricity. Sir T. Oliver.
- 11 *Possibility of Modifying the Effect of an Inoculation of Tuberculin by Combining with It a Local Anesthetic. H. W. Crowe.
- 12 Pantopon Anesthesia. C. L. Leipoldt.
- 13 A New Method of Administering Nitrous Oxid, with or Without Oxygen, for Prolonged Dental Operations. N. S. H. Warner.

9. This article also appears in the *British Medical Journal*, Feb. 11, 1911.

10. Treatment of Injuries Caused by Electricity.—There are two main theories as to the cause of death in electric shock: (1) inhibition of the medulla oblongata, leading to arrest of respiration, followed by cessation of the beat of the heart; (2) death directly from the heart without the intermediary of respiration. Oliver's experiments seemed to show death to be of cardiac origin. After death from electric shock there is usually rigidity of the muscles. The heart is flaccid, especially the right ventricle, which contains dark fluid blood. The left ventricle may be empty. The lungs may show nothing abnormal, or there may be signs of congestion, if death was not immediate and artificial respiration had been resorted to. The pupils are dilated. The brain and spinal cord may be congested, and the abdominal veins and viscera full of dark blood. There may be hemorrhage in the brain and petechial hemorrhages in the pleura and pericardium. Although the blood is usually fluid, it is occasionally coagulated. On spectroscopic examination, it is found to contain both oxyhemoglobin and reduced hemoglobin. Chromolytic changes in the cerebral cells were found in two cases reported by Oliver. For slight shock followed by recovery no treatment is required. For burns the application of boric acid compresses, or charcoal poultices, if there is much destruction of tissues, is called for. When an injured workman is in contact with or cannot lose grip of live metal, the greatest care must be exercised in touching his body, for any attempt to separate the two might be followed by a disastrous shock to the person rendering assistance. Under any circumstances the breaking of the current means a fresh shock to the individual concerned. Once the circuit is broken, should there be no signs of life, the body must be placed on its back and artificial respiration immediately resorted to and continued for a considerable time, even if there is no quick response. In Oliver's experiments he succeeded in resuscitating animals whose heart beats and respiration had ceased for several minutes.

11. Inoculation of Tuberculin with Local Anesthesia.—The only question on which Crowe attempts to throw light is whether the inoculation of tuberculin produces its effect in any degree by stimulating afferent nerve endings at the site of the injection. His procedure has been to combine a considerable proportion of a 4 per cent. solution of beta-eucain lactate with varying doses of tuberculin in cases of phthisis under treatment by vaccines. Daily observations of the opsonic index were recorded during the whole course of the investigation, and as far as possible the blood specimens were taken at the same hour of the day. There was a distinct difference in the response to an inoculation of tuberculin in phthisis if eucain was combined with the dose. The chief proof of this rests on the form of opsonic curve which follows such doses as compared with doses in which no eucain was given. There is a possibility that an inoculation of tuberculin produces its effect, in part, by stimulating the central nervous system. Such stimulation may take place at the site of the inoculation.

Indian Medical Gazette, Calcutta

January

- 14 The Uncovenanted and Subordinate Medical Services. D. G. Crawford.
- 15 Cholera in India. P. Behr.
- 16 Arrows and Arrow Wounds in Manbhum. S. Anderson.
- 17 The Health of a Bengal District. H. Sen.
- 18 Two Cases of Ascariasis. A. D. Stewart.
- 19 General Paralysis of the Insane in a Native of India. P. Heffernan.
- 20 The Ipecacuanha Treatment in Liver Abscess. E. Muir.
- 21 Traumatic Rupture of the Prostatic Urethra. L. P. Stephen.

Journal of Laryngology, Rhinology and Otology, London

February

- 22 A Clinical and Bacteriologic Study of Thirty-Six Cases of Mastoid Suppuration, Including Ten Cases of Intracranial Complication. A. L. Turner and F. E. Reynolds.

Practitioner, London

February

- 23 Improved Diagnosis of Cancer of the Large Intestine. A. E. Barker.
- 24 Extraperitoneal Cesarean Section and Its Scope in Modern Obstetric Surgery. A. W. Russell.
- 25 General and Spinal Anesthesia. A. Brownlee.
- 26 Indications and Contra-Indications for Spinal Anesthesia. E. C. Ryall.
- 27 Cocain Anesthesia in Minor Surgery. L. R. Braithwaite.

- 28 Administration of Anesthetics on the Open Mask. W. Rankin.
29 Behavior of the Blood-Pressure in Chloroform and Ether Anesthesia, with Special Reference to Shock. H. P. Fairlie.
30 Surgical Treatment of Chronic Pleural Effusions. J. L. Stretton.
31 Neuroretinitis in Anemia. R. B. Hird.
32 *Relation of the Chemical Compositions of Human Milk to Chronic Diarrhea and Eczema in Nurslings. W. J. Maloney.
33 Treatment of Acute Pneumonia. A. G. Reid.
34 Review of Diseases of Children. H. Thursfield.
35 A Retrospect of Otolaryngology, 1910. M. Yearsley.
36 The Ament. A. R. Douglas.
37 Medical Practice in Stuart Times. A. Shepperd.

32. **Human Milk and Diarrhea.**—Maloney found that diet and exercise seem to have little or no influence on the sugar and fat content of human milk. Menstruation may coincide with marked impoverishment in fat. The amount of fat in milk varies as the hour and phase of the food, and also according to individual peculiarities of mothers; a rigorous maternal régime does not appreciably influence the richness of the milk in fat; but an impoverishment may appear simultaneously with the menses. The lactose of human milk is remarkable for the constancy of its amount, which seems indifferent to feeds, days, régimes, and menstrual periods. In sixteen milks examined by Maloney, varying in age from 3 weeks to 7 months, the amount of lactose was only once below 5.28 per cent., and twice above 6.50 per cent. The average age of these milks was 3.12 months, and the average percentage of lactose they contained was 5.82. The percentage of lactose usually attributed to human milk seems, therefore, to be too high. Diarrhea in breast-fed infants whose feeding is carefully directed may persist in some cases owing to excess of fat in the milk; in others, either owing to the presence of an abnormal laxative principle in the milk, or to the undue irritability of an otherwise normal intestinal tract. In none of Maloney's cases could excess of sugar be incriminated. A state of chronic diarrhea prevailed in seven nurslings whose feeding was carefully directed, and whose food was not abnormally rich either in fat or in lactose. Regulation of the mothers' régime did not influence this diarrhea. From three to six, usually four, motions occurred daily; they were characteristically of a light yellow color, semifluid, inoffensive, and without curds. The infants steadily gained in weight, were apparently content, enjoyed an average amount of sleep, and were not unduly querulous. Four of these babies had a history of a persistent tendency of looseness of the bowels from birth. This benign diarrhea resulted, therefore, says Maloney, either from some relatively harmless laxative principle in the mother's milk, or from an excessive irritability peculiar to the infant's intestine. If, on transferring the child for a time to a healthy wet-nurse whose own charge was progressing normally, the diarrhea should cease, the mother's milk would be proved abnormal; if, however, it should continue, the infant's intestine would be proved hypersensitive. The three or four motions each day represented the child's habit. The only treatment required was to discourage weaning and to reassure the mother; for her benefit a little bismuth was usually given to the child. Eczema may arise in nurslings from overfeeding, from richness of the milk in sugar, and from the influence of a faulty maternal hygiene on the chemical composition of the milk. But undoubtedly it may, as in Maloney's six cases, exist in the absence of overfeeding and when the milk contains only a normal amount of sugar. It may remain unaffected by the sacrifice of all the maternal indiscretions of diet. Probably it may arise independently of its commonly alleged factors; yet the co-existence of diarrhea and eczema in three babies makes Maloney reluctant to exonerate the milk-supply in any case of eczema occurring in a nursling.

Medical Press and Circular, London

February 1

- 38 Vaccination Treatment of Gonorrheal Complications. W. Friedländer and H. Reiter.
39 Treatment of the Chronic Stage of Infantile Spinal Paralysis in General Practice. F. Herniman-Johnson.
40 Modern Treatment of Gonorrhea. C. F. Marshall.
41 Urine Analysis. J. B. Smith.

February 8

- 42 Prognosis in Pulmonary Tuberculosis. T. D. Lister.
43 Treatment of Puerperal Eclampsia. W. J. Smyly.
44 A Case of Eclampsia. K. Maguire.
45 Pathology of the Embryo in Relation to Abortion. J. Lindsay.
46 Modern Treatment of Gonorrhea. C. F. Marshall

Bulletin de l'Académie de Médecine, Paris

January 24, LXXV, No. 4, pp. 59-108

- 47 *Vaccination Against Typhoid. H. Vincent and Committee.
48 Cleatrical Stenosis of the Esophagus Due to Cardiospasm. A. Chauffard and G. Guisez.

47. **Vaccination Against Typhoid.**—Vincent summarizes in detail the efforts in this line in various countries and the results obtained, presenting finally the conclusions of the majority of the committee of ten that had been appointed to study the subject. The conclusions were given in the Paris Letter in THE JOURNAL, February 25, page 601, together with the adverse minority report.

Presse Médicale, Paris

January 28, XIX, No. 8, pp. 65-80

- 49 Experiences with Salvarsan in Nervous Disease. G. Marinesco.
50 Local Anesthesia in Treatment of Tuberculosis of the Larynx. M. Boulay.
51 Physiology of the Corpus Callosum. J. Lévy-Valsen.
52 Recovery in Two Cases of Atrophic Cirrhosis of the Liver. Le Play and Doury.

February 1, No. 9, pp. 81-88

- 53 Emotional Shock and Confusional Psychoses. J. Seglas and A. Collin.
54 *Continuous Stream of Oxygen in Treatment of Diffuse Peritonitis. S. Banzet.

54. **Continuous Stream of Oxygen in Treatment of Diffuse Peritonitis.**—THE JOURNAL, May 28, 1910, page 1829, mentioned encouraging results that have been obtained by flushing the abdominal cavity with a constant stream of oxygen which escapes through drains at the lowest points. Banzet's experience in a case of diffuse peritonitis in a woman of 30, confirms the advantages of this simple measure. Besides the biologic stimulating effect of the oxygen, the gas helps, he asserts, to expel all morbid products and fluids. From the previously almost dry drains poured a flood of serous and purulent fluid after the jet of oxygen was turned into the abdomen. Banzet did not have at his disposal a tank with a stopcock to regulate the flow, and consequently he had to apply the oxygen from rubber bags, a bag containing 20 liters taking about half an hour to empty itself. The drains should not be perforated, he says, and he found that the oxygen acted more effectively when it was introduced through the different drains in turn.

Semaine Médicale, Paris

February 1, XXXI, No. 5, pp. 49-60

- 55 *Determination of Hydremia by Refractometer. (L'hydrémie chez les brightiques et les cardiaques oedémateux; son étude à l'aide de la méthode réfractométrique; comparaison de ses variations à celles du poids.) F. Widal, R. Benard and E. Vaucher.

February 8, No. 6, pp. 61-72

- 56 *Combinations of Drugs in Therapeutics. (Les associations médicamenteuses et le renforcement de l'activité d'un médicament par une autre substance ajoutée à petite dose.) P. Chapelle.

55. **Estimation of Hydremia in Nephritis and Cardiac Edema.**—Widal has long insisted on the importance of daily weighing of patients with a tendency to failing compensation and chronic kidney trouble as it is thus possible to detect retention of fluids before the edema becomes clinically manifest. The blood itself early becomes diluted, and he has found that the refractometer is a sensitive index of the degree of this dilution. He here gives the clinical findings in a number of cases in which both the changes in weight and the refractometric hydremia index were recorded in parallel tracings and the various types of the curves determined for interstitial and epithelial nephritis and in heart disease alone or associated with kidney disease. The findings are also recorded during and outside of courses of salt-poor dieting and administration of digitalis. They show that the serous infiltration of the tissues is accompanied by corresponding dilution of the blood; an "edema of the blood," he remarks, is the natural accompaniment of the edema of the tissues. As the weight declines, the refractometric index rises, but the change in weight becomes apparent first. The refractometer shows that as the excess of fluid is thrown off first from the tissues, the blood remains diluted for a time, and only later becomes concentrated. The action of digitalis is shown by the refractometric findings as it causes a sudden influx of the edema fluid into the blood. The fluids impregnating the tissues interfere with their normal nutrition and when the fluid is drained

away part of the constituents of the cells are washed away with it, and the patient emerges from the course of treatment much thinner, but recuperates afterward like a typhoid convalescent. The increase of weight later may be due to reaccumulation of the edema, and this can be determined by the refractometer; if the curve persists within normal limits, there is no dilution of the blood and no paralleling edema of the tissues. The refractometric findings also reveal at once if the course of dechloridation has not been continued long enough; the drop in the index is a warning to abstain still longer from salt.

56. New Combinations of Old Drugs.—Chapelle reviews recent research which has shown that the therapeutic efficiency of certain drugs can be materially enhanced by addition of even a minute amount of some other drug. The data learned recently in regard to the action of ions, of the colloids and metallic ferments, superficial tension, radio-activity, anaphylaxis, immunity, etc., have thrown much light on biologic processes and have shown the infinite variety of conditions in which there is an unstable balance between the cellular elements and the media lavaging them, so that the possible increased efficacy of combinations of drugs no longer seems paradoxical. They open new horizons and virgin fields for applying the old weapons in new ways and combinations.

Berliner klinische Wochenschrift

January 30, XLVIII, No. 5, pp. 197-240

- 57 *Radium in Gout and Rheumatism. W. His.
- 58 *Pylorospasm. M. Einhorn (New York).
- 59 *Therapeutic Action of Shutting Off Part of Circulation. (Künstliche Verkleinerung des Kreislaufs als wirksame Heilmethode.) J. Tornai.
- 60 *Cirrhosis of the Liver. (Entstehung des Ascites.) F. Klopstock.
- 61 *Experiences with Subcutaneous Arthrodesis. S. Peltsohn.
- 62 Tonsillectomy. (Totale Ausschälung der Rachenmandeln.) Sturmman.
- 63 Transmission of Rat Sarcoma and Mouse Carcinoma to New-Born Animals. A. Buschke.
- 64 Infectious Conjunctivitis in the Samoan Islands. (Epitheliosis desquamativa conjunctivae.) A. Leber and S. v. Prowazek.
- 65 *Mydriatic Action of Organ Extracts and Fluids. E. Catapano.
- 66 Medical Impressions of America. W. Nagel.
- 67 *Differential Reaction in Human and Cow's Milk. G. Tugendreich.

57. Treatment of Gout and Rheumatism with Radium.—His thinks that there are great therapeutic possibilities for internal medicine in radium treatment, his experience having shown the efficacy of radium emanations in a number of cases of gout and rheumatism as adjuvants to the ordinary measures. He gives the radium emanations usually by inhalation, having the patients stay for two hours daily in air containing from 2 to 4 Machie units, equivalent to 1,000 electric units. The apparatus used provides a stream of oxygen bubbling through a fluid containing the radium salt and saturated with its emanations, a ventilator distributing the emanations through the room. He regards it as important to distinguish between gout and rheumatism as the dietetic indications are important and vary widely. The only criterion is the presence of uric acid in the blood, and he deplores the fact that he knows of no simple and easy technic for detecting uric acid in the blood. The only reliable method, he states, is that of Krüger and Schmidt, applied to as much as 80 or 100 c.c. of blood. Since he has systematically investigated the blood by this method, he has had many surprises, finding that uricacidemia is evidently responsible for the frequent myalgias in the back of the neck, shoulders and lumbar muscles in many cases while they are of rheumatic origin in others. Many insidious and symmetrical affections of the smaller joints, which seem to be rheumatic, are shown by the blood-test, he asserts, to be due to uricacidemia, as also neuralgia, especially sciatica, in many cases. He hopes that a reliable unit for work with radium will soon be developed and possibly that some commoner substance may yet be discovered with radio-active powers. In conclusion, His remarks that old exostosis, indurations, loose bodies in joints and extreme atrophy of the muscles and similar irreparable conditions are not amenable to radium or any treatment; the best results may be anticipated in the more recent cases of not too long duration, in which the main changes are merely from infiltration of the joint capsule. See Ab. 3, page 700.

58. Practically the same article was published in the *Medical Record*, New York, Jan. 21, 1911.

59. Shutting Off Part of the Circulation as a Therapeutic Measure.—Tornai applied Klapp's suggestion to shut off part of the circulation as an improved method of giving anesthetics, but Tornai uses it without regard to any drug. He found that by applying a constricting band to arrest the venous circulation in the limbs, the heart had less than half the former area to serve and could work with so much less blood that its task was proportionately lightened, and it was thus given a chance to recuperate. He has applied this as a therapeutic measure in a number of cases, shutting off the circulation in the limbs for twenty or thirty minutes every morning for a week or so. The effect was striking, he reports, in cases of fatigue and dilatation from stasis of the right heart, the right ventricle being too weak to empty itself completely during the systole. By holding back part of the blood, the right ventricle was able to accomplish its task better, with less expenditure of energy, and was given a chance for rapid recuperation. The most striking benefit was obtained with mitral affections, but benefit was also realized even with degeneration of the myocardium and with beer heart, the tachycardia, arrhythmia and insufficient systole subsiding. After release from the constriction the pulse becomes slower and more regular. In the severer cases in which heart tonics fail, little can be expected from the constriction method, but he has obtained good results in a few exceptional cases even of this kind. The relief from the measure is so great that often the patients await its application with impatience. Diuresis is generally promoted, and there was profuse sweating in some cases as the constricting bands were removed; this must be done very slowly and gradually. He uses rubber tubing for the constricting band as for the Momburg technic. He attempted to enhance the action of drugs by this means, finding that a small amount had an immeasurably greater effect when the limbs were excluded from the circulation, but in order to accomplish this the arterial circulation in the limbs had to be arrested likewise, and the constriction kept up for an hour or more; the patients objected to this, so he has abandoned the method.

60. Etiology of Cirrhosis of the Liver.—Klopstock presents arguments to show that ascites is not always due to disturbances in the portal circulation, but is more liable to be the expression of chronic peritonitis. This theory throws light on the infectious and toxic factors in the origin of cirrhosis, and it also suggests that the Talma operation of omentofixation is not applicable in every case. The very fact that the ascites was cured immediately by this operation in a number of cases showed that the cure could not have been due to establishment of a collateral circulation as this requires time to develop. He knows of over 300 cases in which the Talma operation has been employed, but permanent benefit was obtained in only 30 per cent. of the 274 cases compiled by Bunge. It is adapted only for the cases in which the portal circulation is actually the causal factor.

61. Subcutaneous Arthrodesis.—Peltsohn reports three cases in which he followed Bade's technic of hammering an ivory peg into the joint. The outcome was a failure in every case, although all the wounds healed by primary intention, and there was no reaction of any kind on the part of the tissues to the presence of the foreign body. The trouble was in the ivory pegs which seemed to disintegrate; one broke, and in each case the ivory had to be removed.

65. Mydriatic Action of Organ Extracts.—Catapano describes experimental work which demonstrated that extracts of the suprarenals and hypophysis have a distinct and intense mydriatic action, while a weaker action was observed in the same line with extracts of the thymus, kidney, pancreas, liver, ovaries, testicles and muscle tissue, but not with the thyroid, brain or spleen. The mydriatic action is thus shown to be not an exclusive property of the suprarenals.

67. Differentiation of Human and Cow's Milk.—Tugendreich states that human milk gives a brown color reaction, while there is no reaction with cow's milk, when 3 c.c. of the milk are mixed with an equal amount of a 1 or 2 per cent. solution of silver nitrate and rapidly heated to boiling, three times in succession. He thinks this color reaction is connected with the

urine reaction mentioned by Engel and Turnau, whose article was abstracted in *THE JOURNAL*, February 18, page 546. [A later article by Boshan explains the reaction as merely the reduction of the silver nitrate by the chlorid in the urine. The brown stain occurs when the proportion of chlorids is low.]

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 1, XLI, No. 4, pp. 113-144

68 *Varying Susceptibility to Opium with Age. E. Döbeli.

68. **Opium for Children.**—Döbeli reports extensive experimental research and clinical experiences which supplement the data in the literature, all proving that infants are especially susceptible to opium, but that older children are no more sensitive than adults if the dosage is proportional to their age. Suckling rabbits were twice as sensitive to opium and morphin as adult animals, but after the young rabbits had been eating ordinary food for a time they were no more sensitive than adults. He found, however, that the susceptibility to codein was alike at all ages.

Deutsche medizinische Wochenschrift, Berlin

February 2, XXXVII, No. 5, pp. 193-240

69 Treatment of Benign Superficial Tumors. (Gutartiger Hautgeschwülste.) H. Paschke.

70 Fifth Edition of the German Pharmacopoeia. (Pharmakopoea Germanica Ed. V, 1910.) E. Harnack.

71 *Lack of Durable Action of Salvarsan in Neutral Suspension in Treatment of Syphilis. T. v. Marschalko.

72 *Technic of Intravenous Injection of Salvarsan. (Zur Frage der Gefahr endovenöser Einspritzung saurer Lösungen von Salvarsan.) v. Notthafft. (Nadel für intravenöse Injektion von Salvarsan.) H. Loeb.

73 Serodiagnosis of Syphilis. J. Traube.

74 *Treatment of Lupus of Mucous Membranes. (Behandlung des Schleimhautlupus.) M. Senator.

75 *Symptoms of Thyroid Intoxication After Iodid Medication. G. Wolfsohn.

76 Advantages of Chloroform Anesthesia in Normal Deliveries. (Schmerzlinderung bei normal Geburten.) B. Ehrlich.

77 Cholera Vibriones Found in the Donau River. E. Ströszner.

78 Action of Hydrogen Dioxid on Enzyme-Producing Property of Mucosa and on the Enzymes. (Einwirkung von Wasserstoffsuperoxyd auf das enzymproduzierende Vermögen der Schleimhaut und auf die ausgeschiedenen Enzyme.) L. E. Walbum.

79 *The Picric Acid Test for Seminal Fluid. (Neuer Beitrag zu meiner Spermareaktion.) M. Barberio.

80 *Fatal Diabetes Mellitus in Five Brothers and Sisters Between Ages of 4 and 11. T. Langaker.

81 Venereal Disease in Goethe's Poetry. (Die "Liebeskrankheit" in Goethes Dichtung.) M. Levor.

71. **Salvarsan in Syphilis.**—Marschalko has never witnessed any serious signs of arsenic intoxication in the course of salvarsan treatment of almost 400 patients, but he warns that subcutaneous and intramuscular injections have no durable curative action. In fifty-four cases in which the patients have been under continued observation for from two to five months, recurrence has been the rule in nearly 50 per cent., and he advises other physicians not to waste their efforts with these ineffectual technics, but to use the intravenous technic which, he states, seems to be far more reliable in respect to the durable action of the drug. He ascribes great importance to the Wassermann reaction, having found it a most valuable guide in over 4,000 cases of syphilis in the last two and a half years. In most of the cases in which salvarsan was given the Wassermann reaction gradually declined in intensity, but it became absolutely negative in only a few. He thinks that salvarsan given by the intravenous route, supplemented by mercury, is the technic for the future. He refuses now to inject salvarsan when there is a tendency to paralysis, as one patient who had had paralysis for some years died two weeks after injection of 0.3 gm. of salvarsan. There seemed to be considerable improvement for ten days after the injection, but then severe paralysis developed; there were no symptoms of arsenic intoxication at any time.

72. **Technic for Intravenous Injection.**—The danger with intravenous injection is that the needle entering the vein may go too far and injure the posterior wall of the vein. To avoid this secondary injury, von Notthafft always exposes the vein, incises it between clamps and then cautiously introduces the needle in the incision. This technic cannot be applied casually in the office or home.

74. **Treatment of Lupus of Mucous Membranes.**—Senator states that expert examination of the mucosae is indispensable for detection of all foci and lesions, and that surgical treat-

ment will succeed while other methods are liable to fail. Long-continued supervision is necessary to attack recurrences at their first inception.

75. **Thyroid Intoxication After Iodin Medication.**—Wolfsohn reports the case of a woman of 42 who was given potassium iodid in treatment of leg ulcer, as the lack of benefit from other measures suggested a possible syphilitic factor in the lesion. The day after the iodid had been commenced, the patient complained of enlargement of the neck and malaise, with tremor of eyelids, tongue and fingers; the pulse increased to 128 and the heart-beat was unusually loud and fast, with slight enlargement to the left; there was no fever. The iodid was suspended at once and the symptoms had disappeared by the end of a week. Three months later, the leg ulcer showing no improvement, it was dressed with vioform, a powder containing iodine, and in half an hour the entire leg burned and itched and in the evening the neck had become enlarged and an erythema developed, with tremor; both lobes of the thyroid were found enlarged, but not tender. During the intervals and beforehand there had never been any signs to call attention to the thyroid. In another case a woman of 32, with an old tendency to goiter and nervousness, developed Basedow symptoms after a course of iodids and thyroid tablets. The injury from this treatment persisted unmodified after the suspension of this treatment and the exophthalmic goiter syndrome has continued a progressive course during the five years since. Injection of 5 c.c. of this patient's serum into a guinea-pig evidently induced a special hypersusceptibility to iodine in the animal as it died with signs of anaphylaxis when injected with a little iodine which the control animals bore without disturbance. Wolfsohn's experiences further warn of the necessity for constant supervision of patients taking iodine, whether there is a manifest goiter or the thyroid is not palpable. The possible injury from iodine cannot be estimated beforehand; even minimal amounts are liable to induce signs of severe thyroid intoxication.

79. **Picric-Acid Test for Seminal Fluid.**—Barberio here reviews all that has been published on this forensic test for differentiation of human seminal fluid, the general conclusions testifying to the sensitiveness and reliability of the test. An equal volume of a saturated aqueous solution of picric acid is mixed with the fluid to be examined, after filtration; the specific crystals soon form even in a concentrated solution of five-year-old fluid. The crystals dissolve if the mixture is heated, but after filtering they recrystallize out again as the fluid cools. The crystals are insoluble in cold water, but dissolve in dilute hydrochloric acid and in solutions of the halogen salts of the alkaline metals. The specific crystals are octahedrons, and the findings parallel those with the Florence test, but the reaction can be obtained for years after the Florence test has ceased to give positive findings.

80. **Diabetes Mellitus in Children.**—Langaker reports from Christiania the history of a healthy family with eight children, all apparently robust, until one after the other five of the children died between the ages of 4 and 11 of typical diabetes mellitus. The environment was good and the children well cared for, but five died thus in the course of nine years. Nothing grossly pathologic was found at the necropsy of the first child that died but in the last child the pancreas seemed to be much degenerated; the others were not examined post mortem.

Medizinische Klinik, Berlin

January 29, VII, No. 5, pp. 165-206

82 Modern Progress in Treatment of Nervous and Mental Diseases. A. Pilcz.

83 *Tuberculosis of Iris After Chilling. (Iristuberkulose durch Erkältung.) B. Fleischer.

84 *Differential Diagnosis of Exophthalmic Goiter. (Zur Klinik des Morbus Basedowii und seines Grenzgebietes.) C. Kraus.

85 Dissecting Metritis and Uterine Abscess. J. Risch.

86 Suprarenal Treatment in Bronchial Asthma. E. Pick.

87 Chemotherapy of Spirilloses. P. Uhlenhuth.

88 Treatment of Earache. (Inwieweit kann man auch ohne Ohrenspiegeluntersuchung den Ohrenschmerz behandeln?) F. Bruck.

89 Technic for Wassermann Reaction. A. Alexander.

83. **Acute Tuberculous Iritis After Chilling.**—The importance which industrial insurance is assuming in Germany lends interest to the case reported: A boy of 14 was driving a wagon through a small stream when the pole-pin broke and

he had to work breast-high in water for some time to remedy the trouble. A few days later he developed acute tuberculous iritis of the right eye, compelling enucleation. Signs of a slight apical process were detected with the Roentgen rays. Fleischer admits the possibility of the effects of the chilling mobilizing bacilli in the lungs and setting up an acute process in the eye, but he does not regard it as very probable. The lack of similar cases on record in the literature testifies against the etiologic importance of the chilling; otherwise such occurrences would be common.

84. Differentiation of Exophthalmic Goiter.—Kraus calls attention to sudden attacks of intense pain in the upper abdomen and to increased radiation of heat as signs of possibly latent exophthalmic goiter. The abdominal pain in two of the most typical of his fifty cases came on suddenly, resembling gall-stone colic or the crises of tabes, and was so intense that only large doses of morphin could control it. The celiac plexus was tender but not the gall-bladder region. The attacks did not correspond to intake of food; they came on generally at night and application of cold or heat gave no relief. The pain was ascribed at first to spasm of the abdominal vessels, and drugs to act on the kidneys were given but without effect. One patient also had the typical "giving way of the legs" sign of exophthalmic goiter but there was no paralysis; the extensors of the knees gave way completely all at once and the patient required aid to get up from the kneeling posture. The very severe acute condition in the other patient had evidently been aggravated by local application of iodine. After exclusion of all other causes for the pain, nothing was left but the assumption of action on the solar plexus of the toxin causing the exophthalmic goiter. In a third case, a man of 28 had suffered for seven years from mild exophthalmic goiter which was finally aggravated by overwork. Then attacks of pain came on in the night accompanied by vomiting. In a fourth case the spasmodic pain was the first symptom of trouble; a man of 52 was suddenly attacked with violent abdominal pain—neuralgia as he supposed. The pain persisted and he lost 21 pounds in weight in two weeks and by the end of the month his weight had dropped from 172 to 118 pounds. Several courses of sanatorium treatment brought no relief. By the end of three months symptoms of exophthalmic goiter developed, including restlessness, insomnia, palpitations and pains in the shoulders, but the appetite remained good. On suspicion of "Basedowoid," he was given antithyroidin and the pains gradually subsided under this and hydrotherapy with application of the continued current to the neck. The Basedow triad since has become more pronounced but the general health has improved and there has been no recurrence of the abdominal pains. Another important sign of hyperfunctioning of the thyroid is the increased radiation of heat from the skin. The temperature in the axilla is liable to be as high as that in the mouth or even a trifle higher. The burning skin with otherwise latent exophthalmic goiter may suggest latent tuberculosis. Cardio-vascular neuroses may simulate exophthalmic goiter but the lack of rapid drop of weight speaks against the latter. Hyperthyroidism may induce a condition resembling chlorosis, and during the menopause disturbances may develop suggesting the Basedow triad. This borderland disturbance deserves special attention, Kraus remarks, as the prevailing tendency to give iodids in prophylaxis or treatment of arteriosclerosis is liable to induce these nervous disturbances or aggravate a latent tendency to exophthalmic goiter. Another sign of hyperfunctioning of the thyroid is the tendency to frequent and copious stools. This sign is particularly instructive when individuals long constipated suddenly find bowel functioning becoming regular as other signs of hyperfunctioning on the part of the thyroid develop. In all dubious cases the scale is turned by the disproportion between an abundance of nourishing food and the progressive decline in the body weight.

Münchener medizinische Wochenschrift

January 31, LVIII, No. 5, pp. 233-288

- 90 *Experiences with Salvarsan. C. Kopp, Treupel and Levi.
- 91 Syphilitic Pemphigus of New-Born Infants. K. Baisch.
- 92 Technic for Intravenous Injection of Salvarsan. A. Stühmer.
- 93 *Determination of Diastolic Blood-Pressure by Palpation of Ulnar Artery. H. Ehret.

- 94 *Treatment of Eclampsia by Method of Stroganoff. E. Roth.
- 95 *Rigid Arteries in Children. (Arterienrigidität im Kindesalter.) F. Hamburger.
- 96 *Exercises in Repose. (Ueber Ruheübungen und Ruheübungsapparate.) L. Hirschlauff.
- 97 Transformation of *Staphylococcus aureus* into *Staphylococcus albus*. E. Palier (New York).
- 98 Multiple Arthritis After Test Injection of 0.5 mg. Tuberculin. W. Diem.
- 99 Resection of Larynx or Esophagus. R. Zimmermann.
- 100 Teaching of Pathology in the United States. H. Chiari.

90. Salvarsan in Syphilis.—Kopp was discouraged by the frequent local necrosis with subcutaneous injection, and he now uses the intravenous route exclusively. In his experience with 130 cases he had this necrosis in 20 per cent. of the subcutaneous cases, but has had no mishaps in the forty-eight patients treated by the intravenous route. In three cases the injection was made soon after infection, before the primary exanthem had developed, and none of the three patients has shown any sign of recurrence during the five months since, so that he regards them as probably cured.

Treupel and Levi have also changed to the intravenous route but warn that this method cannot be applied to outpatients. In one case they noticed total facial paralysis and considerable deafness after two injections of salvarsan, the symptoms resembling those reported by Finger in a few cases.

93. The Diastolic Blood-Pressure and Palpation of the Ulnar Artery.—Ehret has compared the findings with his method of palpation of the ulnar artery with those from auscultation, and with von Recklinghausen's method of oscillation. He says that with a simple Recklinghausen cuff, a rubber bulb and a manometer both the systolic and diastolic pressure can be determined by his method with as much precision as with a more expensive apparatus. He gives the conclusions from study of the findings on application of his method in over 1,000 cases.

94. Stroganoff's Prophylactic Method of Treating Eclampsia.—Roth reviews the experiences at the clinic in charge of Leopold at Dresden where Stroganoff's method was applied in fifty cases. The results were encouraging and justify, he declares, the adoption of this method in routine treatment of eclampsia in the home when removal to an institution is impracticable for any reason. The main point is to commence the treatment early and carry it through systematically according to Stroganoff's directions. [They were given in *THE JOURNAL*, July 3, 1909, page 86.]

95. Rigidity of the Arteries in Children.—Hamburger has frequently noticed unusual size and hardness of the arteries in children between the age of 8 and 14; the findings are sometimes so pronounced that they suggest arteriosclerosis or kidney disease, but he ascribes the phenomenon to nervous vasomotor influences. Certain signs of neurasthenia and nervous irritability can usually be detected in these children, and this exaggerated tonus of the artery is encountered during the years when school life makes special demands on the nervous system. Disturbances of this kind are more common in ambitious, studious children.

96. Exercises in Repose.—Hirschlauff has devised a system of exercises which aim to relax all the volitional muscles while excluding external impressions and promoting mental concentration. The patient reclines on a lounge, the eyes covered and the attention concentrated on his slow breathing. He has the patient do this for five respirations and repeat every hour or so during the day. A little perfume on the upper lips helps to concentrate the attention, and he describes other devices to promote absolute repose of the muscular and nervous systems in treatment of cramps and ties, professional neuroses, chorea, tremor, etc.

Therapeutische Monatshefte, Berlin

February, XXV, No. 2, pp. 81-144

- 101 *Treatment of Diabetic Acidosis. L. Lichtwitz.
- 102 *Albumin Milk in Infant Feeding. (Erfahrungen mit Eiweissmilch.) E. Weide.
- 103 Lime Metabolism in Connection with the Food. (Der Kalkstoffwechsel in seiner Abhängigkeit von der Nahrung.) M. Kochmann.
- 104 The Organism Does Not Become Accustomed to Action of Certain Narcotics. (Ueber die Gewöhnung an die Narkotika der Fettreihe.) F. Japhé.

101. **Substitutes for Sodium Bicarbonate in Acidosis.**—Lichtwitz discusses the mechanism of the acid intoxication in diabetes and shows that sodium salts with anions capable of combustion are preferable to the bicarbonate. Sodium citrate is advantageous as its taste permits it to be added to certain dishes or given with lemon juice as lemonade. It does not cause disturbance in the stomach like the bicarbonate; the appetite does not suffer, and he has never observed diarrhea even with 50 gm. (750 grains) a day. In a typical case 20 gm. a day of the bicarbonate caused diarrhea; it was then suspended and 30 gm. of the citrate given daily, which seemed to have an equally good effect on the metabolism while no further bowel trouble was noticed. The elimination of nitrogen also increased under the citrate. The citrate might be injected intravenously in emergencies; the bicarbonate is less adapted for this method of administration on account of its strong alkaline reaction. The citrate has only a weak alkaline reaction and this can be neutralized by adding a little citric acid.

102. **Casein Milk in Infant Feeding.**—Welde reports a year's experience with the Finkelstein and Meyer *Eiweissmilch*; it contains very little sugar and salts and proportionately large amounts of casein. He says that this albumin milk fulfilled all his anticipations and more, and may possibly prove the best substitute for mother's milk, at least during periods of indigestion accompanied with diarrhea. It has the disadvantages of a high price and uninviting aspect and taste. One new-born infant tested thrived on it; three infants with eczema were cured soon after being put on the albumin milk, twenty-three of twenty-five infants with severe indigestion were cured, as also sixteen in twenty in the phase of "decomposition," two of three infants with acute intoxications and six of eight with severe infectious processes. Only seven of the fifty-six very sick babies died, while among those saved were a number who had seemed to be actually moribund. Some of the children taking the "albumin milk" passed safely through an intercurrent influenza. This modification of milk was described in THE JOURNAL, July 2 and 30, 1910, pages 93 and 407.

Therapie der Gegenwart, Berlin

February, LII, No. 2, pp. 49-96

- 105 *Typhoid in Children. (Abdominaltyphus der Kinder.) A. Baginsky.
106 *Syphilis of the Liver. (Luetisches Leberfieber.) O. Huber.
107 Enhancing of Action of Narcotics by Combination with Others. (Verstärkung der Wirkung verschiedener Narkotika speziell des Pantopons durch Skopolamin.) J. R. Hani.
108 Nature of Hysteria. O. Kohnstamm.
109 Anaphylaxis. (Wesen und die Bedeutung der Ueberempfindlichkeit.) E. Friedberger and F. Klemperer.

105. **Typhoid Fever in Children.**—Baginsky discusses the points in which typhoid in children differs from that disease in adults. He feeds the child milk, broth and raw yolks of eggs, with a little wine during the entire febrile stage and convalescence. He thinks the wine is important to keep up the general nutrition. He warns in particular to be on the watch for otitis. The child's heart can be depended on much more than the heart of the adult, and drugs are seldom necessary for disturbances in the heart action, but too much attention cannot be paid to prevention of boils and other disorders of the skin as secondary septic infection may have most serious results.

106. **Febrile Liver Syphilis.**—Huber describes a case in which a man of 31, four years after infection with syphilis followed by energetic mercurial treatment, had violent attacks of pain in the liver radiating to the right shoulder; the liver was much enlarged and after two years and a half fever developed with night sweats and chills. Gall-stones had been diagnosed; no improvement followed systematic medical treatment on this assumption and an operation for the supposed gall-stones followed. None was found but signs of gumma of the liver were discovered; under a single injection of salvarsan the entire syndrome subsided. Tertiary syphilitic liver fever is of the hectic type, intermittent or remittent, with night sweats and more or less pronounced chills. With all this the general health suffers little for a long time. The absence of jaundice is also suggestive.

Wiener klinische Wochenschrift, Vienna

February 2, XXIV, No. 5, pp. 153-190

- 110 *Changes in the Pancreas in Diabetes Mellitus. A. Weichselbaum.
111 Behavior of Albuminuria and Tube-Casts in Urine During a Course of Mineral Waters at Marienbad. K. Zörkendörfer.
112 Leg Phenomenon in Hysteria. (Ein dem "Beinphänomen" der echten Tetanie in seinem klinischen Aussehen gleichendes, vielleicht richtiger als "Pseudo-Beinphänomen" zu bezeichnendes Symptom in einem Falle von Pseudo-tetania hysterica.) W. Buettner.
113 Globulins in Syphilitic Serums. (Vergleichende Globulinmessungen anluetischen Seris.) R. Müller and W. Hough.
114 Metaplasia of Gastric Epithelium. A. Hermann.

110. **The Pancreas in Diabetes.**—Weichselbaum found the islands of Langerhans strikingly pathologic in the 183 cadavers of diabetics he has had opportunity to examine, while no changes of the kind in the islands could be detected in the seventy-three cases of chronic tuberculosis he examined post mortem. He states further that his findings demonstrate that it is not any special changes in the islands but the extent of involvement which determines the development of diabetes. In some non-diabetics the parenchyma was found atrophied while the islands were not much degenerated; in a few cases the pancreas weighed less than 35 gm. or even 20 gm. but the islands had maintained their integrity; although the urine had been examined repeatedly for sugar during life the findings were constantly negative. The type of the diabetes corresponds to the different forms of the changes in the islands, the graver forms accompanying complicating arteriosclerotic changes in the islands. The practical conclusion is that everything that tends to favor arteriosclerosis should be carefully avoided when diabetes is feared or is established. Chronic alcoholism is a factor of this kind; it seems to be able to induce not only cirrhosis of the liver but a chronic interstitial pancreatitis which may lead to sclerosis of the islands.

Zentralblatt für Chirurgie, Leipsic

February 4, XXXVIII, No. 5, pp. 153-184

- 115 *Opening New Collateral Blood and Lymph Routes. (Eröffnung neuer Abfuhrwege bei Stauung in Bauch und unteren Extremitäten.) O. Lanz.
116 *Urethral Injection of Glycerin to Facilitate Passage of Sounds. (Perurethrale Glycerin-Druckinjektion zwecks leichteren Entrierens sog. impermeabler Strikturen.) T. Goldenberg.
117 *Improved Technic for Nephropexy. Liek.

115. **Operative Opening of New Collateral Circulation.**—Lanz has applied the Talma operation in four cases of ascites from cirrhosis of the liver, with complete success in two cases and absolute failure in the others. In a more recent case the patient was a man of 69 with enormous ascites and suspected cirrhosis of the liver and alcoholism. The absence of enlarged veins in the abdominal wall and the age of the patient suggested carcinomatous peritonitis. In order to divert the fluid into a new route, after removal of 12 or 15 liters of fluid, Lanz drew the right testicle upward out of the scrotum by pulling on the spermatic cord, and implanted it in the open abdominal cavity, suturing the spermatic cord its entire length around the peritoneal incision. The discovery of tuberculous nodules in the peritoneum had left little hope of permanent recovery and the patient died five weeks later. There had been no recurrence of the ascites but the spermatic cord and the retroperitoneal tissue were found gorged with serous infiltration, everything showing that the operation had provided a collateral circulation for the lymph with direct drainage of the peritoneal cavity along the spermatic cord with its wealth of lymphatics. The outcome might have been still better if the testicle had been wrapped in omentum. The findings at necropsy corroborated the advantages of this method of internal drainage; the results are more promising. Lanz declares, than when the omentum is merely fastened—as by the Talma operation—to the abdominal wall which is not so rich in lymphatics.

116. **Glycerin for Impermeable Urethral Stricture.**—Goldenberg injects about 20 c.c. of glycerin under considerable pressure and at once the catheter finds its way through the previously impermeable stricture. The glycerin has the further advantage of being completely soluble in water, thus obviating all danger of embolism.

117. **Nephropexy.**—Liek used the capsule of the kidney to fasten it in its proper place in a case reported, drawing the slit capsule up around the lower pole of the kidney and fastening it to the twelfth rib. The technic is illustrated.

Zentralblatt für Gynäkologie, Leipsic*February 4, XXXV, No. 5, pp. 177-224*

- 118 *Technic of Pubiotomy. R. Costa.
- 119 Operative Sensibility of Female Genitalia. (Sensibilität der weiblichen Geschlechtsteile.) J. v. Mann.
- 120 Treatment of Placenta Prævia in the Home. (Zur Behandlung der Placenta prævia in der Aussenpraxis und zur extra-ovulären Einführung des Metreurynters.) J. Füh.
- 121 Perforation of Intestine During Curettage of Uterus. K. Justi.

118. **Technic of Pubiotomy.**—Costa gives an illustrated description of an improved method of pubiotomy which ensures preventive hemostasis of the vessels under the pubis. In carrying out the operation as described on ten cadavers, the bladder had been filled with a blue stain; no trace of injury of this organ could be detected.

Gazzetta degli Ospedali e delle Cliniche, Milan*January 26, XXXII, No. 12, pp. 123-130*

- 122 Acidity of Urine Not Constant in Tuberculosis. Barabaschi.
- January 29, No. 13, pp. 131-146*
- 123 Internal Hypersecretion. (Il concetto clinico dell'ipersecrezione interna.) G. A. Parl.

Riforma Medica, Naples*January 16, XXVII, No. 3, pp. 57-84*

- 124 *Inherited Hemorrhagic Telangiectasia. W. Osler.
- 125 *Exploratory Puncture of Bone Marrow. G. Ghedini.
- 126 Isolytic and Heterolytic Power of Organic Fluids. E. Cedran-golo.

January 23, No. 4, pp. 85-112

- 127 Pathogenesis of Infectious Purpura Hemorrhagica. S. Can-nata.

124. **Inherited Hemorrhagic Telangiectasia.**—Osler reports a fifth case of this anomaly, his other four having been published at various times since 1901. Others have reported similar cases since so that he now knows of fourteen or fifteen families in which two or more members through from two to five generations had these multiple telangiectasias of the skin and mucous membranes, bleeding frequently and leading in some cases to repeated and almost fatal epistaxis. The only etiologic factor of any account seems to be the heredity. One of his patients had had repeated epistaxis for over forty years; another had frequent hemorrhages from a vascular nevus on the hand and another on the arm. Probably in many of the cases the anomaly has been regarded as a manifestation of hemophilia, but this is incorrect, he thinks. The trouble is a dilatation of the capillaries and smaller veins and much can be done in treatment by cauterization. In his last case he warded off danger by destroying the dilated vessels in the nose and on the tongue by cauterization. The patient was a woman of 35 and the lesions had notably increased in number and size during the last six years. Coe has reported benefit from administration of calcium lactate in such cases, and Osler suggests that if the angiomas are large it might be wise to apply radium treatment.

125. **Exploratory Puncture of Bone Marrow.**—Ghedini here reports the experiences on which he based his conclusions recently summarized in these columns, February 4, page 389. Application of the measure in twenty-four cases has demonstrated, he remarks, the ease and simplicity of the technic and its harmlessness.

Hospitalstidende, Copenhagen*February 1, LIV, No. 5, pp. 105-136*

- 128 *Multiple Punctures in Treatment of Cystic Disease of the Kidney. (Behandling af det multilokulære Nyrækystom med multiple Punkture.) T. Rovsing.
- 129 Inherited Predisposition to Pulmonary Tuberculosis. (Arvelighed af Disposition til Lungetuberkulose.) N. J. Strandgaard. Commenced in No. 4.

128. **Multiple Puncture in Cystic Disease of the Kidney.**—Rovsing had a patient, a man of 41, who had been healthy until about a year before when violent pains in the left kidney region came on suddenly and the attacks returned from time to time, with occasionally mild pains in the right side. There was considerable albuminuria and the left kidney was found much enlarged. On the diagnosis of tumor of the kidney, Rovsing exposed the left kidney and found it studded with cysts. Nephrectomy was contra-indicated as cystic disease is generally bilateral, and the urine from the other kidney was not normal. He at once punctured the superficial cysts and then the deeper and deepest ones. There was scarcely any bleeding and after the puncture the kidney subsided to less than half its former size. He left a wick in

the wound and the diuresis increased while the albuminuria disappeared. The patient was freed entirely from pain and regained full earning capacity, dying three years later from uremia following an acute febrile disease. Rovsing had been very dubious in regard to the outcome, for, if the "retention cyst" theory of cystic disease of the kidney is correct, the multiple puncture holes would have drained away the urine and infiltration and a fistula would have been the result. On the other hand, if the disease were in the nature of a new growth, there was danger that the tumor mass would proliferate into the adjoining tissue. Nothing of the kind occurred; the wound healed rapidly and there was no question but that the operation was not only palliative but improved the kidney functioning; there must have been considerable sound kidney tissue which was able to resume functioning when released from compression by the cysts. Encouraged by this success he applied the same measure in two other cases later, with equal benefit, as he relates in detail.

Norsk Magazin for Lægevidenskaben, Christiania*February, LXXII, No. 2, pp. 105-224*

- 130 Clinical Experiences with Tbiosinamin and Fibrolysin. H. L. C. Huitfeldt.
- 131 Fibrolysin in Chronic Adhesive Peritonitis. N. B. Koppang.
- 132 Clinical Experiences with Salvarsan. K. Grøn.
- 133 *Bile Pigment in Blood Serum and Its Clinical Significance. (Galdereaktion i blodserum og dens kliniske betydning.) O. Scheel.
- 134 Improved Cuff for Dosage of Constriction Hyperemia and Blood-Pressure. (Professor Perthes' apparater.) E. E. Lindboe.

133. **Clinical Importance of Bile Pigment in the Blood Serum.**—Scheel reports his experiences with tests applied to detect the presence of bile pigment in the blood in health and in various diseases. An instructive diagram shows at a glance the findings in the urine with the Gmelin test in these different conditions and the proportion of bile pigment in the blood serum as determined by the Gilbert reaction, the original test slightly simplified. The reaction was naturally most pronounced in jaundice, next in pernicious anemia and pyemia while failing compensation with a heart defect came next. Chronic nephritis without stasis was within normal range; with stasis there was a slight positive reaction.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE NINTH YEAR-BOOK OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. Part II, The Nurse in Education. By Thomas D. Wood, A.M., M.D., Professor of Physical Education, Teachers College and Columbia University; M. Adelaide Nutting, Professor of Nursing and Health, and of Household Administration, Teachers College, New York City; Isabel M. Stewart, Instructor in Nursing and Health, Teachers College, New York City, and Mary L. Read, B.S. Supplement to the Year-Book on "Health and Education" Discussed at the Indianapolis Meeting of the National Society, Feb. 28, 1910. Paper. Price, 78 cents. Pp. 76. The University of Chicago Press, Chicago.

INEBRIETY. A Clinical Treatise on the Etiology, Symptomatology, Neurosis, Psychosis and Treatment and the Medicolegal Relations. By T. D. Crothers, M.D., Superintendent Walnut Lodge Hospital, Hartford, Conn. Cloth. Price, \$3. Pp. 365. Cincinnati: Harvey Publishing Co., 1911.

TWENTY-SIXTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF RHODE ISLAND. For the Year Ending Dec. 31, 1903, and Including the Report on the Registration of Births, Marriages and Deaths in 1902. Cloth. Pp. 300. Gardner T. Swarts, M.D., Secretary, 70 Waterman Street, Providence, R. I.

A MANUAL OF PHYSICAL DIAGNOSIS. By Brefney Rolph O'Reilly, M.D., C.M., Demonstrator in Clinical Medicine and in Pathology, University of Toronto. Cloth. Price, \$2 net. Pp. 369, with 49 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

NINETY-SEVENTH ANNUAL REPORT OF THE TRUSTEES OF THE MASSACHUSETTS GENERAL HOSPITAL. Including the General Hospital in Boston, the McLean Hospital and the Convalescent Hospital in Waverley. 1910. Paper. Pp. 294, with illustrations.

REPORTS OF THE TRUSTEES AND SUPERINTENDENT OF THE BUTLER HOSPITAL. Presented to the Corporation at its Sixty-Seventh Annual Meeting, Jan. 25, 1911, Providence, R. I. Paper. Pp. 55. G. Alder Blumer, M.D., L.R.C.P., Superintendent.

FORTY-FIRST ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS. Public Document No. 34. Cloth. Pp. 917. Mark W. Richardson, M.D., 145 State House, Boston, Secretary. 1909.

THE JOHNS HOPKINS HOSPITAL REPORTS. Volume XVI. Paper. Pp. 670, with 151 illustrations. Baltimore: The Johns Hopkins Press, 1911.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 11

CHICAGO, ILLINOIS

MARCH 18, 1911

THE INTERPRETATION OF PAIN AND THE DYSESTHESIAS

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In one of Horace's Epistles, he speaks of an *agrimonia fastidiosa*, an expression which indicates an illness characterized by certain niceties of suffering, and not by the common and every-day variety of pain.

It is to this field of what may be called fastidious, though not unreal, distress that I invite some attention now; and my excuse is, that I believe it greatly deserves and will amply repay serious study and patient attention. For the time has come for the physician to study the subjective side of his patient more carefully, and the psychology of suffering in general, so that he can learn and interpret the patient's state of mind, as thoroughly as he does that of the body.

The research into human ailments by present methods has nearly reached its limit so far as clinical study goes. It must be continued in the laboratories, and from the methods of the laboratory we may yet expect our richest finds. A field most fertile for the neurologist now is that of studying the mental make-up of his patient, his habits of thought and feeling, the quality of his reactions and the mold in which education and environment have shaped his character. Then we begin to understand what he means by his complaints. The elements of psychology, when properly taught, do not form a difficult subject, or one which medical students cannot easily master. I can heartily second the advice recently given by President Schurman of Cornell, that this branch be taught to the medical student as an obligatory part of his course. So far, it is only the psychiatrists who have seriously taken up and applied psychology to medicine; but by doing so they have given to that branch the enormous impulse which it has received during the last decade. Neurology will fall behind if it does not make use of the same instrument.

THE DOCTRINE OF PARALLELISM

Let me now apply this preaching and come to the subject in hand. Psychology has shown that all mental activities are accompanied by neural activities, and that there is such a thorough-going parallelism between the two that when the mental state is disordered the accompanying neural activity must be also disordered. As Mr. Marshall puts it, "All neurotic activity is but an emphasis of a corresponding neururgic activity."¹

We cannot imagine for example, a hallucination (which is an abnormal mental state) to be the production or the parallel of a perfectly normal neural state.

or that there can be a perfectly normal neural activity of any kind running parallel with a morbid mental activity.

We cannot, as psychologists, imagine an agonizing pain disturbing our consciousness, without supposing that there is an abnormal neural state associated with it. Thus it must be that all pains and all suffering are real things. There is no such thing, strictly speaking, as an imaginary pain; that is, a pain which has no morbid neural condition underlying it. There is, furthermore, no such thing as a purely mental disease, for all disturbances of the mind are associated with some abnormal neural change. I assert, therefore, that whenever a person believes that he is suffering, he really is suffering. There are no functional psychoses and no functional neuroses. I emphasize this point, because it is so easy and so common a thing for physicians to dismiss a certain class of patients by saying: "There is nothing the matter with you; forget it and you will be well." The view of human suffering which I take is directly the opposite of that of the late esteemed Mrs. Eddy, but I must bear the obloquy. The surgical method of treating hysteria is to say: "You are a damned fool; go and behave yourself." Sometimes this form of therapeutic procedure answers, but it is not because the statement is strictly true that it succeeds. The fact that there is a system of therapeutics, based on the view that pain or morbidly unpleasant sensations do not exist, is not a proof of its veracity, even though the theory may often answer well. Pains do disappear when the attention is directed elsewhere, and the threshold of consciousness is raised so that the disagreeable sensations are excluded; but there was all the same an abnormal condition, cured by opposing to it a mental state; just as by changing the gait, certain strains are removed and ease of walking returns.

This paper is an attempt to study pains and dysesthesias and to show what they mean and how serious they are. I shall say little about the ordinary pains due to lesions of the peripheral and spinal sensory tracts; the facts here do not need much further interpretation.

SENSORY TRACT PAINS

We have a rather different kind of pain according to the seat of the irritation in the sensory nerve-tract.

1. For example, lesions of the cutaneous terminals of sensory nerves, such as occur in diabetic neuritis and certain forms of toxic and arteriosclerotic neuritis, cause symptoms more of the nature of paresthesias, burning sensations and soreness, than of actual pain.

2. Lesions of the muscular and visceral sensory terminals cause colicky, anginal and cramping pains.

3. On the other hand, lesions of the nerve-trunks themselves, as in alcoholic or rheumatic neuritis, cause a distinct aching and throbbing kind of pain, with occa-

1. Marshall, Henry Rutgers: Consciousness, Macmillan Co., 1910

sional shooting pain running more or less along the nerves, with the complicating feelings of heaviness, weakness and some minor paresthesias.

4. Lesions of the posterior ganglia and sensory roots cause sharp, shooting pains more particularly, together with vasomotor disturbances.

5. Lesions of the sensory tracts of the cord and brain, (aside from the thalamus) rarely cause pain; more often only numbness and other paresthesias, such as cold and hot sensations.

6. Lesions of the thalamus cause burning, smarting pains.

7. Lesions of the sensory cortex of the brain cause no pain.

Of course the character of pain depends much on the nature, intensity and duration of the stimulus, but the general facts are about as I have stated.

Now, in clinical examinations, it is usually quite easy to interpret the description of the pains complained of and to determine that they are caused by some irritation of a nerve terminal as in diabetic neuritis, or of the trunk, as in brachial neuritis, or of a posterior ganglion and root, as in tabes and tumors of the cord.

PSYCHIC AND ATTENTION PAINS

But there is another group of sensory complaints. For ten or fifteen years, it has been my custom when a patient was particularly eloquent and emphatic in the description of various painful symptoms, to write down the characteristics on a slip of paper, add to it the name, age and diagnosis and file away the semeiologic note. I have collected these multitudinous scraps of sensorial description and have tried to associate them with some definite group of nervous or mental ailments. I have not been able entirely to clear up the mystery of bizarre complaints by this plan, but I have got thus far, namely, that now when certain groups of sensory symptoms are told me, I can often infer at once that the patient has one or another form of a psychoneurosis, or has some degree of arteriosclerosis, or of toxic or neuritic irritation.

There are two tendencies among those studying the psychoneuroses just now. One is to group what we may call the minor psychoses into three or four classes; and to put our patients into Class A, B, C, or D, and then treat each as we would the similar patients of this class.

Other psychoneurologists advocate the individual treatment of patients, and deny the importance of making any very definite diagnosis. Each individual and disease-condition, they say, should be treated by himself and itself. The past history is unfolded to the last detail, the present state is analyzed and the disordered associations are then treated and educated into right channels again.

The true method lies probably in the golden mean, but my habit and practice, I confess, go more with the first group. It seems to me that there are three or four broad general lines in which chronic forms of psychoneuroses shape themselves, and that nearly all cases can, with proper caution, be merged into one or other of these groups.

There is, for example, a certain condition which is known as neurasthenia, in which the cerebral and spinal centers are weak and irritable and easily exhausted and tired. In these cases, there is sometimes no important psychic defect.

There is another group which has received the name of psychasthenia, in which there is always present some psychic defect. The dominant and important symptoms are mental, and the patient has fears and doubts,

tormenting ideas, depression and panics. Belonging to this group are those persons also who are subject to hysterical crises and to the impulsions and explosions characteristic of the inebriate.

There are, again, forms of mild depression which usually in early life are not accompanied with any nervous or physical symptoms, but in later life are very closely associated with physical symptoms. These depressions are for practical purposes called the manic depressive type and involution type of melancholia.

Finally, there is a condition of constitutional inferiority in which the individual has always an undue sensitiveness to irritation.

In looking over my Pandora's box of woe, I find that a rather distinct kind of pain and dysesthesia goes more or less with each of these groups.

THE PAINS OF THE OBSESSIVES

In interpreting the tales of suffering and pains which are unfolded to us, by persons who have no grave organic disease, one has to note carefully the attitude of mind of the patient towards his own suffering. In a certain class of patients, the pains are described with enthusiasm and intensity of feeling—with, indeed, a sort of joyful emphasis—the sufferers using a most rich vocabulary of superlatives as they point out their woes. The patient, with a smile, says that she is suffering untold and infinite agony from a pain which has not left her arm or head or back for six months. Another, with a certain expression of satisfaction, says that she has had a headache for fourteen years, always very severe. Another describes in a tumultuous flow of words a succession of curious and unpleasant sensations for which we have no definite names in our clinical symptomatology.

These patients, who with a healthy look and a somewhat earnest and satisfied way describe their sufferings, always belong in general to the class of obsessives or psychasthenics. Their pains are generally pretty definite. It is always a neuralgia of the arm or a pain over the kidney or the liver, or a steady pain in the back or on the side of the head.

The symptoms are those which involve especially the epicritic nerves; in other words, they are clear-cut, severe pains, or definitely outlined and located feelings of heat, cold, or tactile dysesthesias.

The localization of these pains is usually in some spot that does not correspond with the course of a nerve or with any nerve plexus. They are in the shoulder, or a joint, or the side of the head or back. Very often they lie in or over the abdominal viscera, and include neuralgias or paresthesias of the rectum, stomach, intestines or uterus. As a rule, these pains have no doubt been originally started by some definite sensory irritation, such as an injury or a disturbance of visceral function, or a strain put on the eyes or brain. In the obsessive patients, there is usually also an undercurrent of neurasthenia, and their pains, brought on at first by exhaustion and toxic conditions, are emphasized and glorified by the psychasthenic condition.²

2. Psychasthenic and Neurasthenic Pains.—The following are from notes of cases: a favorite sore spot on the side of the head; a tremulous jelly-like feeling in the back; a pain in the ovary, when excited; a painful globus; a localized paresthesia over the supraclavicular and infraclavicular region, lasting several years; a dysesthesia fixed definitely in the knees, elbows and epigastrium; fixed pains in side of head, in side of chest, in arm, fingers, ovaries; pressure, soreness and heat of occiput, tightness around jaw or neck; helmet sensation, sensation of the head being a vacuum; of the body being too short or too long; sensations of nervousness, tension, apprehension, uncertainty, restlessness, inside trembling, sinking feeling, as if about to faint, or die; sensations of unsteadiness, defective equilibrium; extreme painful sensory reaction to certain sights, to noises, disorder, developing pains, nausea, faintness, vertigo, etc.

The pains of the obsessives are such as can be argued with. They will admit that they should not have these pains, that perhaps they are imaginary, though they do not really believe it; they will often try conscientiously to forget them. And by suggestion, by earnest explanation, by various therapeutic incantations or by long and patient reeducation, often excellent results are produced.

A healthy woman about 40 years of age was met one day by her son, who had returned after a long absence and who grasped and squeezed her hand with an extra degree of filial earnestness, so that he practically crushed some few peripheral nerve filaments of the hand and caused her great pain. This lasted throughout the day; the next day, instead of subsiding, it increased. The hand was bandaged and kept at rest, but the pain still continued, and after some weeks was so severe that it was determined there was a neuritis. This neuritis, it was supposed, ascended, so that in the course of the next nine months, the several nerves of the arm were cut, three different operations being done on it, all without relief, and with the result of still greater suffering. At the end of the nine months I examined the hand and found nothing objectively wrong, except what had been done by the surgeons. On my telling her to let her hand alone and go about her work, the pain in the course of a few weeks subsided, and she recovered the use of her hand.

In this case, the pains from which the woman had suffered for nearly a year were not due to any irritation of importance in the sensory tracts. The pain was central and would ordinarily be called "imaginary" or hallucinatory.

The psychology of it is not so simple. It means that there was a disorder of attention and a lowering of the threshold of consciousness; all the time there was some real neural irritation which occupied and morbidly enlarged the field of attention. It is not necessary to invoke hysteria or necessarily the subconsciousness or the memory of the painful squeeze tucked away in the optic thalamus. The term "attention-pains" offers a sufficient psychology to begin with. With these pains is usually an egotistic and anxious feeling, and these factors furnish the indications for treatment.

A patient of mine, now a man of 60, has for fifteen years been going around on crutches because he has so much pain in the knees. These knee-pains are always present slightly, but are greatly increased by walking, or by any serious vibration; so that he cannot use a motor car or carriage, and he travels, whenever it is possible, by boat. This patient is an educated and intelligent man, without any observable psychosis or stigma of hysteria, so called. The most elaborate methods of physical and clinical exploration have failed to discover anything wrong with his knees. He intelligently appreciates the explanation that his trouble is purely an idea and tries to follow the suggestion based on this line, without avail. For he gave up business and devoted his attention to his knees. Naturally he has attention-pains.

A woman aged 40, of good general health, came to me complaining of pain over the region of the liver, which she had had for nearly three years continuously. It was a kind of pain which would be associated with some disturbance of the gall-bladder. She had been examined in every possible way by the best experts, who all reached the conclusion that it was, as they termed it, "nervous." She had nothing to gain by having the pain, and seemed earnestly to try to raise herself above it. She and a devoted husband worked together daily over the pain,

but it continued obstinately despite every kind of cure, until the time when I saw her. It then gradually disappeared under a course of educational therapeutics which was given to her. Her pain began from an acute local disturbance. It kept up through her attentions to it.

These examples illustrate some of the types of attention-pains which often baffle us.

The use of the word "hysterical," much used in this connection, conveys a very vague explanation to serious minds, and arouses generally indignant protest from the patients, who know perfectly well that the pains are not hysterical, or as they interpret it, "imaginary." And in fact the worst and crudest method of interpreting them is to say with finality that they are imaginary or hysterical. I will admit, however, that just as fetich-worship suits the savage, so the theory of a hysteria or the philosophy of mental science may sometimes answer for the ignorant.

NEURASTHENIC PAINS

There is such a condition as neurasthenia or nervous exhaustion, but it quite rarely exists by itself. It has certain painful symptoms connected with it which are real and due, it is to be supposed, to tired nerves, which means often persisting autotoxemia. The pains of the neurasthenics and of the constitutionally inferior are mainly headaches, occipital and frontal, and are associated with sensations of pressure and constriction or fulness and discomfort about the head. Pains along the back, such as occur in spinal irritation, are largely due to the condition of the muscle mass which supports the spine. There are also direct and reflex symptoms that come from tired hearts and stomachs and lazy intestines. These pains are described in a rational way, as a rule, and are usually recognized by the fact that they are increased by exertion, and lessened by rest.

The pains of neurasthenia, however, are apt to become associated with the attention pains, and an obsessive state sometimes develops on a neurasthenia.

DEPRESSION PAINS

The attitude of the morbidly depressed patient, who has pains, and especially of those who have that form of depression associated with anxiety, a malady allied closely to the melancholia of involution, is quite different, and the description of pains and suffering is given in more serious style. The patient says with shut jaw and serious look that he has not ceased to have pains in his knees for fifteen years; he has not slept for weeks; he has sensations of prickling, boiling, bursting, coldness and heat along the spine and knees which annoy him to a point beyond endurance. He says this with a weary, anxious look; the tears come to his eyes. His pains are more than real; they are frightening and agonizing.

No amount of reasoning has much effect on these patients, except for an hour or for the moment, for these sufferings are deep-seated and a part of their conscious life. They show you their hands, which seem to them hot or badly nourished and ask you to feel of them; they want you to examine the disturbed area and feel or see that there is something wrong in the tingling forearms, the drawing sensations about the knees, or the pulling sensations about the neck.

These are the patients who have the most curious and bizarre kinds of sensory complexes. One will tell you that he feels as though his legs were bursting, or as though his body was stuffed with pricking burrs. He has sensations about the head, not merely of pressure and constriction, but of some substance under the skin

which is twisting or jumping or crawling. He has eurous viseeral pains, such as "boiling in the stomach" and feelings of heat deeply seated within the trunk, or within the limbs. He has sensations of coldness as though there was a piece of ice on the back, or of heat like a band over the chest, or of pricking irritation over the shoulders or in the knees.³

The general character of these sensations would make one think that in the dysesthesias of melancholia, the protopathic nerves are especially affected, while in psychasthenic pains, it seems to be more the eperitic nerves—sensations of a finer quality and more definite character.

When the patient comes to the physician's office, and begins to say that he has hot and annoying sensations in the knees and burning irritation along the back, disagreeable and rather indefinite disturbances of sensation about the hands and feet; when he begins to show you his limbs and point out the places where he suffers, one can infer at once that he is dealing with a person who has a hypochondriacal depression.⁴

By carefully recording the descriptions of symptoms given by patients, one can after a few interviews construct a sensory syndrome. If this is once done and attached to the history, it saves much trouble, time and repetition. Besides, when the patient knows you have all his troubles typewritten, he ceases to talk so much about them, and it does him good, for he knows that he has had a complete mental catharsis.

If one were to interpret these sensations psychologically according to the scheme which is presented below, I should say that in the psychasthenic pains there has ceased to be any peripheral irritation. The neuritis is gone; the nerve injury is healed, and the only neural disturbance is a morbid change in some primary sensory center, like the optic thalamus, where sensory impressions are first received and distributed. In other words, there is slight or no disorder of the sensory nerves, but there is some disassociation and disorganization in the work of the higher sensory mechanism. But beyond this there has occurred disorder of attention; the patient's mind has become so fixed on this slight neural change that the threshold of consciousness is greatly lowered; and even slight neural disturbance keeps up an agonizing suffering. I would still insist that there is a neural change, and that the pains are not imaginary, but the neural disturbance is always a minimum, while the focusing of attention on it is at a very morbid height. This may be shown in the diagram (Fig. 1 at A). It means, of course, that in these cases the therapeutic attempt should be directed toward turning away the field of thought to other channels and reestablishing the proper associations.

On the other hand, in the pains and dysesthesias that go with the anxious depressions, there is probably present a real morbid condition affecting perhaps especially the protopathic nerves. These usually do not arouse

sensations in consciousness, but through conditions of autotoxemia, arteriosclerosis and the rheumatic and bad metabolic conditions, that usually accompany the period of involution, these nerves are irritated.

In addition to this the mind of the patient is depressed by his psychosis and made more sensitive and attentive to the inflow of sensory impulses. There is then both an increase in the stimulus and a lowering of the threshold of consciousness. These pains of the anxious depressives have a certain physical basis in the badly nourished and irritable nerves, and the alertness of self-attention which exists in anxious minds.

So we find that, in these cases, there is not much to be accomplished by attempting to divert the attention of the patients by therapeutic talks. They are relieved most by measures which improve the bodily condition—by rest, diet, fresh air and eliminatives.⁵

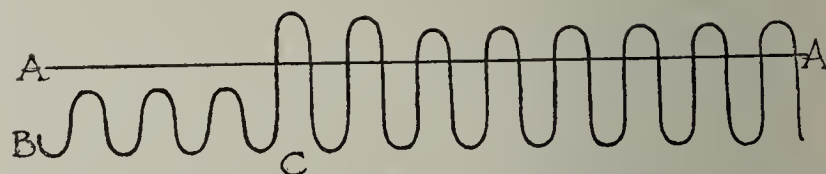


Fig. 1.—Diagram illustrating the conditions when a painful stimulus continues causing constant real pain. A, threshold of consciousness; B, waves of sensory stimuli; C, waves of abnormal and painful stimuli rising into consciousness.

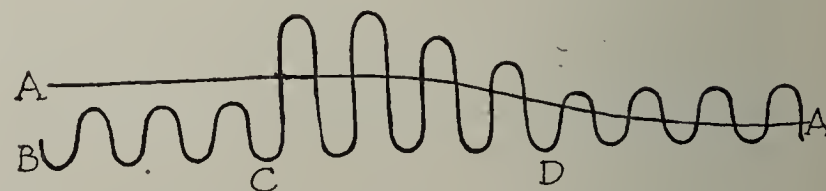


Fig. 2.—Diagram illustrating habit or attention pains. A, threshold of consciousness; B, waves of normal sensory stimuli; C, waves of abnormal sensory stimuli from trauma, inflammation, etc. At D the sensory stimuli have dropped to normal, but the threshold of consciousness has been lowered so that ordinary stimuli are felt as painful.

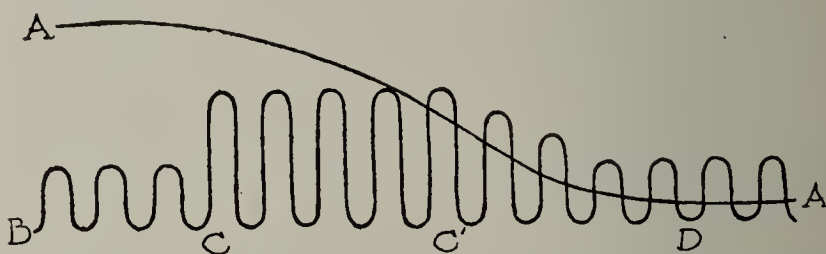


Fig. 3.—Diagram illustrating post-traumatic pains. A, B, and C, as in other diagrams. At C' the painful stimuli begin to cease, but the attention keeps the threshold of consciousness abnormally low and pain continues to be felt.

THE PSYCHOLOGY OF FUNCTIONAL PAINS

The accompanying diagrams and parts of the description have been prepared for me through the courtesy of Mr. Marshall.

The word "consciousness" is used in two ways: First, as an equivalent of *psychic existence as such*, as when we question whether the plants have consciousness, or say that stones have no consciousness; second, as the equivalent of *awareness*, which is a narrow phase of

3. Depression Pains.—The following are actual descriptions given by different patients: feeling as if a piece of ice was between the shoulders with paresthesia and stiffness of neck; cold sensation in small of back as if it had shrunk up; burning pain on top of head; burning pain in the back; sensations of coldness of certain parts of the body; sense of heat and fever over chest and neck and head; sensations of burning, smarting like bee-stings over head, arms and back; sensations of body being filled and stuffed with pricking burrs; a feeling as if fine needles were sticking out of the scalp, or as if something were working and wriggling under the scalp; a feeling as if a ton-weight were pressing on the top of the head; hot hands and feet; dysesthesias of legs, arms and epigastrium; pricking over sides of chest and top of head, which becomes actual pain when worried.

4. The custom of internists is to ascribe them to arteriosclerosis, a custom not founded on sound data.

5. There has been a great deal said and written about the pains and dysesthesias of arteriosclerosis and of the gouty and arthritic states. Many symptoms, such as cold sensations, heat sensations, numbness and paresthesias of the hands and feet, are due in part at least to those causes. The burning feet and hand in diabetes and peripheral neuritis must be recognized, the dysesthesias (very rare) in central lesions, must be considered. But in these there is lacking the peculiar mental state. As for arterial sclerosis, one sees it repeatedly in the most intense degrees without the patient complaining of those sensory syndromes which go with neurasthenic, obsessive and depression states; hence, I do not accept the explanation commonly given of arteriosclerosis as a cause of the many pains and dysesthesias complained of by people who really have such vascular condition; the psychic factor is the important and real one.

psychic existence as such. Thus, when one forgets, one is likely to say that he is not conscious that he did so and so.

The term "threshold of consciousness" is in common use. It indicates that there is a something below this so-called threshold. What we really mean is that we have a threshold of awareness within our psychic existence. All that is within the consciousness of any moment and that is below the threshold of awareness is part of what Marshall calls subattentive consciousness, and is what is generally called the subconscious. There are many different thresholds of awareness, and these thresholds shift sometimes suddenly. Such a shifting takes place when we wake up. If we represent the threshold of consciousness in any moment by an approximately straight line, then we may represent special mental items by waves as in Figure 1: the rise of each wave above the level of the threshold indicating the degree of its emphasis.

We suppose now, in Figure 2, the normal waves of stimuli are abnormally increased at C by some injury or inflammation. The waves of stimuli pass up above the threshold of consciousness and pain is felt. After a time the injury is healed and only normal sensory stimuli are propagated, but, the attention of the patient being directed to these stimuli, the threshold of consciousness is lowered and the pain is still felt. We have now the psychic, or attention or habit pains.

Figure 3 illustrates a somewhat similar condition. In the heat of battle or excitement of accident, the threshold of consciousness is greatly raised, *quoad* the sensory stimuli from an injured part. No pain is felt until later, when quieter and more normal conditions are brought about. Then at C¹ the real pains begin to be felt. They excite the attention of the patient and the threshold of consciousness is lowered at D and pains continue to be felt even when the injured part is healed. These are the pains of the traumatic psychoses.

SUMMARY

A more careful study should be made of the psychology of patients who complain of chronic pains and dysesthesias not due to objective causes. The study of elementary psychology in the medical schools should be obligatory. Clinical neurology will not make much further progress without psychology.

I have collected and analyzed the symptoms of pains and dysesthesias not directly due to organic disease, and have here tried to group them according to the neurosis or psychosis.

1. I find a certain kind of pains characteristic of simple neurasthenia.

2. Also pains, etc., of psychasthenia and the obsessions are peculiar to that psychosis. These perhaps involve especially the epicritic nerves. The mental attitude and reactions of the patient have to be considered. The pains of the traumatic psychoses mostly belong in this class.

3. The pains of the anxious and involutional depressions are especially numerous, bizarre and characteristic. They form for each patient a sensory-complex, and they seem especially to involve the protopathic nerves.

I interpret the symptoms of pains, etc., in terms of the psychology of Marshall. These are not imaginary pains, because there is a thoroughgoing parallelism between mind and body and there can be no morbid mental change without a corresponding neural change.

Psychic pains are called "attention-pains," and the over-emphasis in activity of minor psychic symptoms is invoked to explain their existence. There is not yet any simple test by which we can tell surely when a pain is not a real, but an attention or habit pain. A thorough study of the psyche and soma of each patient and a knowledge of the characteristic pains in the various groups will clear up most cases.

53 West Fifty-Third Street.

MIGRATION BY AMEBOID MOVEMENT OF SARCOMA CELLS GROWING IN VITRO

AND ITS BEARING ON THE PROBLEM OF THE SPREAD OF
MALIGNANT GROWTHS IN THE BODY*

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NEW YORK

It is the object of this note to describe certain ameboid phenomena observed in the cells of rat and mouse sarcomas when cultivated *in vitro*, and to suggest that these phenomena probably play an important part in the infiltrative and metastatic growth of tumors.

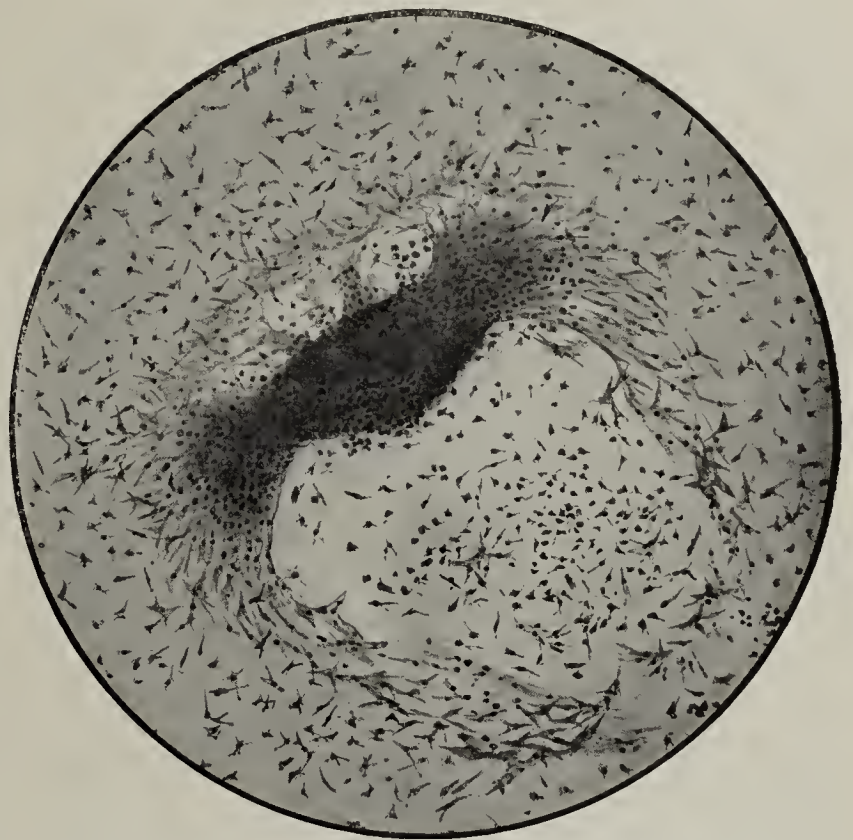


Fig. 1.—The edges of the sarcomatous tissue are beset with long, projecting sarcoma cells, and the adjacent plasma contains many isolated cells with remarkably irregular outlines.

We have employed in this study Burrows'¹ modification of Harrison's² technic, as applied by us³ to rats and mice.

Since rat and mouse sarcomas do not differ essentially from one another in their behavior when cultivated *in vitro*, we shall confine our description, for the sake of clearness, to the various changes observed in the cells of a mouse sarcoma growing in mouse plasma. The edges

* From the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York City (the George Crocker Special Research Fund).

1. Burrows, M. T.: The Cultivation of the Tissues of the Chick-Embryo Outside the Body, *THE JOURNAL A. M. A.*, Dec. 10, 1910, p. 2057.

2. Harrison, R. G.: The Outgrowth of the Nerve Fiber as a Mode of Protoplasmic Movement, *Jour. Exper. Zool.*, 1910, ix, 787.

3. Lambert and Hanes: Growth in Vitro of the Transplantable Sarcomas of Rats and Mice, *THE JOURNAL A. M. A.*, Jan. 7, 1911, p. 33.

of a freshly implanted piece of tissue, examined under the microscope, are sharply defined and free from projecting cells. The tissue itself looks compact and homogeneous. Twelve hours later the edges of the tissue are beset with long, projecting cells, and the adjacent plasma contains many isolated cells with remarkably irregular outlines (Fig. 1). The original piece of tissue is no longer uniformly dense and compact, but has become thinner and more translucent. The number of cells in the surrounding plasma increases now, from hour to hour, largely at the expense of the original tissue, which gradually grows thinner, until at from thirty-six to forty-eight hours, its volume has decreased to one-half or one-third its initial size. Indeed, the original mass of tissue may become resolved completely into its component cells, which pass into the plasma. Mitoses are seen, both in the original piece of tissue, and in the cells which have migrated from it.

The exact mechanism of this migration of sarcoma cells is observable with ease under the higher powers of the microscope. They pass from the tissue to the plasma



Fig. 2.—The sarcoma cells migrate from the tissue to the plasma by ameboid movement. Pseudopods are thrown out on all sides in characteristic fashion.

by ameboid movement. Pseudopods are thrown out on all sides, and these increase or decrease in size in characteristic ameboid fashion (Fig. 2). The ameba itself scarcely furnishes more exquisite figures than do sarcoma cells. There is one difference however; the movements of amebas are much more rapid and active. This may be due to the rather firm consistency of the coagulated plasma in which the sarcoma cells are living. Fat granules appear very early, and it is quite interesting to watch them stream into a newly formed pseudopod. One is reminded forcefully of the movements of erythrocytes and other inclusions in the cytoplasm of the *Entamoeba histolytica*. If a specimen showing active ameboid movements of the cells is removed from the warm chamber, and examined under a microscope at room temperature, the majority of the cells retract their pseudopods and become spherical.

The phenomenon of ameboid migration of sarcoma cells growing *in vitro*, seems to us readily applicable to

the explanation of the spread of malignant growths in the tissues of the body. Carl Lewin⁴ has urged, on theoretical grounds, the necessity of such a conception. A critical discussion of the subject of tumor metastasis cannot be attempted at this time, but we should like to point out that the conception of ameboid migration of tumor cells explains most reasonably the invasion of tissues, lymph-spaces, and lymph-vessels and blood-vessels by malignant growths. It is especially helpful as an explanation of the dissemination and localization of cancer in serous cavities.

437 West Fifty-Ninth Street.

DUODENOJEJUNOSTOMY

FOR THE CURE OF POSTOPERATIVE REGURGITANT VOMITING OF BILE AND PANCREATIC JUICES, FOLLOWING GASTRO-ENTEROSTOMY

P. S. P. ST. L. MONCURE
NORFOLK, VA.

Necessity is the mother of invention, and it was necessity that forced me to "dig up," so to speak, the ascending or terminal portion of the duodenum and "buttonhole" it to the distal portion of the jejunum in the case of a patient operated on six weeks previously for ulcer of the stomach, in which a posterior, no-loop gastro-enterostomy had been performed. The operation, though it relieved the original symptoms entirely, yet by some spur or kink occurring at the anastomosis, caused, about every second day—sometimes oftener—a profuse vomiting of biliary and pancreatic fluids. This vomited material rarely contained any food; and, although great quantities of fluid would be vomited at one time (at least a quart sometimes), it did not accumulate in the stomach, as lavage just before vomiting commenced would often fail to bring any of it away—the water returning clear—when, in less than an hour, bright yellow bile with no food particles would be vomited.

The operation which I performed for the relief of this regurgitant vomiting is not necessarily tedious or long. I believe that it will be performed more frequently in the future, primarily perhaps through election, to prevent the possibility of regurgitant bile-vomiting, and secondarily—as was my case—through necessity. The operation consisted of anastomosing the ascending or terminal portion of the duodenum—just as it turns upward—to the jejunum, for the drainage of bile and pancreatic fluid. The operation is best described by citing the case:

History.—Mrs. S., aged 28, white, married several years, having no children, formerly a seamstress, came to me July 5, 1909, with the following symptoms: pain in epigastric region; periodic vomiting some hours after eating; emaciation; history of vomiting for fourteen years; blood said to have been vomited years ago; none in recent years. The patient was having a temperature every day from 99 to 100.5 F., she had irregular chills, and vomited a great deal. She improved somewhat on stomach lavage, diet, and drugs, but after three weeks' trial, consented to an operation. Lavage was kept up until the operation was performed, July 30. I did the no-loop operation of posterior gastro-enterostomy, as described by Moynihan, the ulcer being at the pyloric end of the stomach. The patient recovered very rapidly and left the hospital in less than two weeks, vomiting in this time only once or twice. She very soon, however (in a week or two), began to vomit great quantities of clear bile. The patient would vomit a

4. Lewin, Carl: Die bösartigen Geschwülste, 1909, Leipzig.

great deal, and then have a period of rest for a day or two, especially if given a purgative. She never vomited food; had a most excellent appetite, and would become ravenously hungry just after vomiting the bile. I began to irrigate the stomach again every morning before breakfast, but seeing no benefit after ten days' trial, I finally suggested another operation which the patient, after a few days more of vomiting, urged me to perform at once. This was done October 9, sixty-nine days after the first operation.

Operation.—I went in to relieve the vicious circle, and intending undoing my work on the stomach, if I could not see any other way to do it. Adhesions were so dense around the site of my first operation that it would have been very difficult to undo the work. The engorgement of the bile and other fluids in the duodenum, however, made it stand out very prominently, so I at once decided to work up this ascending portion of it, and make a lateral anastomosis with the descending or distal portion of the jejunum, about 2 or 3 inches below my first operation. I used a Roosevelt clamp and had no great difficulty in doing the anastomosis. Barring a rather protracted period of nausea and retching following the operation,

Vomiting of bile from any cause can be safely and comparatively easily corrected without having to undo the work on the stomach—when it has been performed—which work may, indeed, be serving a good purpose. The operation is more difficult than a simple gastro-enterostomy, yet it is not a desperate operation and should not take any longer than gastro-enterostomy. It is an operation that will not be performed very often, as the necessity for it is rare, and indeed will become more so; but it can be done; and with marked benefit to the patient. I know of one or two patients now walking around the country on whom gastro-enterostomy has been performed, and who suffer so much from vomiting or other causes, that it would be well for them if they had a little safety-valve to let that bile directly through from the duodenum into the jejunum.

I hope it will be my pleasure some day to hear that some one else has tried the operation with the same happy result.

57 Granby Street.

THE DIAGNOSIS OF MAMMARY TUMORS

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PHILADELPHIA

Twenty years ago I felt sure that a differential diagnosis between benign and malignant tumors of the mammary gland could be made with reasonable certainty. An increasing experience has taught me year by year the fallacy of this opinion, which, I may say, was at the time quite orthodox. Then benign growths were considered to comprise less than 10 per cent. of all mammary neoplasms. We now know that this estimate of Gross and others was far too small, just as we also appreciate that their estimate of sarcomas was much too large. To-day we increase the number of benign growths measurably and restrict the number of sarcomas greatly. Gross estimated that non-carcinomatous growths comprised 18.27 per cent. of mammary neoplasms, and that they were about equally divided between benign growths and sarcomas—9.52 per cent. of the former and 8.75 per cent. of the latter.¹

I have carefully analyzed the statistics of 5,000 cases of mammary tumors, taking them largely from German clinics where accuracy was likely to obtain, and as a result have found that 16.5 per cent. were benign and that 2.7 per cent. were sarcomas. Thus we find 19.2 per cent.—slightly more than Gross found—non-carcinomatous, but, unlike him, find that sarcomas comprise only a very small part of such lesions and may, indeed, be considered as rare in this situation.²

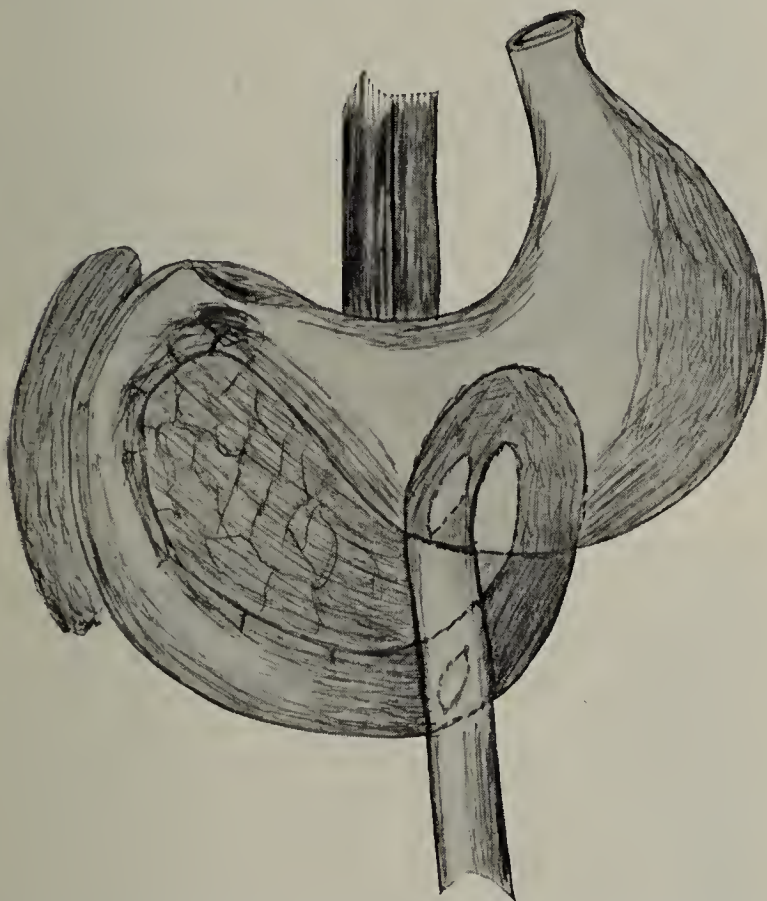
Bloodgood,³ in an analysis of 694 mammary neoplasms in the Johns Hopkins Hospital, encountered 14 sarcomas, or exactly 1.5 per cent, a still smaller proportion than we found.

It is of the greatest importance to settle this question before taking up the differential diagnosis, as it is my belief that the comparative rarity of sarcoma in the breast is not generally appreciated. Its infrequency in

1. Gross, S. W.: Tumors of Mammary Gland, 1880, Appleton & Co.

2. Rodman: Diseases of the Mammary Gland, 1908, P. Blakiston's Son & Co.

3. Kelly and Noble: Gynecology and Abdominal Surgery, 1908, ii.



Duodenojejunostomy after a gastro-enterostomy, the ascending portion of the duodenum being joined by a lateral anastomosis with the jejunum 2 to 3 inches distant from the gastrojejunostomy.

or rather, the anesthetic, which she took poorly, the patient made a rapid recovery. She has never vomited any bile since, and fourteen months after the operation was in most excellent health, having fattened about 35 pounds.

The points to commend the operation are these: The possibility of draining the duodenum directly into the jejunum—a safety-valve, so to speak, in the operation of the gastro-enterostomy—which can be done either at the time of the gastro-enterostomy operation, or later if it becomes a necessity. Either a suture, side-to-side anastomosis may be performed—as was done by me—or a Murphy button may be used. I prefer the former, however. I have performed posterior gastro-enterostomy since, but did the operation as described by W. J. Mayo, and, having no subsequent vomiting I have had no opportunity of performing again the operation described above. I have since twice operated on the cadaver, however, and had no difficulty in pulling a loop of duodenum through the peritoneum covering it, and anastomosing it to the jejunum.

this organ is in marked contrast to its frequent occurrence in many others. At the same time it is now appreciated more than ever before that many of the benign tumors tend markedly, in time, to undergo malignant transformation; and so much so is this the case with some of them, notably the papillary cystadenomas, that they should be looked on from the very beginning as potentially malignant.



Fig. 5.—Photograph of patient shown in Fig. 2. Left nipple shows marked retraction, in association with abnormal involution.

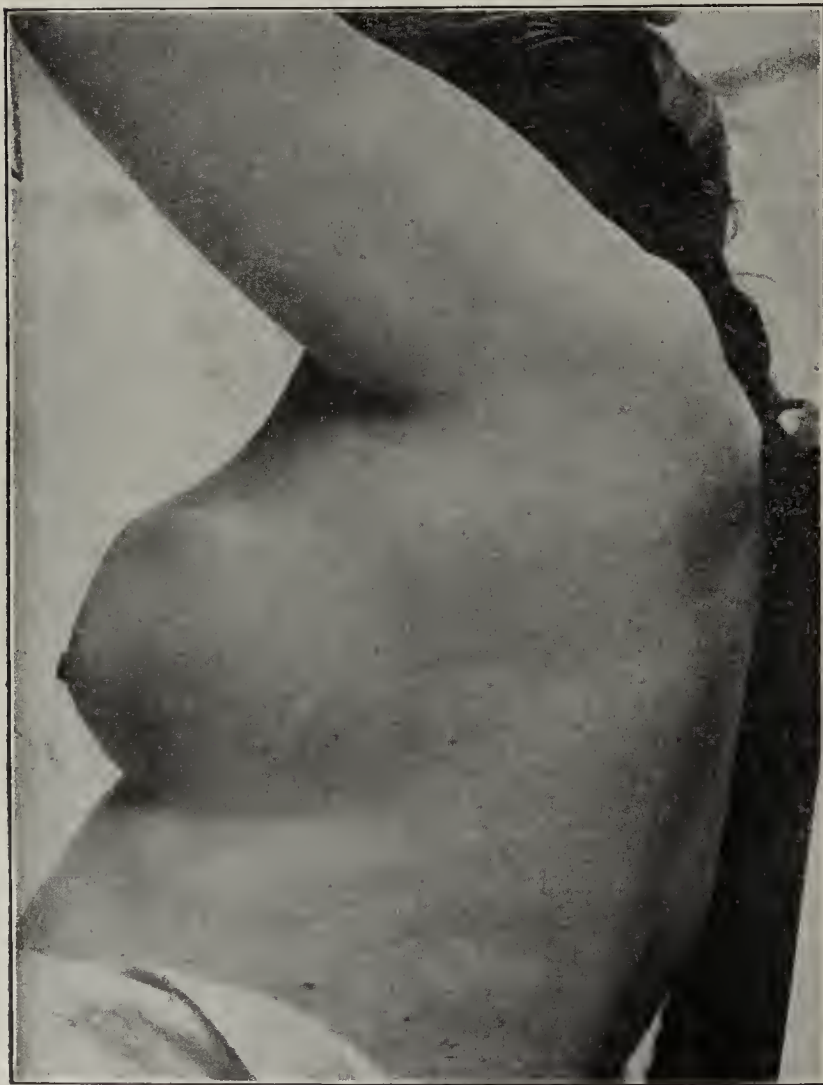


Fig. 7.—Side view of growth shown in Fig. 6.

ABNORMAL INVOLUTION

Another condition of the greatest importance and frequency has been given much attention during recent years, and its careful study has shown that it manifests a decided tendency to result in carcinoma. I refer to abnormal involution, or, what is perhaps a better term, fibrous and glandular hyperplasia with retention cysts (Whitney), or senile parenchymatous hypertrophy (Bloodgood). It has also been called Schimmelbusch's

disease, the disease of Reclus, general cystic disease of the breast, etc. Warren, in a careful analysis of his series, found resulting or coincident carcinoma in 13 per cent. of his cases; Greenough and Hartwell in 10 per cent. of theirs; other authors have made a much higher estimate, some as high as 50 per cent. This condition is most likely to be encountered between 40 and 50 years of age, though it often occurs much earlier and not infrequently later. Thrice within a year I have encountered it resulting in malignancy in women aged 36, 38 and 41 years. All the patients were unmarried. It is far more



Fig. 6.—Growth clinically diagnosed as a sarcoma in a woman 47 years old. Pathologically diagnosed as either a myxoma which has undergone sarcomatous change, or benign growth.



Fig. 8.—Periductal fibroma (fibroadenoma), the largest the author has encountered. In size and shape it resembled a goose egg. Photograph showing tumor after removal shown on page 112 of the author's work on Diseases of the Breast.

likely to occur in maiden women, married women who are sterile or in mothers who have not suckled their children. All parts of the breast may be involved, but in my experience, if the condition is limited, as it sometimes is, to a single quadrant, it is most likely to be the lower and outer one. Occurring usually at the cancer age, having clinically many of the signs of malignant dis-



Fig. 1.—Acute cancer in a patient 45 years of age. The color of the skin is accurately portrayed in the drawing, also the indentations resembling the skin of an orange.



Fig. 2.—Typical retraction of the nipple, also a watery discharge therefrom, in a patient 58 years of age with abnormal involution. The discharge at times is sanguinolent.

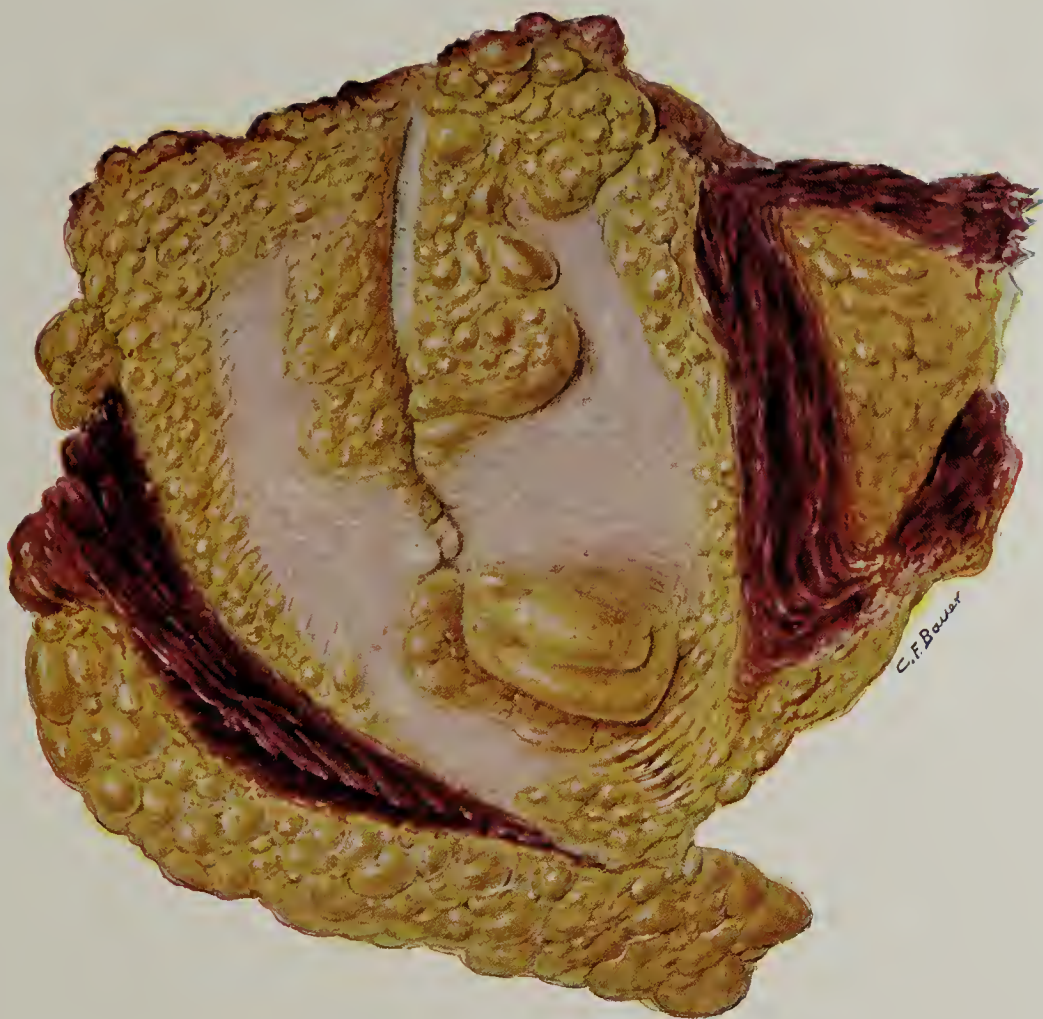


Fig. 3.—Cross-section of breast after removal. No evidence of malignancy. Typical abnormal involution.



Fig. 4.—Cross-section of sarcoma of the breast which in places has undergone marked cystic degeneration. The case is interesting from the fact that it has been considered by some excellent microscopists as showing carcinomatous spots also.

case, its recognition becomes a matter of the first importance. More than any other condition will it, in my judgment, occasion embarrassment to the diagnostician and perplexity to the surgeon even at the time of operation. Usually its nature will be revealed after incision and macroscopic examination, particularly if it has advanced to what Bloodgood has described as the adenocystic stage, or where there are numerous small, almost microscopic cysts. But in the first or hyperplastic stage nothing short of the microscope will positively reveal its nature. I shall subsequently refer to it more at length.

I would again emphasize the danger of coincident or resulting carcinoma, and that it is too great to be assumed until every safeguard has been taken. In the cases at the Hopkins Hospital associated with carcinoma, fourteen in number, all were, according to Bloodgood,³ of the adenocystic type. This is most suggestive and should influence materially the treatment.

The several forms of mastitis, pyogenic and non-pyogenic, will not infrequently embarrass even the most careful and expert diagnostician. So great a surgeon as von Langenbeck amputated the entire breasts in at least two patients without suspecting that he was dealing with a simple inflammatory lesion (Keen⁴). All have encountered instances of mastitis in nursing mothers which for a time at least were puzzling, particularly when occurring during the first three or four months of lactation.

ACUTE CARCINOMA

I would here call attention to acute carcinoma of the mammary gland, which so closely simulates inflammation that Volkmann has described it under the name of carcinomatous mastitis. It usually begins as a diffuse rather than a discrete process, in this respect differing from the ordinary forms of carcinoma. Not infrequently has it been associated with pregnancy. Whether such be the case or not, it runs a remarkably rapid course, oftentimes destroying life within six months. The entire gland is enlarged, hard, tender, and the skin covering may be red and edematous. The symptoms of cachexia manifest themselves early and general metastases occur quickly.

I have encountered four well-marked instances of this affection during the past eighteen months. Three of them began as diffuse processes and had been treated with local applications with the belief that they were abscesses. One of them was actually incised. One of these occurred in a woman 45 years of age who had not been pregnant for twenty years. She was treated for several weeks in the out-patient department of the Pennsylvania Hospital, where, I assume from her statement to me and the nature of the local treatment employed, that a diagnosis of mastitis had been made. When I saw her later a diagnosis of acute carcinoma was evident. The breast was at least one-half larger than its fellow, the skin covering red, edematous and tender. The glands of the axilla were extensively involved and there were numerous shot-like bodies in the skin between the nipple and axilla. A complete operation was at once performed, but more with the hope of giving temporary relief to the intense pain from which the patient was suffering than with any expectation of a permanent cure. She lived more than six months after operation, dying from metastases to the lungs, liver and opposite breast.

The second case I saw at the clinic of Dr. W. L. Estes, at South Bethlehem, in a stout woman about 45

years of age. The appearance of the breast was almost identical with that in the case just described. It was explored under the belief that it was inflammatory, but the exploration was at once followed by a complete operation. I have no records of this case, as it occurred in the practice of another surgeon.

The third case I saw November, 1909, in a woman aged 35. She noticed, four months previously, when she was one month pregnant, a small lump in the upper and outer quadrant of her left breast. At the time when she first consulted me she was five months pregnant and the disease had advanced so rapidly that the entire breast was enlarged, tender and involved throughout. If her statement that it began and for three months remained as a small lump in the upper and outer quadrant of the breast can be relied on (and I am not disposed to question it, inasmuch as the breast was harder and more involved at this point) it indicates that the disease sometimes begins as a discrete process. S. W. Gross reported a similar case.¹ There were several shot-like bodies in the skin over the outer hemisphere of the affected breast.

I explained to her husband, a dentist with medical training, that the outlook was a gloomy one, and that the operation promised little further than temporary relief from her pain, which was marked, and improvement in her mental condition. She was greatly distressed in mind, worrying constantly about her condition. Her husband insisted on an operation, which was performed in the Presbyterian Hospital. She experienced entire relief, mental and physical, for nearly two months.

Later I was called in consultation by Dr. W. R. Nicholson, who had been engaged for her accouchement. She was then suffering great abdominal pain due to the conjoint pressure occasioned by a very much enlarged liver and a uterus seven months pregnant. He believed, and I concurred in his opinion, that a premature delivery would soon be necessary. This was brought on a fortnight later, the patient dying about two months subsequently.

On May 17, 1910, I operated in another and most typical case of acute cancer, which had been seen and referred to me by Drs. Darnell and Stewart of Atlantic City. The patient was 45 years of age, married, with one child 24 years old. She had not been pregnant since, but had had an abscess of this breast after her child was born. Attention was not attracted to the breast until three weeks prior to operation, when it was seen to be enlarged somewhat and the site of dull pain and throbbing at night. At the time of operation the integument was distinctly reddened and presented the most characteristic orange-skin appearance that I have ever seen. It is quite well portrayed in the colored drawing herewith shown (Fig. 1).

Of the four cases of acute cancer that I have encountered in the past eighteen months only one was associated with pregnancy. In all of the others the patients were about 45 years of age and none of them had been pregnant for many years.

I have partial records of other cases of acute cancer seen and reported by Prof. Edward P. Davis and others. I am sure that the condition is more common than has been hitherto thought, and that it is perhaps as frequent in non-pregnant as it is in pregnant women.

DIFFERENTIATION OF CYSTS

Difficult as it is to diagnose the several conditions already mentioned, it is more difficult to differentiate between benign and malignant cysts, with or without a

4. Keen: Amputation of the Female Breast, Cleveland Med. Gaz., December, 1894.

discharge from the nipple. The character of the discharge, when present, is by no means the aid to diagnosis that I formerly thought and that some others still think it to be. A scanty, thin, sanguinolent discharge is certainly suggestive of carcinoma, whereas a mucoid one is evidence of a benign growth. Thick, granular contents always suggest malignancy. A discharge of blood or markedly bloody fluid strongly suggests an intracystic papilloma. The latter condition, though originally benign, shows a marked tendency to undergo malignant change. Unless a discharge of blood can be clearly shown to have resulted from an intracystic papilloma the malignancy of the cyst should be assumed and the entire breast removed. A more or less blood-stained fluid, however, is now and then found discharging from the nipple in association with abnormal involution.

I have encountered several cases of this nature, one that of a colored woman, aged 39, kindly sent in to my service at the Presbyterian Hospital by Dr. Edward B. Hodge on December 1, 1909. She was married, had borne five children, the youngest being 11 years of age. There had for two years been a watery discharge from the left nipple, which in time became yellow and afterward noticeably bloody. The breast was explored by the plastic resection method of Warren. A rather large cyst was found behind the nipple. In addition there were numerous shot-like cysts throughout the gland, which caused me, in spite of the frozen section report, which indicated the part examined to have been benign, to sacrifice the entire breast. It was a typical case of abnormal involution. Had there been only the single cyst behind the nipple I should not have resorted to such drastic treatment, but the associated minute cysts scattered throughout the breast caused me to feel that the patient's safety demanded removal of the entire breast.

I recently encountered in a widow, aged 58, a typical case of abnormal involution with a discharge from and *marked retraction of the nipple*. The discharge, which began seven or eight years ago, was first watery, later on becoming yellowish, and for the last year has been at times bloody. The retraction of the nipple has, so she states, been evident for two years, but during the last six months has been marked. Notwithstanding the discharge and retraction of the nipple, a clinical diagnosis of abnormal involution with cysts was made and complete removal of the breast advised. It was practiced on April 21. The condition before operation is well shown by Figure 2. The macroscopic appearance of the removed breast is also shown in the colored drawing (Fig. 3).

The microscopic report confirms the clinical diagnosis, showing no malignant change whatsoever. The case is interesting on account of the discharge from and marked retraction of the nipple in association with abnormal involution.

It is of the utmost importance to recognize cancerous cysts before or at the time of operation, for if such is not the case the prognosis is extremely bad. Both Halsted⁵ and Bloodgood³ positively state that not a single permanent cure has resulted from operations performed in the Johns Hopkins Hospital when the cancerous nature of the cyst was overlooked at the time of the first operation. Even though soon afterward a second and complete operation was done, the ultimate result was invariably bad.

I made such a mistake in September, 1906, when operating on a patient with a very large cyst situated in the

lower and outer quadrant of each breast. Each cyst was as large as a tangerine orange and contained several ounces of a thin, brownish fluid. My pathologist was not present prepared to make frozen sections, having misunderstood the time of our engagement. The character of the fluid aroused my suspicions and almost all of each breast was removed. The muscles, however, were not disturbed, nor were the axillæ cleared. I confess that I was somewhat surprised to receive Prof. Joseph MacFarland's report, ten days after operation, stating positively that each growth was a medullary carcinoma. Feeling it my duty to suggest a second and more thorough operation, I candidly explained the facts to the patient, admitted my mistake and requested the privilege of doing a second operation. This was declined. I am happy to state that the patient when examined for me by her physician, Dr. John B. Cassidy, of Burlington, N. J., was reported as perfectly well generally and free from recurrence locally. It is nearly four years since the operation.

RETRACTION OF NIPPLE

Retraction of the nipple is most significant, but not, as often stated by some high in authority, *pathognomonic* of carcinoma. In the first place it will be encountered in only 52 per cent. of undoubted cancers—those which are situated behind or sufficiently near the nipple to compress and pull on its trabeculæ; in the second place, retraction sometimes is present, in more or less degree, in perfectly benign conditions—as, for instance, congenitally depressed nipples; in patients who have had mastitis, with or without abscess; those with marked hyperplasia of the connective tissue in connection with abnormal involution; and in some who have benign tumors. Gross found the nipple retracted in 5.22 per cent. of non-carcinomatous growths. It is, however, in the latter, and indeed in all non-carcinomatous conditions, more or less mobile and rarely if ever infiltrated. In malignant conditions it is both immobile and infiltrated.

FIBROMA AND MYXOMA

It is manifestly impossible for a paper of this character to describe accurately each mammary growth. I shall only refer to the most common benign neoplasms, the adenofibroma or periductal fibroma and the periductal myxoma.

The periductal fibroma is either solitary or multiple, more often the former, and is not infrequently found affecting both breasts at the same time. It is situated indifferently in all parts of the breast. If it is more obnoxious to any portion of the gland it would seem to be the upper hemisphere. It is freely movable, encapsulated, occasionally lobulated, and now and then is the site of moderate discomfort, if not actual pain. In a few instances I have seen rather marked pain associated with very small fibromas. It is said to follow trauma in from 10 per cent. to 25 per cent. of cases.

Periductal myxoma is also common in women under 30, but occurs more frequently than does fibroma in older women. It also attains a greater volume, is of more rapid growth and is less apt to be accompanied by pain than fibroma. It is somewhat elastic to the touch, is always lobulated and is more frequently multiple than fibroma.

I have recently operated on a woman 47 years of age for such a growth, which was the largest tumor of this character that I have ever seen. It was of two years' duration. Its growth had been rapid during the past six

5. Halsted: Tr. Am. Surg. Assn., 1907.

months, and was accompanied with some pain. The appearance of the breast was so suggestive of malignancy that it was pronounced inoperable carcinoma by a prominent surgeon of this city; hence, he declined to operate. Figures 6 and 7 show the appearance of the breast before operation. This case shows the fallacy of depending on the age of the patient as a guide to diagnosis. The patient's age, and the duration and size of the neoplasm with the discolored skin, certainly indicated the growth to be probably malignant. The absence of enlarged axillary and supraclavicular glands led me to operate. I had made a clinical diagnosis of sarcoma. The pathologists differ as to its microscopic appearance, one maintaining that it is a myxoma which has undergone sarcomatous change, the other denying that there is evidence of malignancy.

DIAGNOSIS

Enough, it seems to me, has been said concerning the several varieties of cysts. Suffice it to say that in the majority of instances they cannot be accurately diagnosed clinically and their true nature will be revealed on exploration and macroscopic inspection or by means of only frozen sections.

The most reliable evidence of incipient cancer will be furnished by an examination of the entire breast after comparing it with its fellow. If there is atrophy of the superficial fascia over a mass, however small, and if in addition there is dimpling of the skin, however slight, over it, a diagnosis of cancer is reasonably certain, provided one can eliminate a previous mastitis. To detect this atrophy of the superjacent fat, and especially the dimpling or puckering of the skin, over a mass which may or may not be distinctly felt, is not easy if only a cursory examination be made. It is particularly difficult in small, deep-seated retromammary growths. In such circumstances pulling the breast forward with both hands will often exaggerate and make evident dimpling of the skin, and also perhaps retraction of the nipple, when such signs had not hitherto been elicited. A better test in my judgment is to move the breast freely, making it take the widest possible excursion, when the attached skin above is certain to be pulled on and to show noticeable dimpling if there has been any shortening whatsoever of its trabeculae. In tumors situated superficially, the corrugated or orange-like skin may be either apparent or made so by pinching the skin between the thumb and fingers. Palpation is of the very greatest value. A benign growth feels more or less soft, smooth, circumscribed, encapsulated, and movable; carcinoma is hard, irregular, non-encapsulated, infiltrating, and immovable. Not infrequently are carcinomas movable for a time, but in my experience this is exceptional. Recently I saw, in consultation with Dr. L. W. Steinbach and Dr. David Reisman, an unmarried woman, upward of 40, with a small, movable tumor, situated in the inferior and inner quadrant of the gland. It was extremely low down, growing from the periphery of the breast. Its nature was evident macroscopically, and the microscope showed it to be a typical scirrhous carcinoma. Sometimes, a better impression as to the nature of the growth will be furnished by palpating with the flat hand, pressing the breast firmly against the costal wall, rather than by using the fingers alone.

In conclusion, I wish to state positively my conviction that no one, however skilled, experienced, or careful he may be in his examination or in eliciting the history of the case, can safely determine the nature of a lesion

before operation in more than 75 per cent. of his cases. In the remaining 25 per cent. *at least* either diagnostic incision or the use of frozen sections will be necessary. There is no doubt but that one of experience in such lesions will, as a general rule, be able to recognize them macroscopically, and it is very much better to do so, when possible, as it does away with the necessity of having present an experienced pathologist with his necessary apparatus. I maintain, however, that it will be only the very experienced surgeon, and moreover, one who has had considerable laboratory experience, who will be able to recognize benign and malignant growths with sufficient accuracy to warrant him in employing or withholding radical operation. It can usually be done in solid growths, but cannot be done with cysts, and the difficulty is greater in abnormal involution.

Macroscopically, periductal fibroma presents a distinct fibrous capsule. The tumor is rather hard and on section the surface is pinkish-white in color, especially in young tumors. In those which have remained in the breast for some years, the color is more apt to be white. The knife meets more resistance in cutting these growths than in sectioning normal breast tissue. There is occasionally slight lobulation. The cut surface is convex. These tumors rarely attain large size, though I have removed one as large as an orange from the upper and outer quadrant in a woman four months pregnant. The method of Warren was followed. Subsequently the child nursed this breast. The patient called to see me recently, four years after operation, to report herself as well and to thank me for sparing her breast.

Figure 8 represents very well the appearance of the breast before operation.⁶

A periductal myxoma also presents a fibrous capsule. To the palpating finger there is a more or less characteristic elasticity. The growth sections easily and the cut surface is distinctly lobulated. The glistening myxomatous lobule projects beyond the ring-like depressions of the firmer connective tissue.

The gross pathology of abnormal involution depends on the stage of the process. The early changes are those of hyperplasia. The affected breast is probably slightly larger than its fellow. It is firmer, but not usually uniform in this firmness. When cut, the breast is found to contain an excess of connective tissue, although the parenchyma is also increased. There will nearly always be minute cysts found here and there, no matter how early the process is discovered. Later on, these tiny cysts dilate, and then the cystic stage may be said to have been reached. The thickened areas are not so hard as those characteristic of scirrhous carcinoma, and do not show the same tendency to infiltrate the surrounding fat. The color is whiter than carcinoma. The lymph-nodes may be somewhat enlarged, but do not show the appearance typical of cancer.

It is exceedingly difficult to differentiate abnormal involution from scirrhous carcinoma, and in fact, it is my opinion that it frequently cannot be done without the aid of the microscope. Scirrhous carcinoma has certain characteristics that should be recognized from gross appearances. It usually begins as a more or less localized area of intense hardness, with the characteristic adhesions to skin and muscle, with, frequently, retraction of the nipple. On section, the tissue cuts with increased resistance, but it is perhaps not so difficult to section as an area of abnormal involution. The color

6. The appearance of the tumor itself after removal is shown in Figure 20, page 112, in my book on Diseases of the Breast.

is distinctly gray, a contrast to the white normal breast, and dense strands of connective tissue may be seen running between yellowish streaks composed of epithelial tissue. The cut surface retracts after sectioning. The mass can be seen to have no definite limitations, but to be sending infiltrating processes in various directions. Of course, if there have been metastases to the lymphatic glands in the axilla, the diagnosis of malignancy becomes more certain. Metastases may be recognized in general by large, white, firm glands which, if carefully examined, however, will show some remaining portion of the normal gray lymphoid tissue.

FROZEN SECTIONS

I am fully aware that some excellent microscopists more or less discredit the reliability of frozen sections and do not think freshly stained as reliable as fixed specimens. I am not sufficiently experienced in microscopy to discuss this subject. I do know, however, that in more than fifty cases where frozen sections have been made for me during the past seventeen years, but two mistakes have resulted. One of them was made by a young man, inexperienced in the method, who volunteered, in the absence of my customary pathologist, to act for him. He had never resorted to the method before. He reported a case of abnormal involution in a woman 46 years of age as malignant, when a subsequent and more careful examination failed to reveal positive evidence of cancer. I do not think, however, that a mistake was made in sacrificing the entire gland in this instance, inasmuch as the breast was affected throughout by well-marked abnormal involution. Moreover, the patient's mother and sister had died of cancer of the breast. The second mistake was made in a case in which a clinical diagnosis of probable carcinoma had been made in an unmarried woman 41 years of age. It was more than pardonable, as when the second examination was made from fixed specimens ten days later, not the slightest evidence of malignancy was encountered until the thirteenth section was examined. So the mistake might just as well have occurred as a result of the second examination as the first, had not so many sections been prepared and carefully examined. The result of the second examination was promptly and candidly reported to the patient, who was fortunately intelligent enough to accept it in the proper spirit and submitted the next day to a radical operation. I am pleased to state that at the end of eighteen months she remains entirely well.

It is most important to give to the pathologist the entire tumor, and not a small portion taken at random. The mistakes reported are not due to the method or principle, but to its interpretation. In other words, the surgeon, and neither the method nor the microscopist, is at fault.

Dr. Charles Mayo and his pathologist, Dr. Louis B. Wilson, write me that during the last five years more than three hundred tumors of the breast have been removed and a microscopical diagnosis made from frozen sections while the surgeon waited for a report. I quote Dr. Wilson's words:

No positive diagnosis has ever been given on a specimen which subsequently proved to be not carcinoma. So far as we have any history of the cases, no negative diagnosis has ever been given on a case which subsequently proved to be carcinoma. This rather unusual record is probably due to the fact that the surgeon almost invariably removed the entire tumor with a bit of the surrounding breast tissue before sub-

mitting it to the laboratory. When the tumor is very large, of course this cannot be done, but in such cases it is usually possible to make the diagnosis clinically. Cases positively diagnosed as carcinoma clinically are not included in the three hundred. If the tissue contains the pathologic evidence of carcinoma, it can be determined quite as well by a fresh stain as in fixed specimens.

Dr. Mayo also says that he does not think it possible for anyone always to tell the character of a solid or cystic growth of the breast by naked eye appearances. I am certainly of the same opinion, as said before, and I have found frozen sections so satisfactory for many years that I feel it my duty to make use of them in every doubtful case. I invariably explain the situation to the patient and get her consent for a complete operation, should it be necessary. Moreover, there is this advantage in the practice—I find that some patients who would refuse a radical operation offered unconditionally will consent to it on the condition of the microscope's furnishing undoubted evidence of malignancy. In other words, they will consent to a mutilation probably necessary when they would refuse such assent believing that it would certainly be necessary.

OPERATIVE METHODS

During the last five years, I have invariably practiced Warren's method of plastic resection in all benign growths and in those of questionable nature. No matter where the tumor is situated, or whatever its size, be it large or small, I think that the free incision, beneath the breast, which leaves no unsightly scar and which furnishes the best opportunity to examine the entire breast carefully, is much better than a smaller incision directly over the tumor. I have not had in a single case the slightest reason to regret its employment, for in cases of advanced abnormal involution, or even malignancy, I have been prevented from going astray by depending on the report promptly furnished from examination of frozen specimens. In all cases of doubt, the wound is promptly cauterized with the actual cautery, and plugged with gauze while awaiting the microscopic report.

I must insist that the danger of infecting the wound by liberating cancer cells has been greatly overestimated, and that such danger is reduced to a minimum provided the actual cautery is employed. I am unwilling to say that the risk is entirely overcome in this way, but it is rendered so slight that it is practically negligible and is as nothing to the hazards of delay until a clinical diagnosis can be made.

Better results in the operative treatment of malignant disease here and elsewhere must come, if they come at all, only by resorting to diagnostic incision and frozen section reports in doubtful cases. I have greater faith in frozen sections, and always rely on them in hospital practice; but when operating apart from a hospital and a competent pathologist, have tried to teach myself to recognize macroscopically the several conditions likely to be encountered.

I wish to state positively my position concerning incision for diagnostic purposes *only*, the wound being closed and the action of the surgeon governed by a report from the laboratory made days or weeks subsequently. In the light of our present knowledge there is no warrant for such procedure, as cancer cells are disseminated thereby, and a radical cure from a second operation, however early and extensive, is rendered far less likely.

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RECENT STUDIES ON LIPOIDS*

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The constituents of any tissue can be conveniently subdivided into three main groups, according to their physical properties.

1. Solid aggregates (fat droplets, glycogen granules and solid structures).
2. Colloids (proteins and lipoids).
3. Crystalloids (salts, water-soluble extractives like creatin, etc.).

In the first group, the fat droplets and glycogen granules occupy about the relation to a living cell that the coal in the tender does to a locomotive. They serve as a convenient source of energy, but do not represent an essential part of the functionally active machine. The crystalloids in a good many cases, but by no means in every case, represent end-products of chemical activity, and as such do not concern us here. The colloids, a name originated by Graham,¹ form an essential part of the mechanism of the living cell, and as such represent larger aggregates of molecules, which are on the borderline between suspensions and true solutions.

Their ability to change this state of aggregation is of great functional significance as will be illustrated later. A very good discussion of the properties of colloidal solutions has been given by A. A. Noyes.² The colloids of the tissues are further subdivided into two main groups, the proteins and the lipoids. The term "lipoid" was introduced by Overton³ to designate a class of compounds which are characterized by their solubility in various fat solvents, and occur in large quantities in the nervous system. In their chemical properties and structure the lipoids do not resemble one another very closely, but their relation to fat solvents and their peculiar ability, as distinguished from the neutral fats, to form permanent emulsions or colloidal solutions with water, make it convenient to consider them as a group.

A study of their biologic properties has further served to justify this classification. The credit for first calling attention to certain members of this group belongs and has always been given to Hoppe-Seyler.⁴ The pioneer work on the lipoids of the nervous system has, however, been done by Thudichum,⁵ and it has been my privilege at various times to call attention to the splendid work of this much-neglected investigator, who during his lifetime received practically no recognition, even from his immediate colleagues. The classification of lipoids given in the table is essentially due to Thudichum, although the term "lipoid," as already stated, was introduced more recently by Overton.

CLASSIFICATION OF LIPOIDS ACCORDING TO THUDICHUM

1. Cholesterols (carbon, hydrogen and oxygen).
Structure: Unknown.
Example: Cholesterol (formerly incorrectly called cholesterin).
2. Cerebrosids (carbon, hydrogen, oxygen and nitrogen).
Structure: Unknown.
Groups isolated and identified: Galactose.
Example: Phrenosin (cerebrin).
3. Phosphatids (carbon, hydrogen, oxygen, nitrogen and phosphorus).

Structure: Not satisfactorily known. Esters of orthophosphoric acid.

Groups isolated and identified: Palmitic, stearic, oleic, linoleic and glycerophosphoric acids, cholin.

Examples: Lecithin, cephalin.

4. Sulphatids (carbon, hydrogen, oxygen, nitrogen, sulphur, and sometimes phosphorus).

Structure: Unknown. Esters of sulphuric acid.

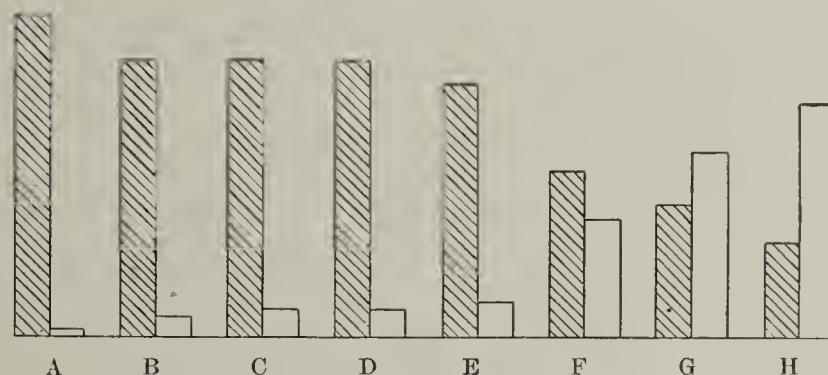
Example: Cerebrosulphatid.

The anatomic term "myelin," introduced by Virchow,⁶ and the rather indefinite protagon first mentioned by Liebreich⁷ have been omitted from the above classification as not sufficiently well characterized chemically. The chemistry of the above groups is still in an unsatisfactory condition, but a considerable number of investigators are at present engaged on this subject. The biologic significance of the lipoids has also until recently been very much overshadowed by the greater interest in the proteins. The relative proportions in which the two groups occur in various tissues is shown by the illustration.

The fact that most tissues contain more protein than lipoids does not, however, argue for the relatively lesser importance of the latter group, for as will be shown presently, even the comparatively small quantity of lipoids in the erythrocyte have an important biologic function. The biologic rôle of the various lipoids will be considered under the headings as outlined in the table.

CHOLESTEROLS

Cholesterol, or to use the older less correct term, cholesterin, is familiar to everyone as a pearly white crystalline substance, which is found as the constituent of some



Proportion of protein (shaded) to lipid (white) in different tissues. A, erythrocyte; B, striated muscle; C, heart muscle; D, kidney; E, liver; F, brain at birth; G, adult brain; H, corpus callosum.

gall-stones and can sometimes be observed in museum jars in which brains have been preserved in alcohol. Cholesterol by itself is probably of very little value to the organism, but in conjunction with the other lipoids, there is good reason to believe that it has an important function in adding stability to certain membranes. The very considerable quantity in which it occurs in the sheath of the medullated nerve fiber lends support to this suggestion. That it may serve a similar function in the stroma of the red blood-cell has been demonstrated to be probable by Ransom⁸ who showed that saponin in producing hemolysis does so by interaction with cholesterol. K. Meyer⁹ has lately suggested that the lecithin may also play a rôle in saponin hemolysis.

The recent observations of Faust¹⁰ that the hemolytic substance of the flat worm *Bothriocephalus* is a cholesterol oleic acid ester, is also of interest in this connection, on account of the significance which has been attached to this finding regarding the etiology of certain

* Read before the Pathological Society of Philadelphia, Dec. 8, 1910.

1. Graham, T.: Phil. Tr. Roy. Soc. London, 1861, cli, part 1, p. 183.

2. Noyes, A. A.: Jour. Am. Chem. Soc., 1905, xxvii, 85.

3. Overton, E.: Studien über die Narkose, Jena, 1901, Gustav Fischer.

4. Hoppe-Seyler. Med.-Chem. Untersuch. Tübingen, 1867, i, 215.

5. Thudichum: Die chemische Konstitution des Gehirns des Menschen und der Tiere, 1901, F. Pietzker, Tübingen. (See also for review of older French literature Chap. I.)

6. Virchow, R.: Virchow's Arch. f. path. Anat., 1857, xii, 483.

7. Liebreich: Ann. d. Chemie, 1864, xxix, 134.

8. Ransom: Deutsch. med. Wchnschr., 1901, xxvii, 194.

9. Meyer, K.: Beitr. z. chem. Physiol. u. Path., 1908, xi, 363.

10. Faust, E. S.: Arch. f. exper. Path. u. Pharmakol., 1907, lvii, 367.

forms of pernicious anemia. The finding of hemolytic lipoids in cancer tissue may also be mentioned here, but the nature of the lipoid concerned has not yet been made out.

CEREBROSIDS

The principal member of this group, cerebrin, was first described by Müller.¹¹ The fact that the cerebroside occurs principally in medullated nerve fibers led Takaki¹² to investigate their possible relation to the ability of the tetanus toxin to follow a nerve trunk and thus reach the central nervous system from the periphery. The experiments, which consisted mainly in the study of the power of cerebrin and some of its derivatives to neutralize the toxic action of tetanus toxin, were not very conclusive.

Similar experiments with a greater variety of preparations were tried some years ago in cooperation with the late Dr. H. T. Ricketts. The variations were, however, within the variations to be expected in this kind of work and consequently were never published. The fact that this group contains galactose might suggest a nutritive function for the nerve fiber, if it were not such a common phenomenon to have the organism build up into structural elements and thus render useless as food, certain groups which might otherwise serve as sources of energy. The high carbohydrate content of the chitinous shells of certain crustaceans is a good illustration of this phenomenon.

THE PHOSPHATIDS

The phosphatids, so named by Thudichum,⁵ usually appear as yellowish, waxy substances which show some tendency to crystallize when dry, but very quickly soften and lose this tendency when exposed to the air.

Exposure to the air also causes them to darken in color, so that old preparations may appear quite dark. The phosphatid with which we have been up to the present most familiar is lecithin. It was first carefully studied by Hoppe-Seyler⁴ and found by him to be pretty generally distributed in all forms of protoplasm. The various subgroups into which the phosphatids have been divided for purposes of chemical study will not be here taken up, but the considerable variety of biologic phenomena will be considered in which this interesting group of lipoids appears to play a rôle.

Relation to Inorganic Salts.—The fact that in the extraction of a tissue with a fat solvent, the greater part of the ash constituents, especially the sodium and potassium, follow the phosphatids, and do not remain behind with the proteins to any appreciable extent, is of significance.

A protein after purification may retain an ash content of 0.5 and 1.0 per cent., but phosphatids will carry through such solvents as anhydrous ether an ash content ranging from 2 to 5 per cent.

The importance of this relationship is further illustrated by direct experiment. It is possible by precipitation reactions on colloidal solutions of lecithin to reproduce both qualitatively and quantitatively the antagonism between calcium chlorid and sodium chlorid observed by Loeb¹³ on such living forms as starfish eggs or frogs' muscles. In the presence of sodium chlorid the amount of calcium required to cause a precipitate is materially increased. As the amount of sodium chlorid is increased, greater amounts of calcium are required;

in other words, sodium chlorid antagonizes the calcium, an action which Mathews¹⁴ has shown to be due to the chlorin ion.

Williams¹⁵ has made the interesting observation that the increase in sodium chlorid, however, cannot be carried beyond that of a physiologic salt solution. As soon as the concentration exceeds this, the chlorin of the sodium chlorid can no longer antagonize the calcium, and the sodium now begins to aid the calcium in the process of precipitation.

The importance of a physiologic salt solution appears, then, to be not only to keep up the osmotic pressure, but also to keep the physical state of aggregation of the colloids at an optimum. It seems tempting to bring the phenomenon of chlorid retention in the tissues in certain diseases into relationship with changes in the colloids, which so change their state that this optimum is shifted and a higher concentration of sodium chlorid can still antagonize the calcium.

Relation to Hemolysis.—Hemolysis may be considered as a type of reaction in which a stroma or plasma membrane, which is considered by Overton to contain lipoids, undergoes changes of permeability as the result of variation in external conditions. Hemolysis is thus a special case of that larger type of biologic reactions of which plasmolysis in plant cells, cytolysis in animal cells, the fertilization of the egg cell and the phenomenon of bacteriolysis are further examples.

Hemolysis by cobra venom, according to Ehrlich, takes place as the result of the interaction of three factors—the amboceptor or cobra venom, the complement present in the serum and the receptor group in the corpuscle itself. Kyes¹⁶ has made the very interesting observation that lecithin, which is itself not hemolytic, can enter into the reaction and behave like the complement. The reaction of cobra venom with lecithin was interpreted by Kyes as in the nature of a combination with the formation of a cobra lecithid. Manwaring,¹⁷ in a recent repetition of this work, has come to the conclusion that the cobra lecithid of Kyes is a lecithin from which the oleic acid has been split off by a lipolytic ferment contained in the venom. The fact that the cobra lecithid, the product of the action of cobra venom on lecithin, is highly hemolytic, remains unaltered by this interpretation.

More recently Noguchi¹⁸ has shown that in the Wassermann complement deviation reaction for syphilis, the antigen may be in the nature of a lipoid, which in its solubilities resembles the phosphatids.

Relation to Products of Tissue Metabolism.—Williams¹⁵ has shown that lecithin may combine with and be altered in its state of physical aggregation by such tissue metabolites as ammonia and bile-salts, epinephrin, etc.

In the case of the epinephrin it has the power to protect this substance from oxidation. Thus a watery solution of epinephrin, which quickly oxidizes and loses its physiologic activity on standing, can in the presence of lecithin retain its activity for weeks, provided bacterial decomposition of the lecithin is avoided.

Relation to Drugs.—The theory of narcosis originated simultaneously by Overton³ and by Meyer¹⁹ was one of

11. Müller, W.: Ann. d. Chemie, 1858, cv, 361.

12. Takaki, K.: Beitr. z. chem. Physiol. u. Path., 1908, xi, 288.

13. Loeb, J.: Am. Jour. Phys., 1902, vi, 411.

14. Mathews, A. P.: Am. Jour. Phys., 1904-1905, x, xi, xii and xiv.
15. Koch, W., and Williams, A. W.: Jour. Pharmacol. and Exper. Therap., 1911, ii, No. 3.

16. Kyes, P.: Biochem. Ztschr., 1907, iv, 99.

17. Manwaring, W. H.: Bull. Johns Hopkins Hosp., 1910, xxi, No. 234.

18. Noguchi, H.: Jour. Exper. Med., January, 1911.

19. Meyer, H.: Arch. f. Exper. Path. u. Pharmacol., 1901, xlv, 338.

the first studies to call attention to the subject of the lipoids in relation to pharmacologic problems.

A glance at the illustration will show why a substance soluble in fats or lipoids should become largely localized in the nervous system, on the theory that a substance distributes itself between two solvents in proportion to its relative solubility in each.

The very marked affinity which the anesthetics and hypnotics possess for the nervous system is correlated with the high lipid content of that tissue. The assumption that changes in the physical state of aggregation of the phosphatids, induced by the presence of the anesthetic, are responsible for the phenomenon of narcosis, was investigated by McLean²⁰ and found not to hold as far as the general phenomenon is concerned.

He did find, however, that chloroform changed the state of aggregation of lecithin, and presented evidences of chemical combination, while ether, alcohol and chloral did not. It seems more reasonable therefore to bring this phenomenon into relation with the well-known difference in the elimination of ether and chloroform and the consequent tendency of the latter to produce delayed poisoning.

An interesting clinical application of the theory of Overton and Meyer has recently been made by Graham.²¹ On the basis that the nausea and vomiting following an operation are largely due to the excretion of the anesthetic into the stomach, he gives his patients pure olive oil. This absorbs the anesthetic and has so far been attended with very satisfactory results.

Overton also extended his theory to other drugs and suggested that the alkaloids may be taken into the nervous system by the lipoids. He does not give any experimental evidence. This has been supplied by Mostrom²² in the case of strychnin in the following experiment:

The free alkaloid strychnin, which is only very slightly soluble in water, is shaken with water for one hour; 0.3 c.c. of the resulting filtered solution injected into a 40-gm. frog, requires thirty to forty minutes to produce tetanus. If instead of distilled water an emulsion of lecithin is used, a much larger quantity of strychnin goes into solution and tetanus now occurs in two or three minutes.

We see from this that the lecithin by combining with the strychnin is the means of bringing it into solution. We can conceive that the lecithin of the nervous system picks up the strychnin from the blood-stream in a similar fashion. Lecithin would be behaving, then, in this case as a chemoreceptor group in Ehrlich's interpretation of the term. The fact that the strychnin, when combined with this chemoreceptor group, can still exert its physiologic activity, is characteristic of this type of combination. If we were dealing with a toxin of the nature of tetanus toxin, which also has an affinity for the nervous system, the combination would be much less dissociable, and the toxin consequently not free to act. (The chemical nature of the receptor group for tetanus toxin has not yet been determined: see under cerebroside.) This difference in dissociability between an alkaloid receptor combination and a toxin receptor combination is undoubtedly one of the reasons why all attempts to produce antiserums for alkaloids, as for instance morphin²³ have failed.

Relation to Problems of Specificity.—It is tempting to extend such observations as the above to the problem of the specific attraction which certain tissues have for certain drugs. An observation which has a bearing on this was made by Erlandsen²⁴ when he discovered a phosphatid to which he gave the name "euorin," which occurred only in heart tissue and in no other type of muscular tissue. Whether or not such compounds can be brought into relation with such specific affinities of the tissues remains to be more carefully studied. The observation made by Pike²⁵ that the proportion of potassium to sodium is higher in kephalin (2 to 1) than in lecithin (2 to 8) may be interpreted as indicating a specific attraction of kephalin, as distinguished from other colloids, for potassium.

This observation has an important bearing on the ability of tissues to preserve a higher concentration of potassium than occurs in the surrounding fluids.

SULPHATIDS

This interesting class which occurs largely in the medullated nerve-fiber has only recently been obtained in a state approaching purity, and consequently very little studied biologically.

In concluding, then, it is interesting to note the considerable number of biologic phenomena in which the lipoids play a rôle. The only practical application which has come to the attention of the medical profession has been the attempt to exploit lecithin commercially as a brain and tissue food. The fallacy of this I have already pointed out in a previous article,²⁶ and it is to be hoped that such attempts will not detract from the interest which should attach to further work on the subject of the lipoids.

A REPORT ON THE THERAPEUTIC EFFICIENCY OF SALVARSAN

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During the early part of September, 1910, I personally investigated Ehrlich's work in the treatment of syphilis with salvarsan. I have not made a report earlier, first, because I wished to make some observation of the results obtained by physicians in this country, and to acquire some experience in using the remedy in my own work; and second, because I believed that it would be dangerous to permit the idea to become general that a single dose of salvarsan would permanently cure syphilis.

My own experience with salvarsan, and the observations I have made of this work carried on both in this country and in Europe, lead me to the conviction that under no circumstances should it be used without also using mercury or the iodids. If we can conceive of making a diagnosis of syphilis so early that not a single spirochete has become encapsulated, but all lie free in the circulation, then we might entertain the theory of a single injection of salvarsan destroying completely the invading organisms.

The question naturally arises: What is the rôle of this new treatment, and what is its real merit?

20. Koch, W., and McLean, F. C.: Jour. Pharmacol. and Exper. Therap., 1911, ii, No. 3.

21. Graham, Everts A.: Olive Oil for Postanesthetic Anesthesia. THE JOURNAL A. M. A., Dec. 18, 1909, p. 2094.

22. Koch, W., and Mostrom, H. J.: Jour. Pharmacol. and Exper. Therap., 1911, ii, No. 3.

23. Cloetta, M.: Arch. f. Exper. Path. u. Pharmacol., I, 453.

24. Erlandsen, A.: Ztschr. f. physiol. Chem., 1907, li, 71.

25. Koch, W., and Pike, F. H.: Jour. Pharmacol. and Exper. Therap., 1911, ii, No. 3.

26. Koch, W.: Phosphorus Compounds as Brain Foods, THE JOURNAL A. M. A., May 1, 1909, p. 1381.

Experience in the treatment of syphilis with the preparation appears to be sufficient at this time to warrant the statement that it is the therapy of election in the following stages of the disease:

1. With the appearance of the chancre, or sooner, if an absolute diagnosis can be made, with the hope that this remedy may reduce to a minimum the possibility of general contamination during this stage of the disease.

2. In all affections of the mouth, throat and mucous membrane of the nose.

3. In the class of obstinate cases with cutaneous lesions that do not yield to mercury or the iodids.

4. In all cases of gummata.

5. In those affections of the central nervous system in which the spirochete may remain as the exciting element.

6. In congenital syphilis.

7. In the galloping syphilis of Unna.

Of course it is understood that before salvarsan is used in any case the tenets of Ehrlich should be fulfilled—that is, that the patient be kept under observation in a hospital for four days, where a careful record of his physical condition may be made, particular attention being paid to the condition of the heart, kidneys, eyes and ears. In other words, aside from the syphilitic taint, the patient must be in a healthy condition. The fatalities and serious complications have occurred in patients with lesions other than those due to syphilis.

Ehrlich's studies led him to believe that parasites can be destroyed only by substances to which they have a certain relation, which substances he designated as "parasitotropes." Poisons which have relations to essential organs he termed "organotropes." Ehrlich pointed out that only such substances can be used as remedies in which organotropy and parasitotropy have a right relation. This investigation led to the conclusion that when a parasitotrope was injected into the host either the invading organisms were immediately killed, or if any organisms lived through this form of treatment they were rendered tolerant to subsequent injections of this substance.

Consequently the early treatment of syphilis by the injection of salvarsan was based on the above theory. It seems difficult to conceive a condition in any stage of syphilis in which every single spirochete was free in the circulation at the same time. One can scarcely reconcile this condition even at the moment of reception of the spirochete into the host because of Nature's ability to wall off invading organisms; yet it is just possible that a complete extirpation of the spirochetes might be accomplished in this way, if the diagnosis of syphilis could be made early enough. It does not seem as though the disease could be recognized early enough to make the hope of having an absolute cure of syphilis from a single injection of salvarsan a well-grounded one.

The determination of the immediate efficiency of this form of treatment is based on the Wassermann reaction becoming negative within a reasonable length of time after the injection, usually in about five weeks. An idea of the efficiency of salvarsan can best be given by recording a brief summary of the results of the Wassermann test in some of the clinics in which this treatment was first carried out.

The following compilation of results is made from a recent report from Dr. Ehrlich, entitled, "Die Salvantherapie: Rückblicke und Ausblicke":

1. In the Weintraud Klinik, 124 patients in the second and third stages of syphilis were all Wassermann-positive before treatment. After a single injection of salvarsan fifty-seven became negative, while sixty-seven

remained positive. Weintraud was of the opinion that by systematic reinjections it is possible to bring the percentage of Wassermann-negative cases to 90 per cent.; then by the use of mercury to bring about a negative Wassermann in the remaining 10 per cent. of cases.

2. Gennerich¹ treated 81 patients with severe cases and produced a negative Wassermann in all but three cases.

3. Schreiber, Magdeburg, succeeded in producing a very high percentage of Wassermann-negative conditions by a repetition of the injection.

4. Fabry-Dortmund, with the alkaline solution introduced by the intramuscular method, had only six recurrences out of 385 patients treated.

5. Dr. Schmlz, Strassburg, by the subcutaneous method, had four recurrences out of sixty-three cases. Two of these returns were due to a gangrenous condition at the site of the injection, which necessitated incision and drainage. All four became Wassermann-negative in a short time, after being treated by the intravenous method.

6. In this country, Murphy, of Chicago, has had an extensive experience in the use of salvarsan. Out of 100 patients treated by the "suprafascial" method, he has had one bad result, which was due to an encapsulation and lack of absorption of the mixture at the site of the injection, that had to be opened and drained. The suprafascial method introduced by Murphy is as follows:

The needle is inserted at the level of the tenth rib, and at a point one and one-half inches from the median line posteriorly. The needle is directed outward and downward parallel to the tenth rib reaching to the fascia overlying the loins, and the mixture is deposited on the fascia.

Another point of much importance to decide in this connection is the safest and most efficient method of administration. Of the various methods used, only two need be considered, viz., the intramuscular (including the suprafascial), and the intravenous. A solution of this problem can best be reached by presenting a brief résumé of the results obtained by some of the most experienced and accurate workers.

The following is a translation of an extract from a letter just received from Dr. Ehrlich, under date of Frankfort a/M., 4 Feb., 1911:

"I should like to remark that I, as you well know, am much in favor of the intravenous injection, and that preferably this should be repeated two or three times in very early cases (the second stage), as Weintraud does in Wiesbaden. He makes an intravenous injection three times within four or five weeks, using 0.4, or at most 0.5 in men, and the result is that in over 90 per cent. of cases the Wassermann reaction is negative."²

The results reached, as already cited, by Fabry-Dortmund in a large experience with the intramuscular method, and by many other workers of large experience who use this method of administration, and those of Murphy of Chicago by the suprafascial method, should prove conclusively that the extravenous methods are efficient. Whether this efficiency reaches the same degree as that of the intravenous I cannot say. On the other hand, I can state most emphatically that the latter method is much more dangerous, and while this danger

1. Berl. klin. Wehnschr., 1910, No. 46.

2. "Ich möchte mir noch die Bemerkung erlauben, dass ich, wie Sie wohl wissen, sehr für die intravenöse Injektion bin und dass diese zumal bei ganz frischen Erkrankungen (Syphilis II), am besten 2-3 Mal wiederholt wird, wie dies Weintraud in Wiesbaden tut. Er injiziert innerhalb 4-5 Wochen 3 Mal intravenös, Männern 0.4 bis höchstens 0.5 und erreicht, damit dass in weit über 90% der Wassermann negative wird."

may be reduced to a minimum by scientific management and the experience in technic possessed by the operator, still there is an element of danger over which experience exerts no influence, viz., the possibility that this arsenical preparation undergoes a chemical change when introduced into the direct circulation, which at times may have a deleterious or even fatal effect.

Since all operations or methods of therapy have as a purpose, first, the saving of life, and second, efficiency, it would seem most rational to conclude by strongly recommending the administration of salvarsan by the extravenous methods, viz., the intramuscular and the suprafascial, and in those cases proving refractive to this mode of treatment, readministering it by the intravenous method.

My own experience in the administration of salvarsan has been by the extravenous methods, both the intramuscular and the suprafascial. Sufficient time has not elapsed to make a complete report on these cases; however, I wish to state that there have been no complications and the patients have experienced very little distress after this form of administration. From a clinical point of view they show evidence of a subsidence of the disease.

CONCLUSIONS

1. The medical profession should use every effort possible to eradicate the idea that appears to have become prevalent in the minds of the laity, and, indeed, of many of the profession, that a single dose of salvarsan will permanently cure syphilis.

2. Salvarsan should be administered under the best scientific conditions possible, which means that no patients should be treated until they have been in a hospital four days and careful records made of their physical condition. Only patients in a healthy condition, aside from the syphilitic taint, should receive this form of treatment. Any attempt to treat patients when these precautions have not been taken, or any unscientific use of the preparation, should be strongly opposed by the profession, as these attempts are sure to result disastrously to the patient and also to detract from the merits of the remedy.

3. Salvarsan is the treatment of election in the conditions of syphilis enumerated in this paper, but under all circumstances should be followed by mercury or the iodids, or by both.

4. Administration by the intramuscular or suprafascial route should first be instituted, as it is the safest method, and in the event of the patient not becoming Wassermann-negative, it is then time enough to employ the more dangerous intravenous method.

100 State Street.

Intestinal Anastomosis.—The various instruments and appliances formerly used to facilitate work on the intestines have nearly all been discarded for the simple but efficient method of intestinal anastomosis by thread and needle. The general condition of the patient should be as near par as is consistent with the exigencies of the case. All organs should function properly and the temperature and blood should be about normal, to obtain the maximum results in surgical work on the intestines. The work should be carefully but rapidly performed, which is oftener the case when the surgeon has from practice or experimental work on the lower animals become skilful in the use of needle and thread. A positive blood-supply to the tissues making up the anastomosis is necessary. The end-to-end method is not so certain, therefore the side-to-side anastomosis should be chosen whenever convenient. A. E. Benjamin, in *Lancet-Clinic*.

A CASE OF HEMATOSALPINX WITH CERVICAL ATRESIA

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Patient.—N. H., aged 15, white, schoolgirl, was eldest of three children, complained of pain in the left lower abdominal quadrant with nausea and vomiting.

Family History.—This was unimportant. The mother menstruated at eleven.

Personal History.—Birth was normal. The history was taken after the operation. General health had never been good. During childhood the girl had measles, mumps, whooping-cough, chicken-pox, diphtheria, scarlet fever, chorea and one attack of "slow fever" lasting a week, with severe headache and delirium. She had always been nervous and delicate. Appetite was somewhat inordinate, and she craved unusual and unreasonable foods; digestion was good. There was no nausea or vomiting except during the attacks. Bowels usually moved every day. The urinary condition seemed to have been normal up to present illness, during which she suffered severe dysuria. Following diphtheria and scarlet fever at the ages of 5 and 6, patient had a troublesome white discharge (leukorrhea) irritating but not malodorous. Although 15 years old, the patient had never menstruated. Four years ago her mother noticed that she was unusually nervous, with dark circles under her eyes, and had headache and nausea, and thought that menstruation was about to begin; no flow ever appeared. In February, 1907, following such a train of symptoms as just mentioned, the patient had a sudden severe attack of pain in the right lower abdominal quadrant, associated with nausea and vomiting, lasting three or four days. Each month since, the girl has had headache with dark circles under her eyes. Never has there been a drop of menstrual flow. Similar attacks to the one in February, 1907, occurred in February, 1908, February and June, 1909, and June 12, 1910, the present one.

Present Illness.—Three days before consulting me, the patient began having a dull aching pain, sometimes sharp in character, in the left lower abdominal quadrant. It grew steadily worse and was so severe next day that nausea and vomiting set in. The pain became general and the right side was involved. She was not constipated.

Physical Examination.—Patient was an emergency case, and came to the hospital suffering severe pain in both lower abdominal quadrants. She looked ill. Pulse was 120, respiration 26, temperature 102.4 F., by rectum. The abdomen was rigid, and there was general resistance and tenderness, palpation being most painful in the left lower quadrant. A mass was distinctly felt in the right iliac fossa.

Diagnosis.—A diagnosis of appendix abscess was made.

Operation.—A small gridiron incision was made in McBurney's region. On opening the peritoneum, dark bloody fluid welled out. The examining finger encountered a smooth, elastic, crepitating mass, filling the right iliac fossa and extending to the median line. In appearance the mass was lobulated, and of dark bloody color. As it was impossible to deliver it through the small incision, an opening was made in the median line. The mass proved to be a large left-sided hematosalpinx, with twisted pedicles, containing 8 or 10 ounces of blood-clot. The tube at the cornu measured from 1 to 1.5 cm. in diameter; the ovary could not be distinguished from the mass. It was tied off with catgut and removed. The right tube and ovary were found lying in the cul-de-sac; the tube was dilated slightly, and the ovary enlarged and cystic, measuring 8 or 9 cm. by 4 cm. Both were removed. The uterus was normal. After cleaning out the small amount of dark bloody fluid the abdomen was closed in layers. The appendix was not seen.

Postoperative Notes.—Aside from inability to void urine for five days after the operation, the patient made an uneventful recovery. Temperature reached normal on the fifth day, never being over 101 F. The pulse dropped to 80 on the fifth day. Before discharge from hospital a vaginal examination was

made, using a cystoscope. The vulva was normal, the vagina narrow, measuring 9 cm. from a normal hymen to the cervix. There was a white thick leukorrheal discharge. The cervix was flush with the vaginal vault, completely closed, and the os marked with a dimple.

The case was one of cervical atresia, probably caused by the diphtheria or scarlet fever during childhood. The amenorrhea was the result of obstruction and the menstrual flow had accumulated in the tube. The patient, six months after operation, is in perfect health but has not menstruated.

I am indebted to Dr. K. P. Moore for allowing me to report this case, which came under his care in the Macon Hospital.

ARRESTED DEVELOPMENT OF ABDOMINAL PARIETES

ASSOCIATED WITH SHORTENED UMBILICAL CORD

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History.—The mother was a strong, healthy woman, Danish, aged 26, a teacher before marriage, and gave no history of uterine or pelvic troubles. No known relatives have been deformed. It was a first labor and a midwife was in attendance for about twenty-four hours. When I arrived I found the position to be R. O. P. The cervix was dilated to about 5 cm. Mother and fetus were apparently normal. Uterine inertia and powerful uterine contractions alternated for the next five hours without dilating the cervix to any extent. Chloroform was then given, the cervix dilated manually and high forceps applied. After each pull on the forceps, the head sprang back to its original place as if pulled on by elastic band. There was considerable hemorrhage between and during the efforts at traction. After about one hour the head reached the vulva; a pair of hemostats was clamped on the cord and the cord cut. The child was then delivered with ease. The placenta was immediately removed by the hand placed in the uterus. It was attached on the anterior superior part of the interior of the fundus.

Examination of Child.—The child was a female weighing 8½ pounds. A thin semitransparent membrane about the thickness of tissue paper extended from the xiphoid cartilage to one inch below the umbilicus. This membrane was elliptical in shape and about four inches across the broadest part. The abdominal organs—liver, spleen, stomach, and intestines—could be easily seen through this membrane.

The umbilical cord was 12 cm. (5 in.) long and 0.6 cm. (¼ in.) in diameter and lacking in the usual spiral windings. The greatly diminished diameter of the cord and lack of windings give one the impression that the cord was even shorter than 5 inches, its present length; but during the latter months of pregnancy had been elongated at the expense of diameter by the tension of the fetal weight and movements. The specific gravity of the fetus is always greater than that of the amniotic fluid; hence, with a cord suspended from the fundus of the uterus and not long enough to allow the fetus to reach the opposite extremity of the uterus, there would be tension on the cord. (In this case the uterus was 12 inches and cord only 5 inches.)

Operation.—At end of fourteen hours a red line extended all around the border of the membranous part of the abdominal parietes of the child. Chloroform was given, the membrane dissected off and the abdominal walls brought together, with through-and-through silkworm sutures. The umbilical vein was tied and cut under the liver. The urachus was patent from the bladder to the umbilicus. The urachus was closed by suture. A small Meckel's diverticulum was present and left untouched. Considerable difficulty was experienced in pulling the abdominal walls together over the liver and in replacing the intestines. The time of operation was one and a half hours. The baby left the operating table in fair condition, but died eight hours later.

Fourteen and a half months later the same woman gave birth to a healthy eight and a half pound boy. This second

labor was normal, a L. O. A. position, and there was no deformity of child or cord.

This case emphasizes the fact that an abnormal position or presentation of a fetus should always cause us to suspect and search for some abnormality of fetus or mother's pelvis before considering it a mere chance abnormality. Most faulty presentations and positions have an ascertainable cause other than chance. In this case the presentation was cephalic:

1. Because the fetus was suspended by the short cord from the fundus of the uterus, and the cephalic end (from head to umbilicus) being longer than the caudal end (from umbilicus to coccyx) gravitated to the bottom of the uterus. Also the distance from sacrum to umbilicus is not long enough to allow the sacrum to reach the cervix, when the fetus is suspended on a five-inch cord.

2. The position was posterior, because in this position, with the placenta on the upper, anterior surface of the uterus, the short cord would reach furthest. In order to have allowed for an anterior position, with the placenta in this position, the cord would have had to wind around the fetus from umbilicus to back, which would have taken up so much of its length that the head could not have reached the cervix.

3. Hemorrhage during and between efforts at traction on the forceps was due to pulling on the placenta, causing some separation thereof.

4. Recoil of the head after traction on the forceps was due to the uterus assuming its original shape.

5. The fact that the head could be dragged to the vulva by the forceps with such a short cord was due to a partial inversion of the uterus during traction.

6. Uterine inertia was due to inability of the uterus to expel the child.

7. The statement of the midwife, if a correct observation, that the patient carried the child high in the abdomen and that there was no descent of the head until labor began, is also explained by the short cord.

A CASE OF SO-CALLED BOTTLE-MAKER'S CATARACT*

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Cases of bottle-maker's (often called glass-blower's) cataract, supposed to be due to prolonged exposure to excessive heat and bright light, are rarely seen except in localities where the industries that produce these changes are situated. This case is interesting on account of its occurring in one who has been a baker for many years, subjected daily to the continued high temperature of the bake-room.

History.—J. W., aged 41, has been working steadily as a baker for twenty-four years past. His sight, so he says, was always good. Three years ago he began to notice a gradual failure of vision, and now he cannot read the newspaper. He had not consulted anyone until Nov. 10, 1910, when I first saw him at my office.

Examination.—Vision, right eye, 15/80; left eye, 15/200; no improvement with glasses; urine negative for sugar and albumin; no signs of other intra-ocular disease. The lenses are absolutely clear, except in the posterior cortical zone, where there is situated a slightly irregular disk of opacity—half the size of the lens. The disk, especially by direct focal

* Read and patient exhibited before the Chicago Ophthalmological Society, Dec. 19, 1910.

illumination, can be seen to have a well-defined and somewhat thickened, irregular border. Slight hazy opacities can be seen in the center of the disk, and the same to a less degree outside of same in the posterior cortical plane of the lens.

That this case is exactly similar in type to glass-blower's cataract is proved by the words of Herbert Parsons and Marcus Gunn, who, in 1908, visited some of the important glass-works in England, for the Royal Society, to gather statistics of industrial diseases for the framing of the Workmen's Compensation Act. They say:

Bottle-makers are subject to a form of cataract which appears to be characteristic, and is unlike other forms of cataract commonly observed. In its typical form there is a dense, well-defined disk of opacity in the center of the posterior cortex. Not infrequently slighter hazy opacities are seen around this posterior cortical disk.

Hirschberg describes it in a similar way; and in 1898 exhibited five cases of glass-blower's cataract. At the same time he drew attention to the peculiar color of the faces—the effect of heat on the skin. Most of the German literature on the subject seems to concede that heat is the factor that produces these changes in the lens and skin.

Weyl* mentions fire-workers, blacksmiths, puddlers, bakers and cooks as subject to this same change in the lens.

In a volume on industrial diseases, 1909, Greer says of bottle-maker's cataract: "It commences as a saucer-shaped opacity like a cobweb in appearance, and situated immediately within the posterior capsule of the lens."

The treatment which I am using is the method of von Pflugk and Verderau—instillations of 2 per cent. solution of potassium iodid, to be followed later by subconjunctival injections of the same. According to Hirschberg, these cases progress very slowly until 20/200 vision has been reached, when often a more rapid decline follows. When ready for operation they present a most favorable type for successful extraction.

34 Washington Street.

THE DIAGNOSTIC VALUE OF THE PARADOXIC REFLEX

AN ADDITIONAL ANATOMIC PROOF OF ITS PRACTICAL
IMPORTANCE

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In December, 1904, I described¹ a new reflex under the name of paradoxical flexor reflex. I found it then present in cases the history of which pointed to organic diseases of the nervous system and especially of its motor tracts, and always associated with exaggerated knee-jerks. As is well known, Babinski's toe phenomenon is the clinical expression of a disease of the motor pathway.

The reflex can be elicited in the following manner: The patient may either lie on his back or sit on a chair with the feet (not the legs) on a stool. The feet must be slightly rotated externally; in this position complete relaxation of the muscles of the leg is obtained. The examiner must always place himself at the outer side of the leg; the thenar and hypothenar muscles of the right hand must be placed on the inner surface of the

tibia of the patient and the fingers press deeply on the middle or the lower portion of the calf muscles. I say "deeply" because the pressure must be transmitted to the flexor muscles of the deep layer; sometimes pressure must be combined with lateral movements of the superficial muscles. If the reflex is present, extension of the great toe, or of all the toes, will be noticed. There is evidently no other muscle except the flexors that could be brought into display. The tibialis posticus, the peronei have an entirely different function from flexion or extension of the toes.

During my investigations I observed a peculiar relationship between these two reflexes. Babinski's sign was sometimes present and sometimes absent, but in the majority of my cases the paradoxical reflex was present on the side on which the Babinski sign was either absent or slight. It was present in those obscure cases in which the Babinski reflex was not obtainable.

My first series comprised thirty organic cases, in nineteen of which I observed that Babinski's sign and the paradoxical reflex showed a tendency to replace each other; viz., when one was slight, the other was marked and *vice versa*. There was a species of antagonism between the two reflexes.

My observations at the time of the first report were purely clinical. I had no anatomic proof to offer.

In December, 1908, I made a second report to the Philadelphia Neurological Society on fifty-eight cases. The diseases in which the reflex was studied were as follows: transverse myelitis, amyotrophic lateral sclerosis, hemiplegia, Jacksonian epilepsy, disseminated sclerosis, cerebrospinal syphilis and essential epilepsy. Here again I observed the same antagonism between the Babinski and paradoxical reflexes, viz., when one was present and pronounced, the other was absent; when one was mild, the other was pronounced. The latter fact was particularly conspicuous in seven cases of transverse myelitis: at first Babinski's sign was absent on one or both sides and the paradoxical reflex was present; two or three months later Babinski's sign made its appearance, and the paradoxical reflex completely disappeared or was faintly present. In one case of cerebrospinal syphilis in which the spinal symptoms were the most conspicuous, energetic mercurial treatment was instituted. The patient's mental functions, the ataxia and sphincters improved considerably: The knee-jerks, however, remained markedly exaggerated; ankle-clonus was present on one side, but Babinski's sign disappeared on one side and was only slightly preserved on the other; the paradoxical reflex remained intact and was easily obtainable.

As another illustration of the antagonistic relationship of the two reflexes may be mentioned six cases of Jacksonian epilepsy of the same series. In all there was paresis on the same side. When the examination was made immediately or shortly after the attacks, the knee-jerk was exaggerated on the affected side and the paradoxical reflex was easily elicited in all the cases, while Babinski's sign was in three cases only slightly present and in two others absent.

An analysis of all the facts observed and followed up led me to the conclusion that the paradoxical reflex is a valuable sign for diagnostic purposes at the beginning of an organic affection showing that the motor tract is being irritated; while Babinski's sign is of inestimable value in cases of a well-established lesion of the motor tract, the paradoxical reflex is a sign, to say the least, of a transient irritation or of a slight lesion of the same tract.

* Weyl: Handbuch der Arbeiterkrankheiten, 1908.
1. Am. Med., 1904, viii, 971.

That a transient irritation may be the cause of the reflex can be seen among other facts, especially from the following case:

CASE 1.—A lad of 12, in the course of typhoid fever, developed meningeal symptoms. He then had an attack of epileptiform convulsions on the right side which were followed by paralytic symptoms on the same side. I had an opportunity to examine him twice at an interval of two weeks. On both occasions the right knee-jerk was markedly exaggerated, there was no ankle-clonus and no Babinski sign, but the paradoxical reflex was present and easily elicited. The patient made a complete recovery; the paralytic symptoms, the increased knee-jerk and the paradoxical reflex disappeared.

My systematic study of sixty cases of paretic dementia² with reference to the reflexes of the lower extremities demonstrate the great rarity of the Babinski sign (on both sides in three cases and on one side in four cases), but the great frequency of the paradoxical reflex (in forty-two cases) in this disease. According to the pathologic reports in cases of paresis, the motor pathway is involved only to a very slight degree in the majority of instances. As Babinski's sign is usually the clinical expression of a well-defined degenerative lesion of the motor tract, the very moderate degree of pyramidal involvement will perhaps explain satisfactorily the rarity of Babinski's phenomenon in paresis. On the other hand, the presence of the paradoxical reflex in the largest number of my paretic cases finds its logical explanation in the slight degree of pyramidal involvement. This observation in paresis is therefore analogous to, if not identical with, the observation made in other organic nervous diseases, and tends to show, I believe, the correctness of my contention made in my earliest study of the significance of the paradoxical reflex.

From the clinical standpoint the diagnostic value of the paradoxical reflex appeared therefore to be established; it remained for me to corroborate it by anatomic proofs. That is to say, it was necessary to show that a real anatomic lesion was present in those cases in which during life the paradoxical reflex was the only or the most conspicuous sign and in which operative procedures were undertaken for this reason with satisfactory results so far as the finding of the lesion is concerned. Soon such opportunities presented themselves.

In 1906 and 1907, I had the opportunity to observe two cases.³

CASE 2.—In this case, in which a localized hemorrhagic pachymeningitis was found in the right motor area, the paradoxical reflex was very distinct on the left together with a slightly exaggerated knee-jerk on the same side, but there was total absence of Babinski's and Oppenheim's toe phenomena and of ankle-clonus. The paradoxical sign was the most prominent symptom. When the blood was removed by the surgeon from the right hemisphere, the patient regained consciousness (he was deeply comatose before the operation), improved considerably and on the second day the patellar tendon reflex became normal and the paradoxical sign totally disappeared. Four days later, the same phenomena returned and the patient again became stuporous; the abnormal reflexes returned. The patient died two days later. Autopsy showed a reformation of the blood clot in the right hemisphere over the Rolandic area.

CASE 3.—This concerns a man who complained of pain in the right side of the head in the same place where he received an injury six months previously. There was also marked mental hebetude and somnolence. The left knee-jerk was exaggerated and the paradoxical reflex was obtained with the greatest facility. There was no Babinski reflex, no Oppenheim sign, no ankle-clonus. The contrast between the flexion of the toes on the

right side and extension on the left on pressure of the calf muscles was most striking. Trephining of the skull with exposure of the upper part of the Rolandic area was performed. As the opening was made, the cerebral tissue bulged out; it was evidently under high tension. The surgeon immediately closed it up. Rapidly the patient regained his intelligence; the somnolence and headache totally disappeared. At the end of forty-eight hours the paradoxical reflex became weaker and on the fourth day could no more be elicited. The patient was reexamined six weeks later; the paradoxical reflex and the increase of the knee-jerk were totally absent.

These two cases with the anatomic proofs corroborated in the most forceful manner the conclusions which I reached at the beginning of my studies from purely clinical observations, to wit, that the paradoxical reflex is a sign of value in the beginning of an organic affection of the motor system or in cases of its irritation, while Babinski's sign is of inestimable value in cases with a definitely established lesion of the motor pathway.

I wish to add a third anatomic case which, like the previous two, presents an exceedingly definite illustration of the diagnostic value of the paradoxical reflex and of its practical bearing.

CASE 4.—*History.*—An Italian laborer, aged 23, of excellent health, during a quarrel sustained an injury over the left frontoparietal region at its upper level. He was struck with a piece of heavy iron. Laceration of the scalp ensued and a swelling of the parts of the size of a silver half dollar followed. There was no loss of consciousness, but mental hebetude and distinct motor aphasia developed. All the man could say was "yes" or "no." The patient came under my observation through the courtesy of Dr. I. Cortese about ten days after the trauma. On examination I found the above-mentioned hebetude and the motor aphasia. The patient could comprehend fairly well when spoken to, but was unable to articulate. Various objects were shown him and wrong names given them; when asked whether they were the proper names of the objects, he answered correctly "yes" or "no." Voluntarily, he could not articulate other words, or repeat them when spoken to him. There was no word-blindness or word-deafness.

Examination.—Physical examination showed good station and gait. The power of the right lower extremity was very slightly diminished, so slightly that the defect could be easily overlooked if the patient were not very closely examined. This was done by testing the resisting power of the thigh, leg and foot and comparing it with that of the corresponding segments on the opposite side. The right knee-jerk was also slightly more marked than the left; nevertheless the difference was distinct on repeated examinations. There was no ankle-clonus, no Babinski reflex, no Oppenheim sign. The paradoxical reflex was present on the right side in the most conspicuous manner; it could be elicited, with the greatest facility, during the entire fifteen days before the operation. The scalp presented the above-mentioned elevation over a small area at the uppermost portion of the left fronto-parietal region. The thickness of the lacerated surface prevented an exact determination of the condition of the underlying bony tissue; pressure provoked pain, however.

Treatment.—After the patient was placed in the Northwestern General Hospital his mental condition began to improve and the aphasia gradually disappeared. Both the paradoxical reflex and the slightly increased knee-jerk persisted with the greatest obstinacy and at no time could either Babinski or Oppenheim sign be elicited. The condition, in my opinion, therefore, indicated an involvement of the left motor area, probably only an irritation, but not a distinct lesion, in view of the absence of Babinski's sign. I advised an operation over the injured region of the scalp. Before operating an x-ray picture was taken, and a distinct involvement of the bony tissue was detected on the skiagraph. Dr. J. Thompson Schell performed an osteoplastic operation. The upper half of the Rolandic area, including the lacerated region, was exposed. A small fragment of the inner table of the skull was found imbedded in the dura, producing a subdural hemorrhage lying over the

2. Jour. Nerv. and Mental Dis., July, 1907.

3. Rev. Neurol., No. 22, 1906; and Am. Jour. Med. Sci., August, 1907.

uppermost portion of the left motor area. The outer surface of the skull was intact. The opening of the lacerated dura was enlarged, the coagulated blood removed and the cortex exposed. The latter's surface was found intact; no laceration could be seen.

Result.—The patient gradually improved and finally recovered. The mental hebetude completely disappeared. During the first two days the knee-jerk remained slightly exaggerated, but on the fourth day became normal. On the sixth day, the paradoxical reflex became fainter and on the twelfth day after the operation it could no more be elicited. It was interesting to observe its gradual diminution and disappearance and it was also interesting to notice its conspicuous presence on the morning before the operation and its gradual obliteration after the operation. The patient was subsequently seen by me several times during a period of two months and at no time could I detect the presence of an abnormal knee-jerk or of the paradoxical reflex.

This case, I believe, is the most striking illustration of my contention concerning the practical value of the reflex. Added to the first two cases published in 1906 and 1907,³ it furnishes decisive anatomic proofs for the *a priori* deductions made from clinical observations. The reflex has its diagnostic value and deserves a place in nosology of the nervous system.

In conclusion, I may mention that a systematic investigation was made by me in 800 individuals free from diseases of the nervous system, also in 250 cases of functional nervous diseases and at no time was extension of the toes elicited by the method employed by me for the detection of the paradoxical reflex.

1430 Pine Street.

THE AUTOLYSIS OF THE CRYSTALLINE LENS

A PRELIMINARY REPORT

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In the study of traumatic cataract and the needling operation, I was struck with the very scant description of the manner in which the lens becomes opaque and the causes for its opacity and final absorption.

Parsons¹ states that after exposure of the lens fibers to the action of the aqueous they swell up, become opaque, protrude through the capsular wound, and finally break up in the usual manner, absorption being largely due to the leukocytes, which become swollen and filled with granules.

Schlösser² (1887) in an article on traumatic cataract, and Schirmer³ (1889) have studied the microscopic changes very thoroughly, but without throwing much light on the cause of these changes.

Fuchs⁴ states that the fibers swell up and become opaque through absorption of water; some are broken off and drop into the anterior chamber and are absorbed. But he also says that concussion without rupture of the capsule may cause the development of complete opacity of the lens. He, however, fails to state just why this occurs.

De Schweinitz⁵ says that the opacity and liquefaction are explained by the action of the sodium chlorid of the aqueous on the globulin of the lens substance, as globulin is normally soluble in weak sodium chlorid solution.

This theory was, I think, first suggested by Marcus Gunn in 1899 in the *Ophthalmic Review*.

In further search of the literature on the subject I have found no elaboration.

In order to understand the subject it is necessary to have a knowledge of the chemistry of both the aqueous and the crystalline lens.

Halliburton gives the composition of calves' aqueous as in Table 1.

TABLE 1.—COMPOSITION OF THE AQUEOUS

Water	986.87
Solids	13.13
Albumin	1.12
Extractives	4.21
Inorganic salts	7.70
Sodium chlorid	6.89

Thus it will be seen that it consists practically of normal saline solution with a trace of albumin and extractives.

The composition of the lens as given by Neumeister is set forth in Table 2.

TABLE 2.—COMPOSITION OF THE LENS

	Per cent.
Water	63.50
Solids	36.50
Albumins	35.00
Insoluble albuminoids	17.00
Crystalline (b)	11.00
Crystalline (a)	6.80
Albumin	0.20
Fats .....	.29
Lecithin .....	.23
Cholesterolin .....	.22
Salts .....	.80

It will be seen that the lens contains 35 per cent. of protein, the highest protein percentage of any tissue of the body. Of this 35 per cent. protein, 17 per cent. is in the form of an insoluble albuminoid which is insoluble in normal saline or water.

It is a true albumin and constitutes most of the lens fibers, its amount increasing from without inward in accordance with the increasing age of the lens fibers. The remaining protein consists of a small amount of serum albumin and two vitellins which are soluble in dilute saline or in water.

If these analyses are correct, we have great difficulties in explaining the foregoing theories.

I can hardly agree with Parsons' statement that most of these fibers are carried off by the leukocytes. In the first place, if there is no infection there should not be many polymorphonuclear leukocytes about, as they occur chiefly in inflammatory troubles; and secondly, it would not explain the traumatic cataract with absorption in those cases of concussion without rupture of the capsule.

Fuchs seems to keep on the safe side by simply stating that the fibers become opaque and are finally absorbed, and by giving no explanation for the cause of the concussion cataract.

De Schweinitz's promulgation of Marcus Gunn's suggestion is, if the chemistry be correct, entirely untenable. To be sure the (a) and (b) crystalline bodies would be dissolved out either by water or the aqueous, but the insoluble albuminoid which makes up the greater portion of the protein, and which occurs chiefly in the lens fibers, is insoluble in either the water or the saline.

It is easily seen from a study of the chemistry of the lens why it becomes opaque either after injury with the entrance of aqueous or even from concussion. In case of rupture of the capsule and entrance of the aqueous there would occur an immediate precipitation of this insoluble albuminoid, while the remaining portions

1. Parsons: The Pathology of the Eye, 1904.
2. Schlösser: Experimental Studies on Traumatic Cataract, 1887.
3. Schirmer: Arch. f. Ophth., 1889.
4. Fuchs: Text-Book of Ophthalmology, 1908.
5. De Schweinitz: Diseases of the Eye, 1910.

would be soluble and could be carried off by the circulation of the aqueous. In cases of concussion without rupture of the capsule, there undoubtedly occurs some rupture of the lens fibers, and then this insoluble albuminoid is brought into contact with the lens lymph which acts in the same manner as the aqueous in precipitating the albuminoid.

But what is the factor which causes the solution of this albuminoid so that it can pass off in the circulation?

As we have known for several years that most of the organs and tissues of the body show autolytic activity under favorable conditions, we believe that this autolytic action also takes place in the lens substance after the rupture and breaking up of the lens fibers. There is also quite a possibility that there is some ferment in the aqueous which hastens this action. It is more probable, however, that the aqueous serves its chief purpose in carrying off the liquefied lens substance. Therefore, in order either to prove or to disprove our theories, the following experiments were carried out, using calves' eyes as the working material. They were enucleated at the abattoir and transported immediately to the laboratory and kept on ice until used, which was always within six hours after enucleation.

Nov. 1, 1909, I received thirty calves' eyes and drew off the aqueous with a sterile hypodermic needle. The lenses were removed and macerated, then diluted with normal saline solution, so as to make a dilute solution of lens albumin of about 1 per cent. This was agitated so as to make as nearly a homogeneous suspension of the insoluble portions as possible, and 5 c.c. were measured into three test-tubes. To the first were added 5 c.c. of the aqueous solution. To the second were added 5 c.c. of the boiled aqueous. To the third were added 5 c.c. of normal saline solution. These were stoppered tightly and placed in an incubator at 36 C. and allowed to remain for twenty-two days.

Chloroform and toluol were added to prevent bacterial action. They were then removed and the amount of soluble nitrogen was determined in each tube. They were precipitated by the action of heat and acetic acid, filtered and washed, and the amount of nitrogen determined in the filtrate by Kjeldahl's method, which consists of digesting with concentrated sulphuric acid and copper sulphate and distilling the remains, after rendering strongly alkaline, into a measured amount of tenth-normal sulphuric acid and titrating the excess of the acid.

By this procedure I obtained the results shown in Table 3.

TABLE 3

No. 1.—5 c.c. lens albumin 5 c.c. aqueous	= 2.1675 c.c. N/10 H ₂ SO ₄
No. 2.—5 c.c. lens albumin 5 c.c. boiled aqueous	= 1.9675 c.c. N/10 H ₂ SO ₄
No. 3.—5 c.c. lens albumin 5 c.c. normal salt	= 0.8175 c.c. N/10 H ₂ SO ₄

By this experiment it appears that the boiling of the aqueous has some inhibitory effect on its action on the lens albumin. It also appears that the aqueous either increases this process, or at least hastens it, because as will be seen, there is over twice as much soluble nitrogen in No. 1, which was combined with the unboiled aqueous, as in No. 3, in which there was only salt solution.

On account of lack of aqueous these experiments were not done with a control, so that the results are open to more criticism than they would otherwise be. All other experiments along similar lines with equal quantities of lens and aqueous were spoiled so that I lack confirmatory evidence, which I hope I shall be able to supply shortly.

Nov. 8, 1909, I started another series in the following manner:

Twenty calves' lenses were macerated with the accompanying aqueous, 15 c.c., and the whole made up to 500 c.c. with normal salt solution. Chloroform and toluol were added to prevent bacterial changes.

The preparation was then placed in a tightly stoppered flask and set in an incubator at 36 C., a measured amount being removed from time to time and the soluble nitrogen being determined by precipitating with heat and acetic acid and doing the Kjeldahl test on the filtrates as in the preceding experiment, with results given in Table 4.

TABLE 4.—VARIATIONS IN SOLUBLE NITROGEN AS DETERMINED BY HEAT AND ACETIC ACID

Date	N/10 H ₂ SO ₄ , c.c. Required by Soluble Nitrogen in 100 c.c.
11/ 8/09.....	4.8000
11/16/09.....	2.6750
11/23/09.....	3.5875
11/30/09.....	4.3375
12/ 7/09.....	3.9625
12/15/09.....	3.8375
1/ 5/10.....	4.0875
2/17/10.....	5.9625
3/17/10.....	5.8375
5/23/10.....	8.1175
10/25/10.....	8.9125

The autolytic material was now set at room temperature until October 25.

As will be seen by a glance at these figures there was a considerable lessening of the soluble nitrogen immediately after starting the process, after which, with practically one exception, a gradual rise until the quantity was nearly twice that of the original amount.

This initial decrease could be explained by the possibility of a reversible action of the ferment and a building up instead of a tearing down, as is seen in some other instances in physiologic chemistry, notably some of the fat ferments.

The influence of the small amount of aqueous in this experiment was, I believe, almost *nil*, as I will show in the following experiment a similar picture without the presence of any aqueous.

Nov. 18, 1909, twenty calves' lenses were macerated and made up to 500 c.c. with normal saline solution. Chloroform and toluol were added and placed in an incubator at 36 C., being placed in a tightly stoppered flask to prevent evaporation; 20 c.c. was removed from time to time and the precipitable protein removed by Abeles' method, which is as follows:

Fifty c.c. of absolute alcohol, 2.5 gm. zinc acetate, and 50 c.c. of the fluid are mixed and allowed to stand ten minutes and then filtered through a filter moistened with alcohol; the residue is rubbed up in a mortar several times and filtered; the zinc is precipitated with 20 per cent. sodium carbonate solution; this is filtered, acidulated with acetic acid, evaporated and a Kjeldahl test done on the filtrate.

This method is claimed to give more accurate results than the heat and acetic acid method. By the use of this method I obtained the following results:

TABLE 5.—VARIATIONS IN SOLUBLE NITROGEN BY ABELES' METHOD

Date	N/10 H ₂ SO ₄ , c.c. Required by Soluble Nitrogen in 100 c.c.
11/18/09.....	1.8375
11/22/09.....	2.5875
11/29/09.....	2.4625
12/ 6/09.....	2.5875
12/14/09.....	2.3275
1/ 3/10.....	2.4625
2/14/10.....	3.4625
3/17/10.....	4.4625
5/23/10.....	7.3675
10/20/10.....	7.3675

Set at room temperature until October 20.

In this and the preceding series, double estimations were made and when there was a variation the average of the results were taken.

It will be seen, as in the preceding experiment, that there was very little change for the first three months

and then there was such a pronounced change that one could hardly believe it to be accidental.

Here, as in the preceding series, there was little or no action while the material was at room temperature, from May to October, 1910.

Whether this was due to the slightly lowered temperature I cannot say. Neither can I say whether the increase in soluble nitrogen would have continued, as I had insufficient material to continue the experiment.

The tryptophan reaction was negative in both of these last experiments, on Dec. 11, 1910, showing that there was no very active ferment at work which would split up the amido-acids. Both preparations were tested for bacterial growth Dec. 12, 1910, by inoculating slant agar, with negative results.

If further investigation confirms my preliminary findings, then I think that it is safe to say that when the lens fibers are broken up they undergo autolytic changes. Whether this is increased by the action of some specific enzyme in the aqueous or whether it is due entirely to autolysis, it is difficult to say. If this be a ferment, then what is its source? Is it produced through the breaking up of the lens fibers, or is it derived from the circulating lymph? These questions I cannot answer.

These results coincide nicely with the facts as we know them. The lens of the young is much more easily liquefied and carried off, from the fact that there is less of the insoluble albuminoid present and the enzymes are all very active. In the aged, on the contrary, there is a much larger amount of the insoluble portion and all of the enzymes are relatively weak.

In closing I wish to thank Dr. E. L. Whitney for his many kind suggestions, and for the use of his private laboratory and apparatus at the Baltimore Medical College.

412 Cathedral Street.

TESTS OF THE VIRULENCE OF DIPHTHERIA BACILLI *

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Many times the laboratory worker is requested to test the virulence of diphtheria bacilli, especially in cases running for a long time, or in those occurring in institutions, and as we have had many interesting results from these tests we present some of them for consideration.

Our laboratory has always made virulence tests, on request either from the Board of Health or from the attending physician, the procedure being to isolate either by the streak-out method or surface seeding. For the former a series of eight or ten tubes is used, a fresh tube being inoculated from the incubated one; then, after sterilizing the needle, another from the freshly inoculated one, and so on through the series, taking from the first tube to the second, from the second to the third, etc., sterilizing the needle after inoculating each tube. In that way isolated colonies may be found on the later ones, as of course a smaller number of organisms is carried over each time. For the surface-seeding method five tubes are used, those being selected which contain a

fair amount of water of condensation. This is rubbed over the surface in order to insure an even distribution at the proper time. Inoculation is made directly into the water of condensation of the first tube, the needle is sterilized, and a loopful is carried into the water in the second tube; sterilization and inoculation being repeated throughout the series. The tubes are then laid down at the proper angle to cause the water to flow over the surface of the serum and allowed to remain for from two to five minutes, when they are taken up carefully and put into the incubator in the upright position. After incubation isolated colonies are "fished" and planted on serum and in sugar-free broth, and a microscopic examination is also made.

If there is no particular need for haste, or, in cases in which the organisms are very few, we sometimes make serum and microscopic examinations only, inoculating several colonies one above the other on a single serum tube, thereby making a great saving in the amount of media used; for many times we "fish" from twenty to forty colonies from a single series, especially from long-standing cases, the broths being made from the serum tubes after incubation.

These are incubated for forty-eight hours and pigs inoculated subcutaneously, using 0.5 per cent. of the body weight. The reaction may be local or general, or, as is usual in positive cases, both, and is generally present the following day, although a negative report is never given until forty-eight hours after the inoculation.

The virulence of morphologically typical diphtheria bacilli (Wesbrook's A C D) varies, not only in different cases but in different strains from the same case, from those absolutely non-virulent to those which cause death within thirty-six hours.

This was first brought to our notice in December, 1906, when a series of six pigs was inoculated, each with a different strain isolated from the same release culture.

In order to hasten the report one strain was inoculated at the end of the twenty-four hours and this proved virulent, the pig being so nearly dead on the second day that it was chloroformed.

The other five strains were all incubated for forty-eight hours and the difference in their virulence was very marked:

1. This was the pig previously mentioned.
2. This pig died on the eighth day, the reaction being local and general.
3. This pig died on the second day.
4. This pig showed a very slight local reaction on the second day, which increased slightly during the next week, but at no time was there a marked reaction. This pig was kept under observation for six weeks, complete recovery resulting.
5. This pig died on the ninth day.
6. In this instance there was a slight local reaction at the end of twenty-four hours which became more marked daily for some time and there was a slough surrounding the point of inoculation, the pig dying at the end of six weeks.

All of the above strains, grown fifteen hours on serum, were of Wesbrook's A A1 types. A rush of work prevented further tests at this time but an interesting problem had been presented.

Nov. 9, 1907, three pigs were inoculated with three strains isolated from a release culture, two dying within forty-eight hours and the other showing no symptoms; in order to rule out a possible difference in the resistance of the pigs we kept the cultures and eleven days later inoculated the surviving pig, and a new one to serve as a control, with the avirulent strain and at the

* Read before the Society of American Bacteriologists, at Ithaca, N. Y., Dec. 28-30, 1910.

same time another pig with one of the virulent strains; the first two showed a very slight local reaction the following day and the one receiving the virulent strain showed a marked reaction but lived three weeks from the date of inoculation, dying at that time. On the twenty-second, or two days after the last inoculation, the two pigs receiving the avirulent strain were re-inoculated—the original pig with the virulent strain and the control with the avirulent; the original pig developed marked local and general symptoms, dying on the eleventh day from the last inoculation, and the control never showed anything beyond a slight local reaction, from which a complete recovery was made within a few days.

Since this time we have endeavored to make inoculations from several strains from each case, although until recently we have not had a similar case. Aug. 14, 1910, three pigs were inoculated with three strains isolated from a release culture, one of which was virulent and two avirulent.

On several occasions we have been requested to make retests on cases running a protracted course, but it has been our experience that when it has been demonstrated that a virulent organism has caused the condition the virulence remains to the last, and two cases are presented:

CASE 1.—Duration from first positive culture to release by two successive negatives, seventy-six days. December 29, 1906, two pigs were inoculated, one dying on the second and one on the third day; December 30, one pig, which died on the second day. Jan. 17, 1907 (this was the last positive culture), two pigs were inoculated, both dying three days later.

CASE 2.—Culture was first taken Jan. 10, 1910, and a positive diagnosis returned; all symptoms disappeared within ten days, but the case ran until March 30, when the patient was allowed by the board to go into the country. Virulence tests, made January 28, February 13, and March 26, were all positive.

In general we have found the organisms persisting after a clinical case of diphtheria virulent, but the non-clinical carriers usually harbor non-virulent organisms, an example of this being presented before this society last year.¹ One of the conclusions drawn from that work was as follows: "Where virulent diphtheria bacilli are present, as shown by outbreaks of the disease, cultural tests of all contacts, and isolation of those showing positive cultures, is a duty owed to the community."

An illustration of the truth of this conclusion was demonstrated recently in an institution in which there are about 150 boys. Oct. 8, 1910, the first positive case was reported; another on the sixteenth, one on the twentieth, one November 3 and five on the fourth. This opened the eyes of those in charge and on November 6 seventy cultures were taken from the two cottages in which cases had occurred, fourteen of which were positive; on the eighth 136 cultures were submitted, of which six were positive. The clinical cases had been removed before the general culture taking began, so the last twenty positives were non-clinical cases; but of six cases on which virulence tests were made three were positive, from four to six strains being tried from all cases as follows:

Boy 1.—Six strains inoculated November 14, all positive, the pigs dying within forty-eight hours.

Boy 2.—Seven strains inoculated November 14, all positive, two pigs dying on the second day, two on the third, and three on the fourth.

Boy 3.—Seven strains inoculated November 16, all positive, two pigs dying on the second, four on the third, and one on the fifth day.

Boy 4.—Five strains inoculated November 16, and one December 11 from another culture; all negative.

Boy 5.—Three strains inoculated November 21 and two December 11; all negative.

Boy 6.—Four strains inoculated November 21, all negative; one strain December 1, the pig dying on the second day; two strains December 5 and ten strains December 12, being negative.

It occurred to us that possibly there might be a cause for the variation in virulence in the source of the primary infection. Accordingly the school hospital was consulted and we found that the first four boys, or three with virulent and one with avirulent organisms, came from the same cottage and the remaining two came from two other cottages where there had been no clinical diphtheria. Thus it will be seen that all the boys who were harboring virulent organisms came from a single cottage, and from this cottage most of the clinical cases had been taken, and that also a carrier of non-virulent organisms came from the same cottage. Boy 1, three days after the culture taking, became a clinical case and was sent to the contagious hospital, the others being isolated on the institution grounds.

It is interesting to note that those cases which showed a positive virulence at all times cleared up more quickly than the others. The last positive cultures from Boys 2 and 3 were taken twenty-one and twenty days, respectively, after the primary one, the others still being positive three weeks later.

While working on these institutional cases we had a few positive cases from another institution where they had a single clinical case, and the virulence was tested on two of them, one being the clinical case, and the other, one of the exposed children. From the clinical case five strains were inoculated, four of them being positive and one negative; of the positive pigs three died on the second and one on the third day; from the other case all three were positive, the pigs dying within forty-eight hours.

One other case occurred at the same time. A boy at home had clinical diphtheria and both his mother and brother had positive cultures. The mother's throat cleared within six days but the brother's persisted. A virulence test was made from the primary culture of the brother, who was never a clinical case, two strains being tested, one killing the pig on the third day, the other being non-virulent.

CONCLUSIONS

1. Clinical diphtheria is caused by virulent diphtheria bacilli.

2. As a rule, following clinical diphtheria, the organisms retain their virulence as long as they persist.

3. As a rule, virulent and avirulent bacilli are not found in the same case, but, as these cases do occur, several strains should be tested before they are reported non-virulent.

4. In diphtheria outbreaks a large percentage of the "carriers" harbor virulent organisms, although such carriers may develop no symptoms whatever.

5. Cultures should be taken from all contacts before terminating quarantine in all cases of diphtheria.

30 Huntington Avenue.

1. Slack, Arms, Wade and Blanchard: Diphtheria Bacillus-Carriers in the Public Schools, THE JOURNAL A. M. A., March 19, 1910, p. 951.

TREATMENT OF SINUS AND MIDDLE-EAR
DISEASE WITH THE VACUUM-PUMPJ. A. PRATT, M.D.
AURORA, ILL.

Careful study of the nose impresses one with the fact that the sinuses play a greater part in its troubles than we have ever imagined.

Many headaches which oculists formerly ascribed to eyestrain are now found to be caused by sinus trouble. As a rule, sinus headaches are easily diagnosed, as they are intensified by lowering the head, but frequently there are obscure cases in which diagnosis is difficult; it is well, therefore, in patients complaining of continuous or interrupted pain in the head, not increased by eye work, to make a thorough examination of the sinuses. Frequently the most painstaking examination fails to reveal pus at the natural openings of the sinuses. If the ostia are not patulous and the confined pus or secretion lacks the pressure necessary to force its way out, the physician is apt to miss the diagnosis of sinusitis and to ascribe the headache to some other cause. It is in such cases, that application of the vacuum-pump for a few minutes demonstrates the sinusitis by relieving the headaches. This is particularly true in acute cases, especially before they become purulent, and in my opinion the vacuum-pump should be used as a regular routine measure for diagnostic purposes in patients with these vague head symptoms.

In middle-ear diseases in which there is a patulous tube, the vacuum-pump is of inestimable value, as the secretions of the middle ear, antrum and even of the mastoid, if there are patulous openings, are easily drawn into the throat, the natural drainage spot. With suppurating otitis media with perforation the condition of the tube may be ascertained by inflation.

A suction-pump should never be applied to the external meatus, because while by this means the secretions are drawn from the middle ear and its adjacent cavities, one is also apt to draw germs and secretion from around the pharyngeal opening of the Eustachian tube up into the middle ear, and it is possible to reinfect or doubly infect that cavity. By covering a small cork with a piece of soft tubing and plugging the external meatus, after all available secretions have been swabbed out, and then applying the vacuum-pump to the nose the secretions are sucked out by the way that Nature intended they should go.

While we cannot tell positively the function of the different sinuses, we know that they must be well ventilated, and that the hypermoistened air and what little secretion is present are drained into the nose and pharynx by the vacuum pressure caused by the air as it rushes to and fro in the nasopharyngeal passage. In using the vacuum-pump we are simply magnifying Nature's method of emptying these spaces, and by this increase in power we are able to overcome partial stenosis of the ducts and openings leading from these sinuses to the upper air tract.

The first principle of good surgery is to drain if pus be present; and by use of the vacuum-pump, we are applying to these chambers this great principle. Relieving Nature of this extra work is frequently the turning-point in a cure.

Surgery should not be abandoned. Every nose should be made as nearly normal as possible so that there will be proper ventilation of the nasal chamber. All pressure should be removed from the openings of the

sinuses; then with the vacuum treatment the radical operation can frequently be avoided. Unless there are urgent symptoms, such as pain and necrosis, months instead of weeks, as recommended by Ballenger, should be devoted to this line of treatment, for all operators know that the radical operation is not followed by prompt recovery, and that frequently months of post-operative treatment are necessary. Whether the patient should have a radical operation or not must be decided by the physician. Knowing that pus under pressure is very virulent and destructive to tissue, we should at once relieve these cavities when they contain pent-up secretions, and this the vacuum-pump enables us to do.

By using the vacuum-pump we do not leave solutions in a sinus, nor do we infect cavities, as we are apt to do in the washing-out treatment.

Very little has been written on this subject and Ballenger's is the only book I have seen that mentions the vacuum method. The technic of using the pump is very simple. The patient's nasal cavity is thoroughly cleaned, and then sprayed with a 2 per cent. cocaine solution to contract the tissues and render the sinus openings more patulous. After the pump is attached to the water faucet, the patient is instructed to close one nostril and insert the nasal tip in the other; by swallowing, the soft palate is then raised and closes off the nasopharyngeal space, while the suction of the pump holds the velum tightly in place. As soon as the patient feels the suction he should open his mouth, allowing the tongue to lie perfectly relaxed and breathing through the mouth.

In my experimental work along this line, I find that ten minutes of actual suction is sufficient to empty the sinuses and to give their membranes a stimulating hyperemia.

When the discharge is very profuse, I give the treatment twice a day, and if necessary, I give the instrument to the patient for home treatment.

A report of a few cases may be of interest:

CASE 1.—Mr. S., aged 42, had chronic frontal sinus trouble for some years. When first seen some years ago, a deviating septum was operated on, and the anterior third of both middle turbinates removed, thus curing the right sinus by establishing good drainage. The left sinus still discharges, as the patient will come to the office only when in pain, caused by the retained secretion during nasal congestion. A treatment by the vacuum-pump relieves the symptoms for weeks. This is one of the many cases every physician has in which the patient is too busy to be cured.

CASE 2.—Miss B., aged 18, had had headache for three days, which was worse when the head was lowered. The nasal mucous membrane was congested; there was very little secretion. After five minutes' application of the pump the pain was entirely relieved. Treatments were given for three consecutive days; there was no pain or discomfort after the first treatment.

CASE 3.—Mrs. S., aged 45, had had intense frontal headache for six weeks; it was slightly worse on the left side. Glasses were fitted by two different physicians but with no relief of pain. Pain was continuous night and day; at times it was so great that the patient threatened to end her life if not relieved. The pain was exaggerated on leaning forward, and by jars. There was no discharge from nose or throat. The nasal examination showed no hypertrophies and the only discharge found was a very small drop of pus at the nasal opening at the left posterior ethmoid sinus. The vacuum-pump relieved the pain in two minutes, when a mucopurulent mass was blown from the left nostril; after the ten minutes' treatment there was absolutely no pain; a slight sense of fullness returned the next day but without pain. The patient was not seen for twelve days; there was no further complaint.

CASE 4.—Miss H., aged 16, a schoolgirl, came to be examined for glasses as her head had been aching for a week. Sinusitis was diagnosed; three treatments with vacuum pump effected a cure.

CASE 5.—Mr. H., aged 40, electrician, had previously been fitted with glasses. He has an extreme deviation of the septum to the left completely blocking the left nostril, and during the past year he twice set date for submucous operation. He complained of photophobia and pain in and over the left eye, radiating to the occiput. The pupil was contracted; there was no nasal discharge, and headache was not particularly increased by leaning forward. The pain was severe enough to awaken the patient. The pupil was dilated and he was sent home. On the following day there was no relief of symptoms, but the patient was relieved at once by application of the vacuum-pump, and there was no return of symptoms after the fourth treatment. The pump certainly corrected this diagnosis and as I look back I can recall many cases that would have been cleared up by this little instrument.

CASE 6.—Miss H., aged 25, has had progressive deafness with tinnitus and fullness of the ears for two years. There was partial stenosis of the nasal passage, which was relieved by operative means, and then inflations employed with benefit up to a certain point. After inflation, the patient would soon complain of stuffiness and noise. The vacuum-pump has started this patient on the road to recovery, as the serous secretion is now sucked from the middle ear; the sense of stuffiness and noise rarely returns and the hearing is now steadily improving, while before it was at a standstill.

There are great possibilities in these cases in which there is hypersecretion of the middle-ear and its accessory cavities. Many physicians are undoubtedly using the vacuum-pump, but in my clinical wandering I have not come across them. Future reports along these lines will be interesting.

A CASE OF PRIMITIVE OBSTETRICS

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History.—On Jan. 1, 1911, at 1:30 p. m., I was called to a negress, iii-para, age 22, unmarried, a domestic in a boarding house who had given birth to a boy at 3:30 a. m. of the same day under the following circumstances: Thinking herself pregnant for but seven months, she had made no arrangements for the birth of this child, as she had had twins about a year and a half ago, both children dying soon after birth. On Dec. 31, 1910, at 11 p. m., while alone in the house, she experienced a sudden pain in the abdomen which made her "double up." It soon passed off, and she thought it was simply cramp. In a short time pains began again, and she suspected that they were labor pains. After four and a half hours a boy was born. She waited till the placenta was born, and with scissors cut the cord about six inches from the umbilicus, and did not tie the cord which was still attached to the child. Washing herself as well as she could, and wrapping the child up in a blanket, she went to sleep. Next morning at 6:30 a. m. she rose, dressed, prepared breakfast for the family, did her other work, and then told her mistress what had happened early in the morning. She then wrapped all her bloody linen around the placenta, placed the bundle in a suit case, wrapped the child in some blankets, and went home on foot, a distance of six squares. Reaching home, which by the way was the home of the father, she went to bed and called me.

Examination.—I found the patient to be a fairly well-developed young woman, of apparent good health. Temperature was 98.6 F., pulse 65, respiration 18. Vaginal examination showed a slight median tear of the perineum, but the uterus was in normal condition following delivery. She was given a uterine douche. The child was fully developed, about 8 pounds in weight, and showed no marks or deformities. After

giving the child a bath, I tied the cord about one and a half inches from the umbilicus, and cut off the rest. This procedure was, I think, not absolutely necessary, as the cord was absolutely bloodless, but was done for sake of precaution.

Subsequent History.—The mother never had a temperature above 98.8 F., or a pulse rate above 70 during her six days in bed. She got out of the bed on Jan. 6, 1911, and went back to her position. The child is doing well, and seems in no way concerned as to the attention he received when he entered this world.

The long time the child was attached to the placenta, a period, so far as the mother can guess, of ten minutes, probably saved it from hemorrhage. This case seems to emphasize the point that in a normal case the less the attending physician does the better it will be for the mother.

44 West Cheltenham Avenue.

A METHOD OF STAINING GRANULAR CASTS AND OTHER TUBE PRODUCTS

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Since it is often desirable to stain and mount tube-casts for preservation, the following method is suggested as being simple and easily carried out, and at the same time showing distinctly many features difficult to recognize in the unstained specimen:

Sediment the fresh urine in a centrifuge: pour off the supernatant urine, and fill the tube with 0.4 per cent. sodium chlorid solution. Gently shake the deposit, centrifuge, pour off the solution, and repeat the washing, this time centrifuging till the sediment forms a dense clump at the bottom of the tube.

Slowly pour off the solution, invert the tube and allow it to drain for a few moments; the sediment will remain in the point of the tube.

With a long pipette transfer a small drop of sediment to a cover-glass, gently spread with a fine platinum wire loop, and dry in air. The spread must be thin.

Treat for three minutes with a 5 per cent. aqueous solution of mercuric chlorid. Wash thoroughly in water.

Stain for five minutes with a fresh mixture of equal parts of the following solutions: methylene blue, 0.3 per cent. aqueous solution; fuchsin, 0.02 per cent. aqueous solution; wash in water, dry, and mount in balsam.

To demonstrate fat, stain the fixed spread for five minutes with a solution of Sudan III in 70 per cent. alcohol. Wash in water, and apply the double stain as before. Mount in glycerin or glycerin jelly.

Mucin and chromatin stain violet to indigo, granular casts and protoplasm stain from pink to dark red, waxy casts stain bright red and fat globules bright orange.

One washing may suffice when the urine contains a very small amount of sediment. The stains may be used singly, first staining with fuchsin, washing in water and counter-staining with methylene blue.

Leukocytes and epithelial cells stain distinctly, the protoplasm of renal epithelium usually taking a dark red color, that of squamous epithelium a light pink. Red blood-cells may show a pale salmon color. Mucinous products are distinguished chiefly as filaments, agglutinations, showing their structure by longitudinal or spiral striations, and homogeneous casts. These forms merge into each other, there are no sharp dividing lines. They are probably not of much significance when not accompanied by granular casts.

Granular casts stain red and are thus more easily found than in the unstained sediment. Homogeneous casts staining red may be found in connection with granular casts. They are frequently of high density and refraction, assuming a waxy character. Epithelial cells may be embedded in mucinous, granular or waxy material.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

COMPRESSED OXYGEN: *Oxygenium compressum*.—Compressed oxygen is gaseous oxygen, O_2 , in a compressed state.

Compressed oxygen is a colorless, odorless and tasteless gas, slightly soluble in water and neutral to ordinary indicators. The gas is not inflammable but supports combustion much more vigorously than does air. Ignited carbon, sulphur, phosphorus and heated iron burn with an intense light in the gas. It colors colorless reduced indigo—carmine blue.

Compressed oxygen should be neutral toward litmus and when passed through an aqueous solution of silver nitrate no turbidity should be produced.

No color should be produced when 4 liters of the gas are passed through water containing potassium iodide and starch solution.

Not more than an opalescence should be produced when 4 liters of the gas are passed through an aqueous solution of barium hydroxide.

When 4 liters of the gas are passed through an aqueous solution of sodium hydroxide, then over heated platinum, and finally through an aqueous solution of barium hydroxide, no turbidity should be produced in the latter. When shaken in a gas burette with an alkaline solution of pyrogallol at least 94 per cent. of the gas should be absorbed.

Actions and Uses.—Compressed oxygen is administered for the purpose of relieving difficult respiration in cases of mechanical hindrance to the ingress of air to the lungs.

Dosage.—It is inhaled from a mouth piece attached to the cylinder.

TUBERCULIN PREPARATIONS (SEE N. N. R. (1911), p. 196)

Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M., Germany (Victor Koechl & Co., New York).

Triturated Tubercle Bacilli.—Used for the preparation of an agglutinating liquid for the detection of agglutinins in the blood serum of tuberculous patients. The bacilli are rubbed in a mortar with 0.8 per cent. sodium chloride solution containing 0.5 per cent. phenol and centrifugalized for a short time; the preparation is to be diluted 1 to 10,000 before using. Marketed in bottles containing 0.1 Gm. triturated tubercle bacilli.

Spinal Anesthesia and Shock.—The principal agencies in the production of surgical shock and collapse are those which make a sudden and deep impression on the central nervous system or the large sympathetic ganglia through the medium of the sensory nerves. Experimental researches have shown that if we block the passage of such impulses by means of a local anesthetic drug injected into the large nerve trunks leading from the part, or into the dural sac, we safeguard the patient against shock. Spinal anesthesia, therefore, prevents shock by blocking off the centripetal impulses passing to the nervous centers. To obtain a perfect result by this method it is essential to produce a complete block, otherwise shock to a greater or lesser degree will result.—E. C. Ryall, in the *Practitioner*.

Therapeutics

ASCARIS LUMBRICOIDES

ROUND WORM

Many years ago it was a common belief among members of the medical profession that large numbers of children suffered from worms. More recently, the presence of these parasites as the cause of unpleasant symptoms has been in a measure neglected by the profession. While mothers, nurses and friends have been quick to suggest worms as the cause of noticeable symptoms, physicians have ridiculed the idea with the result that many a physician has been humiliated by having exhibited to him a worm, which had been passed by a child, after he had expressed the opinion that there were no worms. The fact is that worms are sufficiently prevalent among children for the physician to bear in mind the possibility of obscure symptoms being due to this cause.

In the case of the *Oxyuris vermicularis*, or thread worm, the presence of itching about the anus is so common and so conspicuous a symptom that there is little excuse for overlooking the presence of the parasite, but with the *Ascaris lumbricoides*, or round worm, the case is different. One or more of these worms may be present in the intestine without giving rise to any symptom of sufficient importance to attract the attention of either the parent or the physician. This renders it all the more important that the physician should be on the lookout and consider the possibility of the presence of this parasite in any child, who for a considerable period suffers from indefinite symptoms for which no clear explanation can be found.

The round worm is considered by some to be the most common of the intestinal parasites found in the human subject, although others believe that the pin worm is more common. The round worm is of a reddish or brownish color, about $\frac{1}{4}$ inch in diameter, the size of a goose quill. The male varies in length from 4 to 8 inches, the female from 6 to 12 inches. The male is the more curved, and the female the straighter. It has been estimated that the genital tubes of a large, mature female may contain 60,000,000 eggs. The eggs after having been passed from the intestine are exceedingly tenacious of vitality, which may be retained even for two or three years. These worms live, also, in the intestinal canal of cattle and hogs, and the eggs may be conveyed with the excrement of these animals to fields where vegetables are cultivated, and either on such vegetables, which are not carefully cleaned, or in water which is consumed in the fields or at the table, the ova may be taken into the stomach of the human subject.

The eggs are destroyed by boiling, and may be removed by filtration, so that people who use distilled or filtered water need have little fear of becoming infected with the round worm. After having been taken into the stomach, in the course of one, two, or three weeks, the worm is hatched out and then continues to live, ordinarily, in the upper part of the small intestine. From this, its usual habitat, it may travel into the stomach, and is sometimes expelled from this organ by vomiting. Sometimes it comes into the throat, from which it may be removed by the fingers. Rarely it enters the larynx, where it may produce asphyxiation; or it may go into the trachea and produce gangrene of the lungs. Sometimes it enters the nose, and in rare instances has passed

through the Eustachian tube into the middle ear. From the intestine it may also enter the bile ducts. The intestine may contain a single worm, but generally there are several, perhaps six or eight, and over a hundred have been found. When there are very many, they may collect together into a mass, and may cause intestinal obstruction.

As has been stated, worms may be present in the intestine and give rise to no noticeable symptoms. Probably many of the symptoms which have been attributed to worms are not really due to them, but to some other condition.

The symptoms which are due to their presence are: transient pains in the abdomen of varying severity; changes in the appetite, either impairment of appetite or ravenous appetite; occasional attacks of diarrhea, the movements sometimes having a mucous character; sometimes nausea and vomiting; distention of the abdomen; loss of flesh; and itching about the anus and about the nose. Nervous symptoms are frequently attributed to presence of worms in the intestine. These may be restlessness, especially during sleep, irritability, choreic movements and, in rare instances, epileptic convulsions of greater or less severity.

The presence of worms is definitely determined by finding the worm in the feces. This is most likely to be possible after the patient has taken a cathartic. A more certain way of making the diagnosis, but one which, of course, is more troublesome, is to examine microscopically the solid residue obtained by filtering the liquid feces. If worms are present, their eggs will be found in the fecal matter.

Associated with the worm is a peculiar, disagreeable odor, which is characteristic, and which is believed by some to belong to a toxic product produced by the worm, which toxin gives rise to symptoms referable to the nervous system.

Treatment directed toward the removal of the worm should not be commenced until a positive diagnosis has been made. The drugs most frequently used to extirpate this parasite are santonin and spigelim. The one in most common use and most effective is santonin, though it is a drug that may readily cause poisoning and, therefore, should be used with caution, especially in young children.

As is so well understood in the treatment for the extirpation of a tapeworm, the emptier the upper part of the intestine is, the less food or nutriment the worms have had, the better will they partake of the drug that stupefies or kills them. After they are stupefied, ordinary catharsis will eradicate them. The younger the child, naturally the less severe must be the treatment.

Taking a child 5 years old as a type, it should be given a cathartic dose of a laxative at night, such as an aromatic fluidextract of cascara or the aromatic tincture of rhubarb. The next morning the child should receive for breakfast only a cup of weak tea or a cup of clam broth, just so that it will feel it has had something to eat. Then the specific should be used, either santonin or spigelim. If the child is weak, or much younger than 5 years, spigelim should be the drug relied on.

For a child 5 years old:

R	Gm. or c.c.	
Fluidextracti spigeliae	50|	or fl. ℥ii
Fluidextracti sennae	25|	fl. ℥i

M. et Sig.: One-half a teaspoonful, in water, every hour for three doses.

If it is thought best to use the more powerful drug, santonin, it may be administered as follows:

R	Gm. or c.c.	
Santonini	0|30	or gr. v
Hydrargyri chloridi mitis.....	0|20	gr. iii
Sacchari lactis	3|	gr. xlv

M. et fac chartulas 10.

Sig.: A powder, in water, every hour for three doses.

If the above does not move the bowels in four hours after the first dose of the vermifuge, some other cathartic must be given, such as castor oil, or such portion of a seidlitz powder as is advisable for the age of the patient. In an hour after the last dose of either the spigelia or santonin, the little patient may have a good meal. At any time during the treatment if the child seems weak, a little brandy stimulation should be given.

Wormseed oil (*oleum chenopodii*) has long been used to eradicate this worm, and is more or less efficient. The dose is about 5 drops, several times repeated. A cathartic should follow. When this oil is used, it may be given on a lump of sugar or in a teaspoonful of granulated sugar.

Whatever the treatment, it is advisable to repeat it in three days, and again in a week. After the catharsis is complete, in the latter part of the day of treatment, a catheter should be inserted through the rectum, well up through the sigmoid, and a colon wash should be given with a small amount of warm saline solution, stronger with salt than the physiologic saline. This will wash out many of the eggs of the worms that have not been removed by defecation.

While the above treatment seems more or less elaborate and looks almost like a surgical proposition, it is not good sense to dally with a patient who has these worms. They must be eradicated, if possible.

It should not be forgotten that an unhealthy condition of the intestinal tract is usually associated with the presence of the round worm, and a chronic catarrh of the intestine is conducive to their welfare and encourages their growth and persistence. Hence we should always, after the above treatment, carefully regulate the diet and give such medication, bismuth and soda perhaps, or magnesium, as will cause normal movements of the bowels and cure the chronic catarrh of the upper intestine.

SANTONICA, U. S. P.

LEVANT WORMSEED

This is also known as Aleppo, Alexandria or European wormseed. It is a small shrub, about a foot in height (*Artemisia pauciflora*), which grows in Europe and Asia, and the part used is the "dried, unexpanded flower-heads" (U. S. P.). These flower-heads are very small, and are of a pale, greenish-brown color, and have a camphoraceous odor and a bitter taste. They contain from 1 to 2 per cent. of santonin, about 2 per cent. of a volatile oil, artemisin, a resin and a gum.

SANTONIUM, U. S. P.—SANTONIN

Description.—Santonin is a neutral principle obtained from santonica, and is "the inner anhydrid or lactone of santonic acid" (U. S. P.). Santonin undergoes changes if exposed to the light. It occurs in shining, colorless prisms, has no odor, is not readily soluble, but if held long in the mouth gives a bitter taste.

Action.—Santonin is not irritant, very slowly dissolves in the stomach and intestine, and but a small amount, ordinarily, is absorbed. If much is absorbed, it causes

nervous phenomena, one of which is yellow sight, xanthopsia, i. e., objects look yellow. This is a harmless condition, and may last for from several hours to a day. It may be due to an action on the cerebrum or on the retina, as the fluids of the eye are not colored. If a poisonous amount is absorbed, the nervous system is seriously affected and the circulation is depressed. There may be also some kidney irritation. If there is much absorbed, the urine becomes yellow, which in the presence of an alkali is changed to red. A bloody-appearing urine after santonin has been administered should be treated with acid, which will change the color to yellow. This would differentiate the santonin product from blood. After the administration of santonin, it is not unusual to have increased frequency of urination, and sometimes irritability of the bladder.

Fortunately, but a small portion of the drug is absorbed, and this is absorbed as sodium santoninate. The major part of the drug ingested passes through the intestine unassimilated and stimulates the intestine somewhat, causing increased peristalsis. It has not been determined whether santonin stupefies the round worm, or whether it sets up an intoxication of the worm which kills it. At any rate, the round worm, under the influence of santonin and a cathartic, is expelled, sometimes dead, sometimes alive.

Toxic Action.—If a poisonous amount of santonin is absorbed (and if santonin remains long in the stomach and intestine such an amount is readily absorbed) the hands and feet become cold, the face pale, there may be profuse perspiration and a weak pulse, typical collapse symptoms. On the other hand, there may be dizziness, tremblings, and convulsions, followed by coma, and death from failure of the respiration. The treatment is rapid evacuation of the stomach and bowels, the administration of strychnin, coffee and whiskey or brandy if there is circulatory failure, and the application of dry heat to the body. If the nervous symptoms are much in evidence, and especially if there are convulsions, inhalations of chloroform should be given, and then later the collapse symptoms treated.

Therapy.—There is only one legitimate use for santonin, and that is to remove the *Ascaris lumbricoides*, or round worm of the intestine. It has been recommended and used for incontinence of urine in children, in epilepsy, and in some diseases of the retina and optic nerve, but there is no justification for such use of this drug.

Administration.—It has been stated that an oil would cause this drug to be more readily absorbed, and therefore, poisoning could more readily take place. This seems not to be true. In fact, castor oil administered with, or perhaps better an hour or two after the santonin, is a preventive of its absorption.

The dose for a child 5 years old is 0.03 gram ($\frac{1}{2}$ grain), well combined with a small dose of calomel. This dose may be repeated once an hour for three times, and then not repeated for at least three days.

Sodium santoninate is more soluble, and therefore more rapidly absorbed than santonin, and hence is more dangerous than santonin, and should not be used.

It is needless to state, after the description of the above toxicology, that santonin should not be given carelessly to young children. In fact, it should not be sold by a druggist except through the prescription of a physician. Serious poisoning not infrequently occurs.

Official Preparation.—*Trochisci santonini*, troches of santonin, contain 3 per cent. of santonin, with sugar,

tragacanth and a small quantity of orange flower water. Each troche contains 0.03 gram ($\frac{1}{2}$ grain). The dose for a child 5 years old would be one tablet, thoroughly chewed up, every hour for three doses, this followed by a cathartic.

SPIGELIA, U. S. P.

PINK-ROOT

Description.—Spigelia, genitive *spigeliæ* (*Spigelia marilandica*) is a plant of the states around or near the Potomac River. It is variously known as the Maryland, Carolina or Indian pink; often also called worm weed and American worm-root. The plant grows to a height of one or two feet, and the part official is the dried rhizome and roots. It contains a volatile alkaloid, spigelin, a bitter principle, a volatile oil, resins, tannin, wax, fat and a gum.

Action.—This drug has no special action externally. When taken internally it causes, ordinarily, no systemic effects. If it remains long in the intestine not accompanied by or soon followed by a cathartic, enough may be absorbed to be depressant to the nervous system and circulation. In exceedingly rare instances it might cause irritation to the nervous system and could cause death. In the intestine it exerts a stupefying or toxic effect on the round worm, and catharsis completes the extirpation of the parasite. The drug passes out of the body principally by the intestines, without any absorption having taken place.

Toxic Action.—It is exceedingly rare for any toxic effect to occur from spigelia. If, however, it remains long in the alimentary tract, enough could be absorbed to cause muscle and circulatory weakness, impairment of vision, dilatation of the pupil, possibly delirium and convulsions, with general paresis and coma. Such action from this drug, however, is exceedingly rare, and could only occur when the mistake was made of not combining in some way the administration of the drug with a cathartic. The treatment would be evacuation of the stomach and bowels, cardiac stimulants, especially strychnin, and surrounding the body with dry heat.

Therapy.—The only therapeutic use for spigelia is to promote the removal from the intestine of the round worm, and occasionally to aid in the removal from the rectum of the pin worm.

Official Preparation.—*Fluidextractum spigeliæ*. The single dose for a child of 10 years is 5 c.c. (1 fluidram), a teaspoonful.

Administration.—The fluidextract is the best preparation of this drug, and it is used combined in the same prescription with the fluidextract of senna, with one part of the fluidextract of senna to two parts of the fluidextract of spigelia, and the dose for a child five years of age would be about one-half a teaspoonful of the mixture, every hour for three doses, and then if the bowels do not move in two or three hours, some brisk purgative should be given.

For efficient action of any anthelmintic the bowels should be well moved some hours previous to the administration of the anthelmintic, and any nourishment given during the period of activity of the treatment should be either simple bouillon or weak tea.

It should be remembered that spigelia does not kill round worms, but stupefies them; consequently, if good cathartic action does not soon occur after the administration of the spigelia in combination with a laxative, a brisk cathartic, as a saline, should be administered, else the worms revive and are again difficult to remove.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, MARCH 18, 1911

ANIMAL EXPERIMENTATION

The Bureau for the Protection of Medical Research of the American Medical Association has had prepared, by experts in the several fields, pamphlets on the relation of animal experimentation to practical medicine and surgery.¹ The latest pamphlet and one of the best and, we believe, most effective of the series, on "Some Characteristics of Antivivisection Literature," is by Dr. W. B. Cannon, the chairman of the bureau.² In it the nature of antivivisection methods is discussed after an extensive study of antivivisection pamphlets, leaflets and letters to the daily press.

The antivivisectionists have always made much of the testimonials of physicians in their behalf. Examination of the list of physicians whom they quote gives an instructive revelation of the methods of the agitators. Sir Charles Bell, dead nearly seventy years, secured the final proof of his greatest discoveries by experiments on animals done a hundred years ago; he is quoted as opposed to present methods of medical research. The address of Dr. Henry J. Bigelow, delivered forty years ago and based on experience in pre-anesthesia days, is quoted without reference to a later letter in which he admitted the utility of experimentation and objected sharply to the failure of antivivisectionists to discriminate between painful experiments and those in which pain is minimized. Dr. Lawson Tait, known generally as "a man of wild statements," whose denunciation of Koch, Pasteur and Lister has been widely quoted, is shown to have "enjoyed being in a minority," which led him to champion many lost causes.

Other physicians, whose opinions are quoted in antivivisection pamphlets, are as follows: Dr. Charles Clay, born in 1801, "interested in geology and archeology and collector of fossils." Dr. Charles Spooner, born in 1806, veterinary surgeon. Dr. John Elliotson, born in 1791, mesmerist, and founder of a mesmeric hospital. Dr. J. E. Garretson, born eighty-two years ago, and Dr. Elizabeth Blackwell, born eighty-nine years ago. Sir William Fergusson, M.D., born more than a century since, said to be ill-advised in some expressions of opinion, "espe-

cially in matters requiring more knowledge of physiology and hygiene than he possessed." Charles Bell-Taylor (dead in 1909, aged 80) who originated the widely quoted sentence: "Pasteur does not cure hydrophobia, he gives it"; and who, ignoring our great debt to animals for the medicines that induce sleep, for all those that give us local freedom from pain, for physostigmin, amyl nitrite, epinephrin, and many others, told his antivivisection admirers that experiments on animals have yielded us no knowledge of drugs. Sir Richard Owen, M.D., comparative anatomist and zoologist, born in 1804. Dr. John Abernethy, who died in 1831. J. J. Garth Wilkinson, born ninety-eight years ago, holder of an honorary M.D. degree, poet, mystic, expositor and editor of Swedenborg, author of "Improvisations of the Spirit," etc.

Information regarding the living "physicians and surgeons of greatest eminence" was obtained from the little autobiographies in "Who's Who." Dr. Arabella Keneally sets herself down as novelist and contributor to magazines, author of "Molly and Her Man of War," "Some Men are Such Gentlemen," and other volumes. Dr. W. Gordon-Stables describes himself as novelist, journalist, professional writer for twenty-four years, author of 136 books and serial novels; "In the Dashing Days of Old" and "The Pirates' Gold" are cited as examples. Dr. W. R. Hadwen is secretary of the British Union for the Abolition of Vivisection, public advocate of the repeal of the vaccination acts and the prohibition of experiments on animals; is engaged in reform movements relating to temperance, food, hygiene, sanitation, education, and burial laws; he finds his recreation in changing his occupation. Dr. Edward Berdoe, born seventy-four years ago, reports himself as a writer; author of Browning studies, "Browning and the Christian Faith," "A Browning Primer," "The Browning Encyclopedia," "The Biographical and Historical Notes to Browning's Complete Works," and several other books; also editor of the *Zoophilist*. Dr. Josiah Oldfield is given as a lawyer, and senior physician to the Lady Margaret Fruitarian Hospital, strong advocate of the fruitarian diet; author of "Flesh-Eating as a Cause of Consumption," "Butchery and Its Horrors," and other volumes. Dr. J. D. Buck, 72 years old, is said to be president of the Theosophical Society of Ohio, author of "Nature and Aims of Theosophy," "Mystic Masonry," "Why I am a Theosophist." Dr. Stephen Townsend is given as novelist, surgeon, and actor, on the stage for years, playing prominent rôles in "Sowing the Wind," "Slaves of the Ring," "Black Tulip," and others.

This completes the list of "eminent" physicians and surgeons who have opposed vivisection, concerning whom any characterization whatever was found—the rest are not of sufficient importance to be mentioned in any of the dictionaries or cyclopedias of biography searched through for information. And this is the array of medical experts who have denounced the method of

1. See advertising page 34, this issue.

2. Critic and Guide, February, 1911

investigation which, according to Osler, "did more, in the half-century between 1850 and 1900, to emancipate medicine from the routine and thralldom of authority than all the work of all the physicians from the days of Hippocrates to Jenner."

Dr. Cannon next examines some of the accounts of experiments cited in antivivisection pamphlets, and shows how persistently the opponents of medical research have refused to correct serious misstatements regarding the work of medical investigators. Fifteen years have passed since Dr. H. P. Bowditch pointed out the absurdity of the charge that supreme "agony" was caused by stimulating a piece of nerve separated from the central nervous system—the slander is still being distributed. Ten years have passed since Dr. W. W. Keen laid bare in *THE JOURNAL* instances of repeated interpolations, mistranslations, and garbled, inaccurate accounts of experiments in a single antivivisection publication—the New York Antivivisection Society is now circulating literature in which the deceptions and evil insinuations are still retained. Two years ago, Dr. F. S. Lee again indicated publicly definite instances in which the antivivisectionists were deluding the public—in pamphlets now sent broadcast these misrepresentations are still present, unchanged. Two years are not enough for the antivivisectionists to learn a proper sense of honor, nor are ten years, nor fifteen, for during these long intervals there has been no attempt of the prevaricators to reconstruct their statements in conformity with the facts.

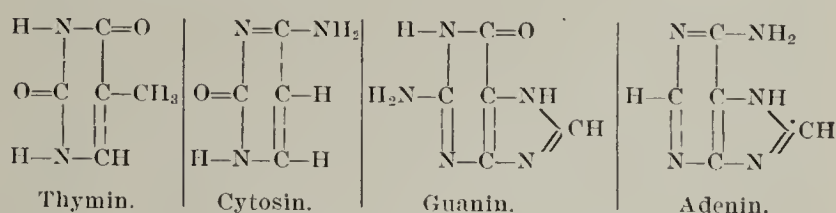
In conclusion, Dr. Cannon points out the fundamental wrong committed by the antivivisectionists, which is the presentation of accounts of medical research without any reference to its motives or its triumphs. They fail to express the important issues of disease and death which depend on the results of medical investigations, and they refuse to recognize that by the sacrifice of some animals the chances for life and health for mankind and for myriads of other animals as well, are enormously enlarged. The accounts of these inestimable blessings which have resulted from animal experimentation are now available to everyone in the pamphlets above referred to published by the American Medical Association.

It is clear from the considerations given in this pamphlet that before the antivivisectionists can command the respectful attention of intelligent people they must fundamentally change their tactics. They must clear their literature of the superseded testimony of men long since dead, men who had no conception of the merciful procedures of modern experimentation, or of its life-giving results. They must rid their publications of the testimony of "experts" whose reputations, such as they are, were made in literature, art or theology, and not in medicine. They must purge their propaganda of the fraud and trickery and evil insinuation that have for years characterized it. And the process of making their methods clean and their ways straight should

involve paying some respect to the high purpose of biologic investigation and its beneficent achievements for human welfare, which together give meaning and sanction to the experimental use of animals.

THE CHEMISTRY OF THE NUCLEINS

There is probably no field of science in which greater progress has been made recently than in organic chemistry, and not the least spectacular development of this has been along physiologic lines. Late years have witnessed a fairly adequate solution of the riddle of proteid composition, and in a recent article Kossel,¹ himself among the foremost investigators, summarizes the progress made toward the analysis of a similar problem—the composition of the nucleins. Nuclear materials from manifold sources all indicate these substances as the essential element in the composition of the nucleus; and when the importance of the latter is realized in all processes that are considered most peculiarly vital, the value of the study of the nucleins can be appreciated. In general it has been found that these can be split into two main constituents, a proteid and nucleic acid. The former does not differ radically from proteids from other sources; and it is the composition of the latter that forms the main problem of this particular phase of organic chemistry. By subjecting various nucleic acids to the less powerful means of chemical decomposition, it is possible to obtain certain groups which, by their junction, apparently build up the complex molecule. The nitrogen-containing groups so far found are four in number—thymine, cytosine, guanine, and adenine. The two former have a single, the two latter a double, carbon and nitrogen ring—this last being the so-called purin ring.



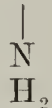
The remaining part of nucleic acid can in turn be broken up into two main constituents—phosphoric acid and a carbohydrate.

Although the chief groups entering into nucleic acid are thus enumerated, their quantitative relations and their arrangement in the molecule still remain to be investigated. In regard to the former point, it has been found that for each of the four nitrogen-containing groups there are in the molecule one each of the carbohydrate and phosphoric acid groups, thus giving at the very least twelve of these simpler bodies for each nucleic acid molecule. Needless to say, the nucleic acids from various sources differ in composition, and there are countless ways in which this may occur. So nucleic acids have been found in which one or more of the four

1. München. med. Wchnschr., 1911, lviii, 65.

nitrogen-containing groups are absent. The carbohydrate in turn may have only five carbon atoms, instead of the usual six, or conceivably even less.

The proteid and nucleic acid, forming by their union a nuclein, may vary considerably in the way they are joined. In some cases the union is a feeble one, and in others it is so strong as to offer obstinate resistance to decomposition. One of the chief sources of material for the study of the nucleins has been the heads of spermatozoa of various animals, and it is a peculiar fact that the firm type of union has been found in the sperm nucleins of warm-blooded animals, while lower forms of life have the other type. Unfortunately, not enough work has as yet been done to justify generalization on this point. In those cases in which the proteid molecule has been found loosely held, the union is similar to that of a base and an acid to form a salt. Such proteids are much more strongly basic in character than usual, and the explanation has been found in their chemical composition. The groups forming a proteid molecule are for the most part of the "amido-acid" type—that is to say, they possess an acid as well as a basic, amido (NH_2) radicle. A simple instance of such an amido-acid is amido-acetic acid, $\text{H}_2=\text{C}-\text{COOH}$, in which the COOH group pos-



sesses acid, the NH_2 basic properties. In the more complex amido-acids there may be more than one amido group, and it is of this type that the basic proteids—those found loosely bound to the nucleic acid—are composed. Other more complex nitrogen groups, that also impart basic properties to the molecule, occur in them as well, giving these proteids a nitrogen percentage much higher than that of the more usual forms.

It will be seen that considerable progress has already been made toward the solution of the problem of nuclear composition. Since it is the chromogenic—the nuclein—portion of the nucleus that initiates cell division and, according to our present belief, transmits the hereditary functions of all life, the further developments of this subject assume an importance far beyond the scope of the chemical problems involved.

VAN 'T HOFF AND MEDICAL SCIENCE

There are certain persons who are fond of insisting that the fundamental medical sciences should be taught in what they are pleased to call a "practical" manner. They resent the growing tendency to insist that the preliminary education in science subjects should be given in colleges and universities rather than in the medical schools. "Medical chemistry and medical physics," they say, "should be taught by medical men in medical schools, so that the students may learn what is of practical use to physicians without wasting their time on matters of mere theory."

If a refutation of these arguments were necessary there could be found no illustration better than that furnished by the entrance of physical chemistry into medical science. How many men who were taught chemistry in the average American medical school by the "practical teacher" two decades ago, or even half as long ago, were given the slightest inkling of the then theoretical subject of physical chemistry? We doubt that there were any—certainly they were few, and fortunate in that their teachers were less "practical" than they were supposed to be. Yet at this time the same graduates, now in their best years, know that progress is being made behind what to them must remain a closed door, unless they have the time and the rare energy to go back and make up one of the many defects in their training, for which not they themselves but a faulty system of education is responsible. None of us can foretell what direction progress will take, and we know not which scrap of theory of to-day will be the foundation of our great advances a few years hence. The plant cells and salt solutions of de Vries and the semipermeable membranes of Traube, unknown to the medical teacher two decades ago, were then pointing out lines of investigation whose fruits are now being reaped by physiology and pathology, and prepared for the clinical medicine of the near future. Therefore we must teach our fundamental sciences as sciences, and provide our students with a grasp of principles which will enable them to understand the new developments in these sciences, rather than equip them with a catalogue of supposedly useful information which may be useless slag by the time their diplomas are framed.

We are impelled to the foregoing reflections by the news of the death of Prof. J. H. van 't Hoff, the eminent Dutch chemist, since 1895 professor of general chemistry in the University of Berlin, and in 1901 awarded the Nobel prize for physicians. His was one of the great minds in which were developed the fundamental ideas which have brought physical chemistry into the foreground during the past quarter of a century, and for the assistance afforded to physiology and pathology over many hard places in their road by this new arm of chemistry must medicine be grateful.

The botanists Pfeffer and de Vries developed many of the fundamental facts on which depends the theory of osmotic pressure, advanced by van 't Hoff in 1885, and on which his fame most largely rests. This theory, amplified, and corrected as to certain features by the discovery of Arrhenius of the principles of electrolytic dissociation, has been of the utmost service in all the biologic sciences. It is, indeed, impossible to consider any vital phenomena without taking into account the osmotic pressure of the solutions in which they occur, and the influence of the diffusion membranes which form the cell walls and the nuclear boundaries. To understand hemolysis, phagocytosis, absorption, secretion, edema, expansion and contraction of cells, the

action of drugs and poisons, without a real knowledge of the principles of solution and osmotic pressure, is entirely out of the question, and the terminology of physical chemistry is as familiar to the well-trained medical student to-day as was Gray's "Anatomy" to the student of an earlier generation. It is perfectly safe to say that physical chemistry will give fully as much to medicine as organic chemistry, and it is our duty to realize that it is to such masters as van 't Hoff, who furnish us with principles, that we are indebted, more than to those who merely apply them to our immediate needs and uses.

ADVERTISING—LAY AND MEDICAL

The fight during the last five or ten years for decency and truthfulness in advertising has had one result: many newspapers and magazines no longer accept advertising "copy" in which untruthfulness and fraud are evident. As a corollary of this state of affairs, many advertisers no longer prevaricate in the advertising pages of the journals they patronize; they confine their untruthfulness to the circular letters and advertising leaflets which they send out direct. For this reason it has become increasingly difficult to convince publishers that many a firm whose advertising they accept is perpetrating a fraud on the readers of their magazines and newspapers.

This point was recently emphasized in a letter from the editor of a popular health magazine—*Life and Health*—calling attention to the degree of watchfulness that a publisher must exercise, if he desires to keep his advertising pages clean. The editor in question sent us a booklet issued by a firm that advertised in his magazine—the Robinson Manufacturing Co. of Toledo, Ohio. This concern manufactures and sells portable Turkish-bath cabinets—devices, one would imagine, that could be sold on their merits. The advertisements, as they appeared in different magazines, were practically unobjectionable; the booklet, however, sent direct from the company to the prospective customer, contained the most preposterously false and fraudulent claims. For example:

"Kills the poisons of nearly every disease known to physicians."

"Quickly destroys the uric acid of rheumatism and malaria."

"Destroys the germs of consumption or tuberculosis by the heat produced."

These are but some of the claims made for the Robinson bath cabinets. The editor of *Life and Health* says that as soon as he saw the booklet, he at once rejected the firm's advertising on the grounds that he does "not believe it is consistent with our policy of teaching right principles to advertise such literature."

The effect this action had on the advertising agent of the magazine was thus described by the editor:

"I have constantly refused to accept this class of advertising, and it has rather 'queered' our advertising agent, who thinks I have taken an extreme view of things, and it cer-

tainly has been a policy that has very greatly diminished our advertising receipts. It is not a policy that helps our subscription list very much."

We have here, briefly, the problem that confronts the publisher of every journal, lay or medical, when he uses discrimination in the acceptance of advertisements. It is not surprising that the advertising agent thinks the publisher of a lay journal is "extreme" when he refuses to accept any advertisement that finds acceptance in supposedly reputable medical journals. Yet, we find a well-known New York medical weekly as well as other medical journals carrying advertisements of this bath cabinet and reputable physicians lending moral and financial aid to these journals both by subscribing for and by contributing to them. No wonder newspapers and magazines accept advertisements of things of a medical nature that are fraudulently exploited, so long as medical journals will accept similar advertisements! Nor is it surprising that the physician who writes to a lay publication, protesting against the medical advertisements therein, receives a letter suggesting that, before the medical profession tries to reform the lay press, it should first clean its own skirts.

Current Comment

A DEMONSTRATION OF ARMY SANITATION

The mobilization of a large force of men on the Mexican border by the military authorities will give opportunity for a demonstration of such improvement in army sanitation and hygiene as has been made since the Spanish-American War in 1898. The lesson of that war was severe. On account of lack of an adequate medical staff, organization, equipment and appropriations—a grievous unpreparedness for actual field conditions—the mortality and morbidity of the forces, under simple camp conditions, which, on account of the absence of danger of invasion by the enemy, should have been under complete control, were not much better than those of the Civil War. The possibilities of camp and army sanitation under actual war conditions were well demonstrated by the Japanese in their war with Russia. It remains to be seen whether our army has profited by these two examples. Improvement has undoubtedly been made, and conditions, in the regular army at least, under practice-camp conditions, with comparatively small forces, have perhaps become almost ideal. The experience with small forces in the Philippines has also no doubt served a useful purpose in teaching the requirements of army sanitation under war conditions. Even though the mobilization of the present forces is only intended for maneuver purposes, the conditions will more nearly simulate actual war conditions than any movements of the army during the last decade. In a semi-tropical country, with scant or defective water-supply, with possibilities of malaria and other infectious diseases, the resources and organization of the medical department would be practically tested.

COMPRESSED OXYGEN

The report of the Council on Pharmacy and Chemistry in another part¹ of this issue shows how the work of this body is broadening. In the past the Council's reports have dealt with proprietary articles or with non-proprietary drugs which form the basis of proprietary medicines. The present report relates to an entirely different substance—oxygen—which, so far, is one of the few things which have not been appropriated by proprietary medicine houses. The purity of oxygen is a most important matter—more important than the purity of many official drugs—because it is often depended on to save a life that is at its lowest ebb, and where the slightest impurity might have the most serious consequences. While to those unfamiliar with analytical work of this nature, the amount of labor represented by the report of Professors Smith and Leman will not be apparent, it was none the less real. It is gratifying to find men of high standing outside of the profession ready to cooperate with the Council in its efforts to bring about better conditions. The good quality of the oxygen on the American market is a matter for congratulation.

PHYSICIANS AND DREADNAUGHTS

Spectacular heroism usually has a prompt reward in homage and praise; but that is a truer heroism which is unostentatious or unrecognized, because it is not for glory; rather it is an unselfish self-sacrifice. "Those missionary doctors who are going among the stricken natives in an effort to stamp out the plague are as great heroes as any who ever faced the yellow fever in their own country, and more so, because the duty did not come to them. They sought it out." Thus speaks the *St. Louis Star* of the situation in China, and adds this pointed comparison: "The missionary doctor presents a less spectacular picture to the eye than a dreadnaught, but he is a far better messenger for civilization to send to those who dwell in darkness." The spread of the bubonic plague in the East has inspired terror in the inhabitants and foreign visitors and many of the latter have made a hasty departure from the stricken regions. The physicians,² as always, are going about combating the pestilence in the most vigorous fashion, uninfluenced by fear or terror; and to compare them with dreadnaughts is indeed appropriate.

FAKES AND THEIR IMITATORS

The success, through advertising, of a nostrum which has little or no special merit, causes a host of imitators to spring up, in the hope of reaping a like profit in humbugging the people. But failure often results, because these imitators do not possess the business shrewdness or the means for advertising which were at the disposal of the original fake. This is emphasized in the March number of the *California State Journal of Medicine* which describes the Viavi fake. Its imitators

are clumsy, but "they may be also deadly, as when they imply that cancer may be prevented or cured by the use of their stuff. They all forget that what has made the monumental success of the Viavi fake is not the fake itself—it is the keen, shrewd, cunning brain of the little Law brother, one of San Francisco's most wealthy and distinguished citizens. It is not the three little shells and the elusive little pea that are so valuable to the 'shell game' faker; it is the dextrous way in which he works the fake. The promoters of these clumsy imitators of the Viavi fake will never get to be directors of the Young Men's Christian Association; they have not the guiding genius of the little Law brother to manipulate the fake."

FIRST AID TO INJURED CREDIT

The general advantage to the public of instruction in "first aid to the injured" seems not to have been wholly realized heretofore. In a recent instance, after purchasing some goods in a store, a man offered in payment a check signed by a physician and asserted that he was the physician. The clerk, whose suspicions were aroused, asked the customer to state how many bones there are in the human body. The alleged physician was unable to do so, became confused, was arrested and proved to be an impostor. We hope that the employer appreciates the value of such a clerk. He has learned the first principle underlying first aid to the injured—that prevention is better than cure.

Medical News

ALABAMA

Society Meetings.—Hale County Medical Society, at its annual meeting in Greensboro, elected the following officers: president, Dr. Reuben F. Monette; vice-president, Dr. R. A. White, Jr.; censor, Dr. Edgar P. McCollum, and secretary-treasurer and county health officer, Dr. Charles A. Poellnitz, all of Greensboro; health officer, Dr. Shelby C. Carson for Greensboro; Dr. Elisha N. Driver for Newbern, and Dr. Rufus J. Griffin for Moundsville. —Dallas County Medical Society, at its annual meeting, held in Selma, elected the following officers: Dr. William W. Harper, Selma, president; Dr. Lawrence H. Moore, Orrville, vice-president; Dr. James S. Chisholm, Selma, secretary, and Dr. Samuel B. Allison, Carlowville, county health officer.

CALIFORNIA

Milk Commissions to Meet.—The third annual meeting of the California Association of Medical Milk Commissions will be held at Santa Barbara during the meeting of the State Medical Society which convenes April 18. The chief subject to be discussed at the meeting will be "Bovine Tuberculosis in Relation to Public Health." Papers on this subject will be read by Dr. George S. Baker, inspector in charge of the Bureau of Animal Industry, United States Department of Agriculture; Dr. C. M. Haring, professor of veterinary science in the University of California; Dr. M. E. Jaffa, professor of agricultural chemistry in the University of California, and Dr. Chester Roadhouse, formerly United States Meat Inspector, and expert to the San Francisco County Medical Milk Commission. Physicians, sanitarians and producers and consumers of milk are invited to attend the meeting.

ILLINOIS

Supreme Court Decision.—By a recent ruling of the supreme court in the case of *The People vs. Wilson*, paragraph 12 of the Medicine and Surgery Act is declared unconstitutional. This section has to do with the licensing of itinerant vendors

1. N. N. R., page 813; Propaganda for Reform, page 833.

2. In this connection it will be of interest to note a letter from a missionary physician in China which appears in our Correspondence Department in this issue.

of patent and proprietary medicines, which makes it necessary for such persons to pay a license of \$100 a month for the privilege of selling medicines.

Personal.—Dr. Frederick A. Renner has been appointed local surgeon of the Illinois Traction System Hospital Association and of the Illinois Traction System at Bensld.—Dr. Charles G. Beard, Sterling, has been appointed local surgeon for the Burlington System at Sterling and Rock Falls.—Dr. N. E. Wayman, Chicago, has been appointed state bacteriologist, vice Dr. William H. Holmes, resigned.

Chicago

Dismissal Confirmed.—Twelve members of the Board of Managers of Mary Thompson Hospital met, March 4, and confirmed the dismissal of seven members of the staff and two interns, who are said to have threatened to disrupt the hospital if they were not reinstated.

Get Together Banquet.—At the get together banquet, held March 9, by the Chicago Retail Druggists' Association, members of the Chicago Medical Society and the Chicago Odontographic Society were entertained. Dr. Alexander Hugh Ferguson presided as toastmaster. Harmony was the dominant note of the meeting.

Death-Rate Increasing.—In the quadrennial report of the department of health, the annual mortality for the period is given as 15.72 per 1,000 in 1907, 14.49 in 1908, 14.58 in 1909 and 15.21 in 1910, showing an increase in the mortality rate for last year. This increase is in the deaths by violence, heart disease, cancer and nephritis. In the preamble of the report the health commissioner lays the responsibility of the increasing death-rate to lack of appropriations properly to carry on the work of the health department, which he says is handicapped by lack of men and money.

MARYLAND

Inmates Build New Asylum.—In the erection of the new State Insane Hospital for Negroes at Crownsville, near Annapolis, much of the labor is being done by negro inmates of the different asylums of the state.

Baltimore

New Hospital.—The South Baltimore General Hospital was chartered in January last. Among those connected with the institution are the mayor, and Drs. Guy L. Hunner, Harry E. Peterman and Anna S. Abercrombie. The incorporators are endeavoring to raise \$100,000 for the buildings of the new hospital. A site will probably be chosen on the water front at Locust Point in the Fort McHenry district.

Diphtheria at Johns Hopkins.—The outbreak of diphtheria in Johns Hopkins Hospital is practically over. The health department publishes figures to show that the outbreak was confined to the hospital and to the Church Home and Infirmary, and that there has been no increase in the prevalence of the disease in the city at large. None of the cases in the hospital was serious as antitoxin controlled the disease satisfactorily. On March 11 there were still eight cases in the hospital, all in the isolation ward. Work at the Johns Hopkins Medical School was resumed March 8 and 9. The dispensary was opened March 9, and the dispensary at the Hebrew Hospital on the same date. The Church Home has been reopened for patients.

MASSACHUSETTS

Bequest to Hospital.—By the will of Mrs. Rosa A. Cole, Kingston, a bequest of \$100,000 is made to the Jordan Hospital, Plymouth, and in addition the hospital is made residuary legatee of the estate.

Personal.—Dr. John W. Chase, Dedham, was struck by an automobile, March 5, fracturing two ribs and causing injuries to his knees and internal injuries.—Dr. William H. Riddick, South Boston, has been appointed chief marshal of the Evacuation Day parade.

Benefactions to Hospitals.—By the will of the late Mrs. William O. Moseley, Newburyport, the sum of \$200,000 is devised to Anna Jaques Hospital, Newburyport, and \$60,000 to Harvard University for two fellowships to enable medical students of marked ability to pursue studies abroad.—The late Sullivan Niles, Cambridge, bequeathed \$3,000 to the Cambridge Hospital.—Salem Hospital was bequeathed \$5,000 by the late Edward Lane, Salem, for the establishment of a free bed.

MICHIGAN

Medical School Anniversary.—On February 22, the College of Medicine and Surgery of the University of Michigan, Ann Arbor, celebrated the anniversary of its foundation. Dr. Alfred S. Warthin addressed the evening meeting on "Disease in Art."

Object to Newspaper Exploitation.—The Hillsdale County Medical Society, at its meeting, March 3, adopted resolutions requesting the newspapers of the county to refrain from noting the names of physicians in connection with operations or cases of illness, on account of the publication being unethical and in the nature of advertising.

Reference Library for Kalamazoo.—It was announced at the February meeting of the Kalamazoo Academy of Medicine that a medical reference library will soon be installed in that city and made available for members of the profession. *The Bulletin*, a semi-monthly publication of the Kalamazoo Academy of Medicine, made its first appearance, February 25. It is an eight-page sheet, and contains the program for the succeeding session of the academy, and also other news items and reports of special cases.

Personal.—By the will of Miss Sarah Finney, \$100,000 is devised to Dr. Andrew W. Imrie, Detroit.—Dr. A. Marion Allen, Adrian, was thrown from his buggy, February 26, breaking his clavicle.—Dr. Charles L. Grube, Saginaw, has compromised his claim against the city of Saginaw for services during the small-pox epidemic to \$2,434.95.—Dr. Charles F. Kuhn, Detroit, was severely shaken up and bruised in a collision between his automobile and another car, February 13.—Dr. Joseph Foster, Lansing, who has been ill with influenza, is reported to be convalescent.—Dr. Henry F. Thomas, Allegan, was seriously injured in a runaway accident, March 4.—Dr. Jean H. Whitney-Morse, Battle Creek, sailed for Porto Rico, March 11.—Dr. J. Earl McIntyre has been appointed local surgeon of the Grand Trunk System at Lansing, vice Dr. George E. Ranney, promoted to district surgeon.

MISSOURI

Physicians Indicted.—Eleven indictments are said to have been returned by the United States grand jury at Kansas City against physicians of that city charged with violation of the federal statute which makes it a crime for any one to use the mails for the dissemination of information regarding the induction of abortion. The accused were arraigned February 28, pleaded not guilty and were released on bonds of \$5,000 each.

Medical License Law Valid.—In the case of George F. Smith, Webster County, a chiropractic charged with "treating and attempting to treat the sick and afflicted without first having obtained a license from the State Board of Health," in which the defendant appealed to the supreme court, a decision has been handed down which sets forth "that the method of practice disclosed by this record may be harmless and useful, but this treatment for sick related, to say the least, to the practice of medicine or surgery and so within the terms of the statute."

St. Louis

Personal.—Dr. C. W. Gould, assistant city bacteriologist, who has been ill at the City Hospital, is reported to be improving.—Dr. Frederick B. Hall has been appointed roentgenologist at the City Hospital, vice Dr. Russel D. Carman, resigned.

Section Officers Elected.—The Section on Internal Medicine of the St. Louis Medical Society has elected Dr. Louis H. Behrens, chairman; Dr. Oliver H. Campbell, vice-chairman and editor, and Dr. Llewellyn Sale, secretary-treasurer.—The surgical section of the society has elected Dr. M. George Gorin, chairman; Dr. Roland Hill, secretary, and Dr. Edmund A. Babler, treasurer.

NEW YORK

Physicians in State Legislature.—The assembly numbers among its members four physicians: Drs. Minor McDaniels, health officer of Enfield Center; Charles S. Butler, health officer of Harpersville; Robert P. Bush, Horseheads, and John Seeley, Woodhull.

College Seeks New Site.—It is reported that Albany Medical College is endeavoring to secure from the board of supervisors of Albany County an easement transferring to the college the property formerly occupied by the Albany penitentiary as a site on which to erect new college and laboratory buildings.

Rochester Academy Meeting.—Owing to sudden illness, Dr. Frederick G. Novy, Ann Arbor, Mich., was unable to be present

at the meeting of the Rochester Academy of Science, March 1, and the dinner in his honor was cancelled. Dr. Luzerne Coville, Ithaca, presented a paper before the academy on "Arteriosclerosis."

Hospital Notes.—Physicians of Babylon desire the establishment of a hospital in that village. The nearest hospital at present is that at Hempstead. The Board of Trade of Babylon has adopted a resolution favoring the project.—Auburn City Medical Society has adopted a resolution favoring the conversion of the present municipal hospital into a sanatorium for the care and treatment of tuberculosis patients.—Herkimer Emergency Hospital was obliged to close its doors, March 1, on account of financial stress. It is hoped that the hospital can be reorganized on a satisfactory basis.

New York City

Donation to Hospital.—Mr. Adolphus Busch, on the occasion of his golden wedding, March 7, donated \$5,000 to the Children's Hospital.

Last Harvey Society Lecture.—The last lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, April 1, by Dr. S. Weir Mitchell, Philadelphia, and will be "A Lecture on William Harvey, the Discoverer of the Circulation of the Blood."

Hospital in Hotel.—A unique feature in a new hotel now in the course of construction at Thirty-Fourth Street and Broadway, will be a hospital so arranged as to accommodate twelve patients at one time. This hospital is to be situated on the twenty-third floor of the hotel.

Department of Health Bulletin.—The Department of Health of the City of New York has undertaken the publication of a monthly bulletin which is supplied free of cost. The bulletin is intended for the information of public health officials, physicians and laymen interested in health problems, and will contain in each issue editorials and special articles dealing with various phases of public health work. The bulletin will appear about the fifteenth of each month.

Bellevue Overcrowded.—In this institution, whose normal capacity is 1,050, the average census for February was 1,200. On March 2 the number of patients was 1,330, the highest in the history of the institution. The authorities complain that they have been unable to transfer patients to the Metropolitan or the City Hospital for several weeks as these institutions are also overcrowded. The charter of Bellevue provides that whenever a case ceases to be a proper one for treatment at Bellevue, it shall be transferred to the Metropolitan or City Hospital on Blackwell's Island and a meeting of the trustees has been called to request the city to make some provision for patients from Bellevue.

Reorganization of Hospital.—At the reorganization of St. Mark's Hospital, March 7, the following new board of directors was elected: president, Dr. Benjamin T. Tilton; vice-president, Dr. Alexander Shulman; secretary, Dr. Andrew Von Grimm, and Drs. Otto Maier, Caesar A. Von Ramdohr and Charles R. L. Putnam. The following were added to the medical board: Drs. Benjamin T. Tilton and Charles R. L. Putnam, visiting surgeons; Dr. Andrew Von Grimm, visiting gynecologist; Dr. Otto Maier, visiting pediatrician and obstetrician; and Dr. Harry G. Watson, attending physician and visiting gastro-enterologist to St. Mark's Hospital Dispensary. Dr. Carl Beck resigned as visiting surgeon.

Medical Conferences.—Conferences have been arranged by the Educational Alliance with the endorsement of the Comitia Minora of the Medical Society of the County of New York and of the Council of the New York Academy of Medicine. They are given in the Auditorium, 197 East Broadway, corner Jefferson Street, at 8:30 p. m. On March 30, Dr. Henry C. Coe will speak on "Gynecological Operations by the General Practitioner." On April 9, Dr. Albert A. Berg will speak on "Lodge and Contract Practice." On April 17, Dr. Wm. M. Polk will speak on "Medical Ethics and Their Application to Practice." On April 23, Dr. Joseph Brettauer will speak on "The Secret Division of Fees." On April 27, Dr. Sigismund S. Goldwater will speak on "Abuses of Hospital and Dispensary Practice." These lectures are for physicians only.

NORTH CAROLINA

District Society Meeting.—The Fourth Councilor District Medical Society held its annual meeting in Wilson, February 14. The following officers were elected: president, Dr. James J. Philips, Tarboro; vice-presidents, Drs. William Spicer, Goldsboro, and Lacy D. Wharton, Smithfield, and secretary-treasurer, Dr. Michael M. Saliba, Wilson (reelected). The next meeting of the society will be held in Smithfield.

McCormack in North Carolina.—Dr. Joseph N. McCormack, Bowling Green, Ky., delivered an address before the North Carolina Association for the Prevention of Tuberculosis, and the members of the state legislature, Raleigh, February 1. At the conclusion of the address, State Senator Boyden, leader of the majority, rose, and in words of strong commendation told Dr. McCormack to have the physicians ask for what was needed to carry out the principles of public sanitation advocated by him, and the appropriation would be forthcoming. During the following week, Dr. McCormack in company with Dr. Chalmers M. Poole, Salisbury, president of the Medical Society of North Carolina, visited a number of the larger cities of the state and addressed large audiences.

Responsibility of Hotel Keepers.—The Supreme Court of North Carolina has recently handed down an opinion of possible interest to sanitarians, in the case of Patrick vs. Springs. Action was brought in the superior court several months ago against the keeper of a hotel in Washington, N. C., for damages suffered by the plaintiff by reason of having been assigned to an unsanitary room in which there was an unsafe or leaky gas fixture. The lower court awarded the plaintiff \$250, and this award was sustained by the opinion of the supreme court, which was as follows: "It seems now to be well settled that in case of an injury occurring in consequence of the unsanitary and defective condition of the inn, premises or room to which a guest is assigned, the innkeeper is liable on the same principles applicable in other cases where persons come on the premises at the invitation of the owner or occupant and are injured in consequence of their dangerous condition."

OHIO

Personal.—Drs. Oscar Hasencamp, Toledo; Henry T. Sutton, Zanesville, and Robert H. Grube, Xenia, have been appointed members of the State Board of Health.—Dr. Thomas M. Sabin has been reelected president, and Dr. Frederick K. Smith, secretary of the staff of the Warren City Hospital.—Dr. Andrew J. Timberman, Columbus, is reported to be seriously ill with septicemia, due to an operation wound.

Tuberculosis Workers Incorporate.—The Columbus Society for the Prevention and Cure of Tuberculosis was incorporated March 4. The charter gives the society the right to acquire property, erect a hospital, employ nurses for patients, and teach methods of combating the disease. The prime object is to open the fresh-air school for which option on the Guerr Park property has been taken. Of the \$5,500 required for this project, \$3,600 has already been subscribed.

New National Guard Surgeons.—Dr. Edwin A. Hamilton, Columbus; John R. McDowell, Zanesville; James C. Pence, Lima; Don C. Hughes, Findlay, and Edward J. Wilkinson, Toledo, have passed the promotional examination and have been commissioned captains and assistant surgeons. M. C. O. N. G. Drs. Elijah J. Gordon, Columbus; Charles W. Stone, Cleveland, and Paul W. Tappan, Dayton, have passed the examination and have been commissioned first lieutenants and assistant surgeons in the medical corps.

Addition to Hospital.—Flower Hospital, Toledo, is about to award the contract for a new building which will more than quadruple the present capacity. The new building will contain ninety rooms and will cost about \$100,000. The new staff of the hospital is made up as follows: chief of staff, Dr. Sidney D. Foster; surgical chief, Dr. Charles N. Smith; medical chief, Dr. Willard J. Stone; surgery, Drs. Sidney D. Foster, Albert F. McVety, Homer H. Heath and Clarence D. Selby; gynecology, Drs. Charles N. Smith, C. W. Worts and Joseph F. Fox; medicine, Drs. Willard J. Stone and Charles F. Tenney; pediatrics, Dr. George L. Chapman; eye, ear, nose and throat, Drs. Charles Lukens and Walter H. Snyder; obstetrics, Dr. William G. Dice; nerves, Dr. Louis Miller; dermatology, Dr. Edwin D. Tucker, and x-ray, Harry Dachtler.

Cleveland

Midwife Imprisoned.—Mrs. Annie Smith, a midwife of Cleveland, is said to have been committed to the workhouse for failure to report a case of ophthalmia neonatorum.

Personal.—Dr. Albert M. Dunlap, ward physician of the Eleventh Ward, is reported to be seriously ill with scarlet fever, contracted while attending a case in his district.—Dr. Hal F. Bishop, Cleveland, was committed to the Cleveland State Hospital for the Insane, March 6.—Dr. Charles M. Simpson has returned from abroad.

Hospital Notes.—Charity Hospital is endeavoring to raise \$210,000, \$150,000 of which will be used to erect a new surgical ward, and the remainder to liquidate a debt of the

institution.—A site has been secured by Lakeside Hospital, on which a maternity and children's hospital will be erected. Work on these will be started this year.

PENNSYLVANIA

Electrocution Bill Passes House.—The Morris electrocution bill passed the house on final reading on March 9 and was presented to the senate on March 12. The bill provides for the substitution of the electric chair for the gallows in carrying out the death penalty.

Women Elect New Officers.—At the annual meeting of the Woman's Medical Association of Pittsburgh, held February 28, Dr. Caroline S. Marshall was elected president; Dr. Bertha E. Dornbush, vice-president; Dr. Elizabeth Anderson, secretary, and Dr. Johanna Baltrusaitis, treasurer.

Charity Home Fund.—Mrs. Eekley B. Cox, on March 1, contributed \$2,000 to the fund being raised for a United Charities Home in West Hazleton. Her subscription was the first received. The organization is attempting to raise \$15,000.

Site for Convicts' Hospital.—Robert J. McKenty, warden of the Eastern Penitentiary, Dr. Samuel Dixon, State Health Commissioner, and John Francis, warden of the Western Penitentiary, form a committee of three, provided for by a bill introduced into the senate by Mr. McNicholls of Lackawanna County, to visit Far View, Wayne County, to select a site for a hospital in which tuberculous convicts will be segregated.

Railway Fatalities.—Statistics gathered by the State Railway Commission show that during January, 87 persons were killed and 664 injured on the steam railroads of the state. Of the fatalities, 34 were employees, 2 passengers, 48 trespassers and 7 others. There were 8 deaths at grade crossings. During the same period, there were 13 killed on the street railways and 272 injured. Of the killed, 5 were trespassers and 8 others.

Conflict Between Health Department of State and City.—A conflict between the State Health Department and the Lancaster Board of Health has resulted in the arrest of Dr. J. Miller Shartle, Lancaster, state registrar. A local ordinance requires that physicians shall report deaths to the City Board of Health. Dr. Shartle holds that having reported to the State Health Department, he had fulfilled all legal obligations. As it is desirous to determine the authority of the state in the premises, Dr. Shartle will be represented by counsel from the attorney general's department.

To Investigate Rittersville State Hospital.—An investigation of the construction of the Homeopathic State Hospital for the Insane at Rittersville, is provided for in a resolution presented to the senate, February 27, by Senator Judson. The resolution, which is referred to the judiciary special committee, recites that more than \$1,700,000 of the State's money has been expended by the commission appointed to construct the institution; that the hospital is not yet completed, and has never housed or treated a patient, although the commission has been in existence since 1901. The resolution provides for the appointment of a committee which shall make a full investigation of the matter and hold public hearings.

Fireworks Manufacturers Favor Sane Fourth.—The Pennsylvania manufacturers of fireworks have volunteered to support the bill that has been presented to the legislature for the restriction of the sale and use of high explosives. The bill was formulated by the president of the Philomusian Club, who has been assured by virtually all the large dealers in fireworks in the state that, although the bill will certainly injure their trade, they feel it such a needed protection for children that the bill will not be contested, and its success therefore seems assured. The bill is aimed principally against the blank cartridge and provides that no blank cartridge, pellet or tablet, composed of chlorate of potash, dynamite or other high explosive compounds, shall be used in pistols, hollow canes or other toys for explosive purposes; that no fireworks containing gunpowder or like explosive material shall be over 6 inches in length and that no firecrackers containing gunpowder or like explosive materials shall be over 6 inches in length, and that firecrackers from 3½ to 6 inches long shall not be more than ¾ of an inch in diameter. The bill also aims to prevent manufacturers from importing the materials above mentioned from other places.

Philadelphia

Personal.—Dr. Harry Toulmin sailed for Europe, March 11. —Dr. Helen Kirshbaum was operated on for appendicitis in the German Hospital, March 2.

Trichinosis Prevalent.—It is reported that trichinosis is again prevalent in this city, causing at least one death during the past week. It is believed that the meat containing the trichinosis germ has been sold principally in the southeastern sections of the city as the majority of cases have been reported from that district.

The Midwife Abuse.—The weekly roster of the medical organizations of Philadelphia states that "a serious problem that soon must be solved by the Philadelphia profession is the present inadequate requirements for licensing of so-called midwives. This lawless element is a large factor in the growing crime of criminal abortion and must be controlled or perhaps suppressed. The Board of Health censured a local physician as recently as last week, for his carelessness in recommending certain women for licensure of this kind."

Cocain Users Sentenced.—A raid on a house at Thirteenth and Kenilworth Streets on March 8, resulted in the arraignment of seven alleged cocaine users before Magistrate Barrett the next day. Mulvena Winter and Robert Sampson, colored, keepers of the house, were held in \$500 bail each, for court, charged with obtaining and selling cocaine among the colored people. Two men and two women, colored, were given three months each in the House of Correction. A white man also arrested at the house was given 6 months.

Dealers Oppose Milk Test.—On March 8, the "Downtown" Milk Dealers Association met in Ritter's Hall to protest against a bill introduced in the legislature by Representative McGuire, of Lackawanna County, providing for a 60 degree test in milk and for pasteurization of all milk. They declared that a 60 degree minimum temperature requirement would be an impossibility in the summer months, that the farmers oppose it and the railroads, by furnishing refrigerating cars, will raise rates, thereby forcing an increase in the retail price of milk.

Eulogium on Dr. Kelly.—At a special meeting of the faculty of the Woman's Medical College of Pennsylvania, March 3, a minute was adopted on the death of Dr. Aloysius Oliver Joseph Kelly, formerly professor of pathology in that institution, setting forth their appreciation of his rare mental qualities and his judicial character. He was from the first a leader in the cause of advanced medical education. He was a rare combination of amiability and strength, of a peace-maker and a combatant. He was most esteemed by those who knew him best.

Pure Food Work.—Gorgonzola cheese, imported into this city from Italy, has been found to bear a thick coating of paint said to contain barytes or barium sulphate with iron rust sprinkled on it for color. These cheeses were analyzed by Charles H. LaWall, Department Chemist.—On February 28, the federal agents confiscated 10,800 packages or 1,350 pounds of alleged impure gelatin at a wholesale grocery store on South Front Street.—On March 1, S. Sklaroff and Sons, smoked fish dealers, paid to Magistrate Beaton four fines amounting to \$265, for selling smoked fish said to have been dyed.

Plans for Immigrant Hospital.—Plans for utilizing the upper deck of the new Vine Street Pier, or perhaps building a third deck to the pier to be equipped for a detention hospital for immigrants, was considered at a conference held February 27 and attended by Mayor Reyburn, Director Neff of the Department of Health and Acting Director Hasskarl, of the department of wharves, docks and ferries. A great many cases of contagious diseases, not extraditable under the quarantine laws, are brought into the city by immigrants exposing the public to risk. It is planned that all immigrants who show any symptoms of illness shall be detained at this new hospital for treatment and observation.

Pupils Begin Lunch Test.—At the request of the Home and School League, 50 children of the Woods School have been selected for experimental purposes, that is they are to be given warm luncheons at recess time, consisting of soup, stewed fruits, cocoa and bread for the period of a month. Since November, the League has been serving a three-cent lunch in two schools. As the children are unable to secure the luncheons daily, however, the league is determined to prove the value of the institution by providing the food free for fifty children and, by comparing their condition before and after the lapse of a month, obtain the needful argument in favor of the substantial lunch. These children have been subjected to a strength test, been weighed and careful notation of their physical condition made. The lunches will be varied each day and only the most nutritious food will be served.

Open-Air Schools to be Established.—Through the aid of the Phipps Institute, the first open air school for tuberculous chil-

dren will be opened on the roof of the McCall School, April 1. March 8, Alexander Wilson, secretary of the social service department of the Phipps Institute, met the elementary school committee and offered in the name of the institute to provide the equipment and organize the class if the board would allow the use of the school roof and furnish a teacher. The roof will be furnished with needed protection at the expense of the institute and the children will be provided with extra clothing. It will be conducted on the lines of a hospital with given hours for recreation, light occupation and study. Cots will be provided where the children will be required to rest at stated intervals and milk and eggs will be fed to them. Another class of less advanced cases will be conducted in an open air room of the Jackson School at Twelfth and Federal Streets. Director Neff has notified the committee that the State Antituberculosis Association has in its possession about \$2,000 as its share of the proceeds of the Fairmount Park automobile races which could be used for this purpose.—Residents of South Philadelphia have begun an agitation in favor of an open-air school for children of their section, who may be suffering from tuberculosis or threatened with the disease.

TENNESSEE

New Methodist Hospital.—Plans are being formulated by the members of the Memphis, White River, North Mississippi and Mississippi conferences of the Methodist Episcopal Church, South, to erect a hospital in Memphis to cost \$250,000.

Health Board Appointments.—At a meeting of the Nashville City Board of Health, Dr. William E. McCampbell was elected chairman, vice Dr. W. Frank Glenn. The board has reelected Dr. R. Logan Jones as city bacteriologist and chemist; Dr. John T. Altman has been reappointed a member of the board.

Closer Union of Medical Schools.—Two years ago the Medical Department of the University of Nashville was united with the Medical Department of the University of Tennessee, taking the name of the Medical Department of the Universities of Nashville and Tennessee. The union, however, was only for a limited number of years. Efforts are now being made, according to reports, to secure legislation making this union permanent.

TEXAS

Quarantine Fees for Hospital.—The Medical College of the University of Texas, at Galveston, is asking the legislature to grant the use of the quarantine fees at Galveston for the establishment and maintenance of a hospital in connection with the quarantine station at that point.

Yellow Fever in Mexico.—Reports of yellow fever in Mexico have caused the state health board alarm, and it is likely that a rigid quarantine will at once be established. On March 8, the state health officer, Dr. Ralph Steiner, went to Brownsville, on the Mexican border, to investigate the situation.

Health Bills.—The Texas Legislature is being asked to enact a law providing for the establishment of a state tuberculosis sanitarium; one to prohibit the use of public drinking cups; one to give the so-called "optometrists" a monopoly of the glass-fitting business, and one to perform on criminals and defectives the operation of vasectomy. Nearly all of these measures will die on the calendar.

Enacting a Sanitary Code.—The Texas legislature, now in session, will enact into law the sanitary code for Texas, which has had thus far only quasi-constitutional standing, in that the legislature at first sought to delegate to the state health board authority to enact the code. In Texas the legislature cannot delegate authority to make laws, so it has been difficult hitherto to make fines hold in the case of violators of the health laws. The bill has been unanimously passed by the senate and will undoubtedly receive similar treatment in the house, and the signature of the governor.

Distribution of Diphtheria Antitoxin.—State Health Officer Dr. Ralph Steiner, Austin, has just made arrangements whereby the state health board is enabled to distribute diphtheria antitoxin at exceedingly low prices for the benefit of city and county health officers and other physicians who desire antitoxin for indigent patients. The state health officer will handle no funds, but will merely hold the antitoxin subject to the order of those who will be directly responsible to the manufacturing company. It is hoped that city and county administrators will take suitable official action for the free distribution of diphtheria antitoxin.

Hookworm Campaign.—Wickliffe Rose, secretary of the Rockefeller movement against the hookworm, has just conferred with the state health authorities, relative to the per-

fecting of a plan for the extermination of the parasite in Texas. Last fall Governor Campbell disapproved the plan to accept Rockefeller's aid, saying that Texas can better endure the hookworm than to lay itself debtor to Rockefeller. Governor Colquitt may entertain similar views. State Health Officer Dr. Ralph Steiner, however, will exert every energy to secure a portion of the Rockefeller fund. Recent investigations among the students of the medical branch, at Galveston, of the University of Texas, revealed the fact that 43 per cent. of the students are afflicted with uncinariasis.

WYOMING

Personal.—Dr. John B. Tyrrell, Laramie, has been appointed a member of the State Board of Medical Examiners, vice Dr. Samuel B. Miller, Laramie, resigned. Dr. Miller has moved to California.—Dr. W. W. Vance, recently appointed a member of the board of health of New Castle, at the organization of the board, was elected secretary.

FOREIGN NEWS

Northland Congress of Internal Medicine.—The seventh Scandinavian congress for internal medicine is to be held early in July, 1911, at Bergen.

International Congress of Pathology.—The date of this international gathering of pathologists has been fixed as Oct. 2-5, 1911; Turin is the place of meeting. The notices are being sent out by Prof. P. Foa, Corso Raffaello 30, Turin, in the name of the Societa Italiana di Patologia.

International Congress of Surgery.—The third congress of the International Surgical Association is to be held at Brussels Sept. 26-30, 1911, with an exhibition of fractures and methods of treatment in addition to the usual exhibition of surgical instruments and appliances. The three subjects to be discussed are surgery of the lungs and pleura, colitis and pancreatitis. Prof. Depage is the secretary general, Avenue Louise 75, Brussels, Belgium.

The Plague Abroad.—Cable despatches of March 13 state that with the exception of Mukden, the rate of mortality from the plague is decreasing in all the affected districts in Manchuria and China. Egypt reported 37 cases of plague, with 13 deaths, in the week ending February 10, while India reported 15,003 cases with 12,143 deaths in the week ending January 14. Russia has renewed her demand to be allowed to conduct the quarantine along the border and China has replied in favor of a dual quarantine, similar to that maintained in conjunction with the Japanese along the western boundary of Korea. The first cases of plague among hoofed animals are reported from the Fushan collieries, where bacilli were found in the carcasses of donkeys.

The Campaign Against Rats at Buenos Aires.—The *Semana Medica* opens the new year with the illustrated official report of the methods in use at Buenos Aires for extermination of rats. The work is centralized and squadrons are despatched to the premises to be attacked. They wall them off with sheet zinc and inside the buildings and yards use asphyxiating gases pumped into the rat-holes and tunnels through a hose from the generating cart or hand apparatus. The gas is produced by combustion of sulphur and arsenic or sulphurous acid gas is generated by the Marot apparatus which, the report says, is proving more and more valuable every day; it kills the rats and the insects on and about them while, properly managed, it is free from danger for the men and the building. A good rat dog is also regarded as indispensable for each squad of four men. The main point is to locate the actual breeding place, tracing the rats back from hole to hole until their permanent home is reached. The force of 100 men, supplemented by ten carpenters and masons, has become very efficient. The city is considered one of the most difficult to free from rats on account of the numerous livery and other stables and grain warehouses. The public garbage dumps are also great breeding places for rats; the dumps are now walled in with sheet zinc and incinerators are soon to be installed. The rats seem to prefer to make their permanent nests in vacant lots and gardens and particularly in chicken coops, near buildings to which they repair in search of food. The nests were sometimes found three feet and more underground. It is generally found necessary to take up part of the floor, to remove the rats asphyxiated by the gas. On suspicion of plague, cement is used to rat-proof the premises. The latest records given show from 12,000 to 14,000 rat holes thus cleared out each month with from 6,000 to nearly 9,000 rats killed. Dr. P. G. Rivero, who is in charge of the public health service which includes the deratization,

does not approve of offering premiums for rat-killing, as untrained persons are not competent to exterminate the rats and in time of epidemics do not take precautions against infection from them, while there is danger that rats may be bred for the bounty. Poisons and traps are of little use.

CANADA

Club Election.—Dr. Adam H. Wright has been elected president of the Æsculapian Club, Toronto; Dr. George Elliott, secretary and Dr. Edmund E. King, treasurer.

Militia Surgeons Elect.—The medical officers of the militia of Canada met in Ottawa on February 24. Major Edward A. Lebel, Quebec, was elected president and Captain L. S. MacKie, Calgary, Alta, secretary.

New Medical Journal.—The *Western Medical News* appeared in January as the successor of the *Saskatchewan Medical Journal*. The new journal is announced as the official organ of the Alberta and Saskatchewan medical associations.

Medical Reciprocity.—In a bill which will shortly be presented to the legislature by Mr. Mousseau of Soulanges, the endeavor is made to place medical men in the Province of Quebec and other provinces on an equal footing, providing these provinces accept medical certificates issued in Quebec. At present there is no reciprocity between the various provinces of the dominion.

Hospital News.—The Vancouver, B. C., general hospital treated 4,184 patients in 1910 as against 3,042 in 1909. The number of patients admitted during that year was 3,983. The percentage of deaths was 5.87. The Montreal General Hospital treated in the wards 3,586 patients, an increase of 284 over the previous year. There were 272 deaths. In the out-door departments the total number treated amounted to 13,588.

Registration Legislation.—There is every prospect of the bill before the House of Commons to provide for Dominion Registration becoming a law. British Columbia, Saskatchewan and Alberta, which have no universities teaching medicine, cannot have any university representation on the Dominion Council, but two of the three councilors the Government will name, will be appointed from these provinces until the teaching of medicine is begun there.

Report on Tuberculosis.—The report of the Royal Commission on Tuberculosis appointed by the Quebec Government, has been presented to the Legislature. The document gives very explicit and definite recommendations as to the most practical and efficacious measures to adopt to combat the white plague. It is signed by Drs. Emmanuel P. Lachapelle, J. George Adami, both of Montreal; Michael J. Ahern, Quebec; Thomas G. Roddick, James J. Guerin, both of Montreal, and other prominent physicians of Quebec.

Personals.—Dr. Harry B. Anderson, Toronto, has gone abroad to work at the von Noorden clinic.—Dr. E. G. Kidd has been appointed chief of the anatomical department of Queen's University medical department, in succession to Dr. Frederick Etherington, Kingston.—Drs. Helen MacMurchy, Estella O. Smith, Frederick S. Minns, C. E. Hill, George A. Winters, F. G. Mann and William Morrison have been appointed assistant medical inspectors of schools in Toronto.—Dr. Charles H. Vrooman, Winnipeg, late superintendent of the Manitoba Tuberculosis Hospital has been appointed superintendent of the Tranquille, B. C., institution.—Dr. J. Alexander Hutchison, chief surgeon of the Grand Trunk system, Montreal, is spending a holiday in the Mediterranean.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 25, 1911.

Small-Pox in London

An outbreak of small-pox has occurred in the east end of London, and there are now twenty-five cases. The first patient was a Jewess, aged 12, who was admitted to the Mile-End Infirmary, February 5, after a few days' illness, suffering from an eruption. She was treated in one of the general wards till February 22, when the fact that other patients in the ward became ill led to a correct diagnosis. She was sent to the Small-Pox Hospital; soon after a patient from the same ward, a nurse, and a woman who scrubbed the ward were also sent to the Small-Pox Hospital. Another nurse was soon found to be affected. The nurses attacked had not been revaccinated. Three sisters of the first patient were found later to be affected with the disease. In all, eighteen cases arose in the infirmary. The ward in which the outbreak began has been isolated and its inmates have been detained

under inspection for a fortnight. Every endeavor is being made to trace all persons who have been brought in contact with the disease, and extensive arrangements have been made for vaccination in the district. Small-pox in London shows great fluctuation. From time to time the disease is imported and gives rise to more or less serious epidemics. From 1885 to 1901 there was a period of comparative freedom, the number of cases falling as low as twenty-nine in 1899. In 1901 an epidemic of 1,700 cases occurred, which was followed by 7,796 in 1902. Since that year the disease has almost disappeared. In 1907 there were only eight cases and in 1908 four cases. In 1909 there were fifteen. The large number of unvaccinated persons, the result of the pernicious antivaccination campaign, is a cause of anxiety. The epidemic of 1901-2 gave a great impetus to vaccination, but this has now largely exhausted itself. In the locality of the present outbreak it is estimated that 32 per cent. of the children are unvaccinated.

Plague in India

The latest estimate of the ravages of plague in Manchuria gives 19,000 deaths in four months, and suggests comparison with India, where the disease has existed since 1896, and probably has caused no fewer than 9,000,000 deaths. In 1907 the death-roll culminated in the appalling figure of 1,300,000. Since that year there has been a remarkable decline. In the week ended Jan. 14, 1911, there were 12,943 deaths, and in the following week there were 20,157. There is one great difference between the pandemic in India and in Manchuria. In the former country the disease has taken the bubonic form, in the latter the pneumonic, and is, therefore, hardly less fatal to Europeans than to Asiatics. But, as the figures show, plague in India is much more deadly. Again, pneumonic plague is a winter disease, while the bubonic form increases during the first three or four months of the year and reaches a maximum in March or April.

The Eating of Cordite

During the late South African war a new drug habit came to light. Owing to the dearth of matches, the soldiers got into the habit of using the little rods of the new explosive, cordite, with which their cartridges were loaded, in order to light their pipes. By igniting one at a comrade's pipe other pipes could be lighted. Some of the men found that inhalation of the fumes of burning cordite had a narcotic effect. This led to the taking of cordite by the mouth, either solid or dissolved in tea. In those unaccustomed to the drug, even a small dose causes most unpleasant symptoms, chiefly severe headache, but those accustomed to the drug can swallow the whole contents of a cartridge. The face flushes, the head seems to swell, and after about a quarter of an hour the subject falls into a deep sleep. On awaking he suffers from thirst and headache. When taken in hot tea, cordite produces delirium, followed by sleep. Opium and alcohol taken in small quantities are used as "pick-me-ups" after cordite eating; and, inversely, cordite is used as a reviver after alcoholic intoxication. From the long use of cordite optic and mental delusions, timidity, weakness and a general breakdown, moral and physical, result.

Another Expedition Despatched by the Liverpool School of Tropical Medicine

The Liverpool School of Tropical Medicine has despatched its twenty-seventh expedition to Gambia and Senegal to investigate sleeping sickness. The members of the expedition are Prof. J. M. Todd, Dr. Wolbach of Harvard University and Mr. E. D. Todd.

Bonesetter Successfully Sued for Negligence

Mr. H. A. Barker, the well-known "bonesetter," and the successor of Hutton and Atkinson, has been successfully sued for negligence. For years he has been carrying on a large business. Extensive advertising has rendered his name a household word; the "oblique" form of advertising, in the shape of interviews illustrated with his portrait, which have appeared in the leading journals, has been largely used. He can boast of as large and fashionable clientèle as any leading surgeon. Indeed, in cases of bone and joint trouble, when dissatisfied with the advice of a great surgeon, many patients have resorted to Mr. Barker. Among athletes and football players he has a great reputation and is said usually to be consulted by them for injuries received in their pursuits. His methods are entirely manipulative, and, no doubt, prove successful in suitable cases. But the ignorant vaunting of a form of treatment, good for certain conditions, for every condition which human credulity will accept, has its dangers.

A man, aged 24, brought an action against Mr. Barker. In 1906 he twisted his knee in springing from a diving-board. From time to time subsequently he suffered from weakness, stiffness and pain in the joint. In 1909 he consulted Mr. Barker, who said it was a very bad case, but promised him a cure. Barker first ordered radiant-heat baths. On Nov. 25, 1909, he performed some manipulations under gas. For some time afterward there was slight improvement, and the knee could be moved better, but then the pain returned and he again suggested baths. On December 16 further manipulations were performed under anesthesia. Ten days later an ulcer appeared over the knees. Medical advice was then sought and the knee was found to be tuberculous, and the ulcer due to the extension of the tuberculosis produced by the manipulation. There was a sinus extending to the interior of the joint, and the latter was not only tuberculous, but septic. To save the man's life amputation was necessary. A letter was sent to the defendant by the plaintiff's solicitors claiming damages. To this he made the extraordinary reply that he treated the case on condition that he undertook no responsibility—a statement contradicted by the plaintiff. For the defendant it was stated that he had attended 30,000 cases, was a perfect genius at his profession, and cured 94 per cent. of his patients. He denied that he manipulated the joint, and alleged that the anesthetic was administered only for purposes of examination. But the eminent surgeons who gave evidence for the plaintiff said that to administer an anesthetic for examination of the knee was both unnecessary and improper. In his evidence the defendant said that when he first saw the plaintiff there was extensive tuberculous disease, the hamstrings were contracted, and the tibia was displaced backward on the femur and flexed at an angle of 40 degrees. For the defendant, Mr. Whitehead, the well-known Manchester surgeon, said that he examined the amputated leg, and that the knee must have been in hopeless condition when the man first consulted Mr. Barker. The jury gave verdict of \$100 for the plaintiff (a small sum under the condition),—probably because they thought that he was to blame for taking unqualified advice.

A New Departure in Medical Defense

There are two societies for medical defense in Great Britain—the London and Counties Medical Protection Association and the Medical Defense Union. For an annual payment of \$2.50 these societies undertake to provide legal defense for a physician who may have an action brought against him for anything done in his professional work. Unfortunately, it is not uncommon for unscrupulous or dissatisfied patients to bring action against physicians for negligence in treating them. Such patients usually have no money and obtain the services of some speculative lawyer who will take the case on a contingent fee. Even when the physician wins, he is liable to incur the heavy legal expenses of defending the case, because the plaintiff has nothing. Until the medical protection societies were started, a physician was thus practically at the mercy of poor and unscrupulous patients. If the physician loses the case, all that the societies have done in the past is to pay the cost of the defense, leaving him liable for any damages obtained against him, as well as the costs of the other side. After a discussion extending over several years, the London and Counties Medical Protection Association has made a new departure and has undertaken to pay the costs of the other side in case the doctor loses, as well as any damages obtained against him not exceeding \$10,000 in any one year. For these increased benefits it has been found necessary to increase the annual subscription from \$2.50 to \$5.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 24, 1911.

Adult Mortality in France

The government commission on mortality, presided over by Professor Lannelongue, who is also a senator, reports that in France, as in most civilized countries, the adult death-rate is continually being lowered. The death-rate from transmissible and avoidable diseases has become continually smaller, both absolutely and relatively to the general death-rate. The tuberculosis death-rate alone, though it does not appear to be increasing, remains stationary and amounts sometimes to a fifth, sometimes a fourth, of the total death-rate. Prophylactic measures are therefore recommended, especially such as check the progress of alcoholism and give aid to the victims of tuberculosis at the first appearance of symptoms.

An International Sanitary Conference at Paris

The French government has just addressed to the countries of the two continents invitations to take part in an international sanitary conference at Paris next May. The conference was decided on in view of the epidemic of cholera last year in certain parts of southern Italy and the pneumonic plague which is raging in Manchuria, the frightful conditions of which recall the worst days of the epidemic in the Indies. The last sanitary conference on cholera, plague and yellow fever was held Dec. 3, 1903. Seven years constitute, as the government says, a long period to allow the matter to be in abeyance, especially in our days, when the progress of science and the diffusion of methods resulting from it are particularly rapid.

In order to facilitate as much as possible the task of the future conference, the French government has had the bases of the discussion prepared by the permanent committee of the international office of public hygiene (THE JOURNAL, Nov. 21, 1908, p. 1794). This committee, since 1907, when it was formed in Paris, has been accumulating and publishing the most complete information possible on all questions of sanitary organization. As soon as the conclusions of the permanent committee on the subject-matter of the future conference have been formulated they will be communicated to all the governments invited to the conference for their use in preparing their contributions.

A Proposition for the Reform of Medical Education

Dr. Lannelongue, professor at the Faculté de médecine, de Paris and senator, has proposed to the senatorial commission of higher education to make the medical teaching body distinct from the examining body, for the following reasons: Medical instructors are overworked and it is important to relieve the professor from the drudgery of examinations which prevent him from doing justice to his pupils or contributing to the advancement of science. An examination conducted by an outsider would necessarily be more impartial. The pupil would not be tempted to try to secure good marks by studying the personal predilections of his professor. Lannelongue believes that it would be easy to secure a corps of competent examiners in the great university centers by utilizing the services of the numerous *agrégés libres*. The *agrégé* professors, it should be explained, are appointed for a period of only nine years. After the lapse of this time they become *agrégés libres*; that is, they no longer form a part of the teaching corps. Their anomalous situation has often aroused keen criticism. In the rôle of examiner they might find the normal employment of their knowledge.

Limitation of the Number of Physicians

At the last meeting of the Association de la presse médicale française the question of the limitation of the number of physicians was discussed. The same question will soon be taken up by the vigilance committee of the Congrès des praticiens. The members present unanimously empowered their delegate to reject the limitation but to demand a due severity in examinations and sufficient preliminary qualifications in the way of general education, such as classical studies, before permitting candidates to undertake medical studies.

Memorial to Dr. Mesny, a Victim of the Plague

The minister of war has just received the report of our military attaché in China in regard to the circumstances of the death of Dr. Gerald Mesny, physician of the colonial troops, who died of the plague at Harbin, January 13, last, and whose name was incorrectly given in the first despatches as Meunier. Dr. Mesny was a professor in the Chinese medical school at Tien-Tsin when the plague broke out in Manchuria. The authorities asked him to organize measures of defense. He did not hesitate to leave his wife and children to put himself at the head of the Chinese physicians, and went to meet his death at Harbin. When stricken with the plague, he gave evidence of real heroism. In an interview with the French consular agent he declared that, according to all probability, he had still two days to live, and added, smiling, "I do not say au revoir but adieu."

The director of the Ecole d'application du service de santé des troupes coloniales, after relating these facts to the students, declared that he had decided that Dr. Mesny's name should be inscribed on the marble tablets of the school devoted to the officers of the sanitary corps of the colonial troops whose death is the result of devotion to duty.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 24, 1911.

Personal

Professor Uhlenhuth has accepted a call as director of the hygienic institute at Strasburg.—The report has been repeatedly circulated by the newspapers that Waldeyer contemplates resigning during this year. As I am reliably informed, this statement is not correct. Although the distinguished anatomist enjoys an enviable vigor in spite of his 75 years, nevertheless, it would seem that consideration for the rising generation would justify professors of his age in retiring.

The Plague

According to the latest information, the plague in China is receding and it is to be hoped that Europe in general and Germany in particular will be spared from its visitation. For the present the German government has not seen fit to establish any special regulations aside from the ordinary quarantine requirements for ships. The Imperial Health Council, the *Reichsgesundheitsrat*, met to discuss the question Feb. 14, without adopting any definite measures. No plan has been so far developed by the officials for sending German physicians into the plague district.

Improvement of the "Practical Year"

As you are aware, medical students in Germany after they have passed their state examination are required to spend a year for practical education at the university clinics and hospitals, and are only licensed as physicians when they have successfully complied with this requirement which is certified to by the director of the hospital. This arrangement, which has existed for some years, has shown various defects which have constantly become more evident. During the "practical year" they bear the name of "medical practicants" (*Medizinalpraktikant*). The medical councils (*Ärztckammer*) have considered this matter and have reached the conclusion that the institution must be improved. The difficulty consists essentially in an insufficient opportunity for independent activity, an excessive number and unsuitable selection of the hospitals which are qualified for the reception for practicants, the constantly increasing employment of the medical practicants as assistants, and their insufficient instruction in social medicine. The employment of medical practicants in place of assistants has led to complaints by many hospital directors because on that account a lack of actual assistants has arisen. Many young physicians used to feel the need of supplementing their practical education by service as assistant, for one or more years, but now the medical practicants believe that they have sufficiently fulfilled the demands for practical education by their work as assistants during the practical year. In consequence of these difficulties the minister has required the provincial officers to institute an investigation into the training and work of the practicants and make a report on the matter. There is no doubt that the government will endeavor to remove the causes of complaint.

Official Supervision of Homes for Toilers

An important institution for improving the public health will begin its practical activity in Charlottenburg, March 1. In order to remove housing conditions which are insanitary and unsatisfactory in moral and other respects, an inspection service for all small dwellings in which sleeping rooms exist is to be established. This shall also control the permits for laborers, factory hands, apprentices and servants to sleep in the houses of their employers. For the performance of this service two house inspectors are to be appointed by the city and their number will be increased later. These officials with the aid of two assistants from the housing office are to examine all suspected houses, to ascertain if they meet all sanitary and building requirements and if this is not the case to see that the defects are remedied. An information bureau for dwellings is to be associated with the housing office. This is to make possible a substitute for each dwelling that is found insanitary. Together with the inspection of dwellings and the information bureau, a department for statistics in regard to housing is to be established. If this shows a deficiency of sanitary apartments, the care for housing must be extended and provision must be made for the erection of suitable houses which will assure sanitary dwellings to people of small means. With the establishment of this housing office the city of Charlottenburg has instituted a philanthropic enterprise which may serve as a model.

Cancer Statistics in Bavaria

Bavaria has just published the official statistics with reference to cancer collected in 1909. Dr. Teilhafer of Munich gives some results of the investigation in the last number of the *Münchener medizinische Wochenschrift*. According to the figures cancer of the rectum appears to affect in particular those engaged in office work and professors, and secondarily carpenters and tailors. Teilhafer considers that congestion in the pelvic organs is responsible for this predilection. Cancer of the stomach is especially a disease of the poorer population and particularly in Bavaria the peasant class are especially affected by it. From this Dr. Teilhafer draws the conclusion that advancing civilization cannot constitute a cause for the appearance of cancer, for the Bavarian peasants live under the simplest conditions. Cancer of the face is chiefly found in persons who do work in the open air. The conclusions of the author are of uncertain value because of the relatively small number of cases. Still the material thus obtained must be regarded as valuable since from it, in combination with more like material, it is probable that definite conclusions can be reached.

Cancer Statistics in Baden

On the authority of the Baden National Committee for Cancer Research a few years ago a new census of the cancer patients in Baden was undertaken. The material obtained in this way has been elaborated by Privat-Dozent Dr. Werner, an assistant of Professor Czerny of Heidelberg, and he has reached some results which, although they deal with comparatively limited material and must, therefore, be accepted with caution, appear to be of interest in several particulars. The distribution of cancer in the individual communities is shown to differ widely. Werner tries to draw conclusions from this fact with reference to the etiology of cancer and he recognizes five factors: heredity, inbreeding, occupation, mode of life (especially nutrition) and race.

Hereditary taint appears to play no great rôle, according to the Baden statistics, but the author emphasizes the fact that the data do not permit any decisive conclusion on account of their meagerness and uncertainty. Inbreeding seems to have no significance in the etiology of cancer, but more careful study of this question is also desirable. The communities in which consanguineous marriages are common, so far as known to the author, are not the ones in which cancer is specially prevalent. As to occupation, a great increase is found in the groups of men servants and day laborers, without reference to age. Similar conditions in this respect were found by another investigator in the statistics of cancer in the kingdom of Saxony. Nevertheless the author holds this finding of no essential importance in determining the etiology of cancer.

He considers that it would be much more reasonable to determine the occupation in families in which cancer is rare or especially prevalent in order to determine whether occupations which produce certain injuries or which bring the worker in contact with certain objects or animals are responsible for the frequency of cancer or whether certain occupations are frequent among cancer patients because they are chiefly followed in regions where cancer is prevalent. The ordinary differences in nutritive conditions as between city and country, agricultural and manufacturing communities, winegrowing districts and other localities show no corresponding differences in the death-rate from cancer.

As for the contagiousness of cancer, no especial frequency is found in cases where a considerable number of persons live in narrow quarters, from which Werner draws the conclusion that direct contact plays but a slight rôle in the causation of cancer. Neither could a special predisposition of any race be established. The same is true for the influence of the place of residence and the housing conditions. The influence of climate on cancer mortality is also negative. Neither could any parallelism be discovered between the distribution of the higher animal and plant species and the occurrence of cancer, so that the assumption of Behla, which was in itself very unlikely, is shown to be fallacious. The supposition that the parasites of cancer are conveyed by stinging insects is not sustained. No parallel could be traced between the distribution of human and animal cancers.

Altogether, Werner concludes from his statistical investigations that there must be assumed to exist some locally prevalent factors, not connected with the age of the person, which occasion or favor the occurrence of cancer and depend on the character of the locality rather than on that of the inhabitants. As to the question whether the frequency of cancer and the danger of acquiring it are increasing, Werner believes

that we must admit an actual increase in the disease, although much of the increase shown by statistics must be attributed to better diagnosis, greater supervision of the population by physicians, better opportunities for observation in hospitals, etc.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 23, 1911.

Unexpected Help for Medical Institutions

The danger threatening the Viennese medical institutions from political parties that wish to control them has been averted, at least for some time, by an unexpected occurrence. The government has come into possession of some 25,000,000 kronen (\$5,000,000), as the tax to be paid on the estate left by the late Baron Rothschild on his sudden death quite recently amounts to at least this sum. Out of this tax, the hospital fund must receive 24 per cent., or about 6,000,000 kronen. This will be sufficient to pay the deficit of this fund and also to stop any controversy as to responsibility for hospital relief to the poor, a fruitful source of interference for the above-mentioned political parties. The deceased, a member of one of the wealthiest private banking houses of Europe, has also left liberal legacies to various charitable institutes, so that these at least will have no need to appeal to the public corporations for help; another obstacle for political enterprise.

The Successor of Strümpell: A Recommendation by the Faculty

To-day a meeting of the professors of the medical faculty of Vienna took place, in which a special committee published the names of the professors it recommended as eligible to the appointment to the third medical clinic. Professor von Noorden had studied the problems connected with the affair. When von Strümpell suddenly resigned his post here, and went to Leipzig, in the place of Curschmann, the reasons given for his abrupt termination of an appointment were so serious that a most unpleasant controversy ensued. The medical faculty was justly offended at the manner the professor had been treated by the responsible officials, and for some time the relations between government and university were strained. When in December the possibility of the clinics becoming a domain of political influences was imminent, the faculty refrained from making the necessary recommendation of a competent successor, as it did not want to bind a first-class man to unstable conditions. After certain guarantees had been given by the government concerning the liberty of teaching and the independence of the clinics, the faculty reconsidered its position, and recommended the following candidates, who are named in the order of preference: Prof. Herman Sahli (Berne); Prof. E. von Romberg (at present in Tübingen), and two Austrians, Prof. F. Chvostek (Vienna) and M. Ortner (in Innsbruck). There is a certain tendency in the government circles to exclude candidates from Germany, since there are already several men here from that country, and because of the affair with Strümpell, who also came from that country. It is therefore probable that an Austrian will be appointed, and of the two the better chances are with Ortner.

Miscellany

Symptoms of Exophthalmic Goiter in Pulmonary Tuberculosis.—F. Bialokur noted Basedow symptoms in twenty-seven of 337 patients with pulmonary tuberculosis during 1908, and in twenty-eight in 1909. He tabulates the details of ten typical cases, remarking that the Basedow symptoms must be often overlooked in such cases elsewhere or ascribed to the tuberculous infection. The connection between the Basedow symptoms and the tuberculosis is more than casual, as is shown by the benefit that follows treatment addressed to the exophthalmic syndrome. As this improves, the pulmonary symptoms subside and the patient may be clinically cured. There is probably a vicious circle, the tuberculous toxin exerting an injurious influence on the thyroid, stimulating it to increased secretion, and this secretion may enhance the virulence of the tubercle bacilli, which, in turn, may rouse latent lesions into active processes. In his experience, every patient with exophthalmic goiter was already tuberculous; other physicians seldom examine the lungs with sufficient care with

Basedow patients, as their attention is concentrated too exclusively on the exophthalmic goiter. When enlargement of the thyroid is discovered with pulmonary tuberculosis measures to reduce it to normal size should be instituted at once, as thyroid functioning impresses a special character on the course of the tuberculosis. The changes in the lungs are of different kinds, and there may be great destruction, but, as a whole, the lesions are not the most malignant; obstinate diarrhea is the rule; the thyroid is not much enlarged and pronounced exophthalmos is rare; the patients are gloomy and despairing instead of the hopefulness common with tuberculosis. There is generally a tendency to sweats and the temperature is usually subfebrile, the urine normal. It is difficult to find any tubercle bacilli in the sputum, so that the trouble seems to be bronchitis rather than tuberculosis. The overwhelming majority of his patients were women. Pregnancies recurred with remarkably brief intervals, and the sexual instinct was strong and the menses abnormally frequent and profuse. In the ten typical cases described in detail besides the usual strychnin, arsenic or iron treatment, he exposed the thyroid to the Roentgen rays or had it removed. One man of 56 had had the Basedow syndrome and pulmonary tuberculosis for twelve years, and his daughter the same for four. Both were clinically cured by thyroidectomy. Bialokur's article was published in the *Zeitschrift für Tuberkulose*, 1910, xvi, 567.

Social Hygiene in Its Pedagogic Aspects.—A knowledge of the function of reproduction and a proper attitude of mind regarding it must be recognized by educators to be a necessary part of the equipment of every young person for life, says W. S. Hall (*Journal of Preventive Medicine*, February, 1911). Parents and teachers are morally bound to treat all questions of sex in the same simple, straightforward, truthful way that other life problems are treated. Responsibility for instruction of the young in sexual development and sexual right living should rest on parents; but as a rule parents do not discharge this responsibility, and therefore it devolves on the physician and the educator, and the societies formed for the purpose of educating the public on moral and social prophylaxis. The important lesson learned by Hall from years of experience in teaching emphasizes the importance of segregation of the classes to whom he talks. Boy hearers should be separated from men; mothers should be separated from fathers; mothers and daughters should be addressed in separate audiences. The more homogeneous the audience the more definite and positive can the statement of the speaker be. It is easy to see that in an address to a mixed audience of parents and children, sex problems would have to be discussed in a most general and indefinite way. The circumlocutions would have to be so veiled and the allusions so remote that they would be understood only by the most intelligent, and would probably be grossly misunderstood by the less intelligent and experienced. If the audiences were separated into the boys and men, and the women and girls, the situation would be somewhat better, but not wholly corrected. Concerning a division of the audience on age lines, the sexes being mixed, Hall's experience is that a speaker, particularly a physician, can talk much more freely to an audience of mothers than to a mixed audience of mothers and fathers. A frank statement of certain subjects in the daily journal, or in journals of hygiene, is a valuable method of imparting information, as they are read by the individual and here we have segregation carried to its ideal limit. Hall then discusses the matter to be presented to classes of boys or girls of different ages, and refers to the broader range of facts which may obviously be presented to parents. Hall has used three methods of presentation—the biologic, the moral and the heroic. The biologic is the ideal method of presenting the subject of reproduction and sexual life, but is feasible only for the teacher of biology of a high school or college, and is out of the question for social workers, physical directors and public lecturers. The moral method, an appeal, from a moral standpoint, for right living, Hall found to be not effective. The heroic method is based on the human instinct for hero worship. One can get hold of an audience of boys by a discussion of some of the world's great heroes, and will have their undivided, almost painful attention, when he

asks the questions: What is the secret of manhood? And: What can a boy do to grow into the highest type of virile manhood, which alone makes possible heroic deeds? Hall says that the lecturer can answer that question in the last five minutes of a forty-five minute talk, and leave every boy in the audience convinced and determined. He is convinced that incomparably the most effective method of presenting these matters to young people and parents, is a frank presentation of the findings of science. Don't try, he says, to point too many morals. If the presentation has been clear and convincing, the listeners will readily draw their own conclusions and formulate their own morals.

A Method for Determining the Absolute Pressure of the Cerebrospinal Fluid.—M. A. Cassidy and C. M. Page (*Proc. Roy. Soc. Med.*, January, 1911), have devised a simple apparatus for determining the absolute pressure of the cerebrospinal fluid with the escape of only an inappreciable and constant volume of the fluid. It consists of a hollow needle of 1.5 mm. bore, provided with a close-fitting stylet, the pointed ends of both of which are cut at an angle of about 35 degrees. Two cm. from the blunt end of the needle there is a simple cock. Into the lumen of the needle beyond this cock can be fitted a tapped nozzle, which is connected to an open glass tube 18 cm. in length and 15 mm. in diameter by means of rubber pressure tubing 1 meter in length. A wooden clip to which is attached a measuring tape can be fixed to any point of this glass tube. In order to take a reading the following technic is observed: After sterilizing the apparatus the patient is placed on the side with the lumbar spine well flexed, with the cerebrospinal axis horizontal. Normal saline solution at 120 F. is poured into the glass tube and pressure tubing, and the tap on the nozzle is closed when the glass tube is half full of the solution; the wooden clip is then fixed on the glass tube to mark the level of the saline solution. The theca is punctured through one of the lumbar spaces, the needle being introduced exactly in the middle line and perpendicular to the coronal plane; the stylet is withdrawn and the cock is closed as soon as the cerebrospinal fluid appears at the orifice of the needle; not more than a drop or two should be lost. The pressure tubing is then connected to the needle by means of its nozzle, and the glass tube is held so that the level of the fluid in it is at a height above the needle roughly equal to the expected reading. Both the taps, that is, that on the needle and that on the nozzle, are now opened so that the saline solution may be balanced against the cerebrospinal pressure. If the latter is greater than the height of the saline solution, fluid will rise above the level of the wooden clip, and vice versa. The glass tube is quickly raised or lowered, as may be necessary to keep the contained solution at its original level; the vertical height of the clip above the needle will then give the intrathecal pressure in terms of centimeters of normal saline solution. The density of normal saline solution at 120 F. is almost identical with that of water. When proper communication has been established between the saline solution in the tube and the cerebrospinal fluid, a regular rise and fall in the pressure to the extent of about 1 cm. will be observed, synchronous with the respiratory movements; unless this respiratory excursion is present no reading is of value. The method has been used in over sixty cases. The highest pressure observed by Cassidy and Page was 100 cm. saline in a case of cerebral abscess, and the lowest 7 cm. in a case of diabetes insipidus.

Fallacies Regarding the Transmission of Infectious Diseases.—With the establishment of the germ theory and the discovery of certain organisms always present in certain diseases we began to reconstruct our ideas regarding the manner with which these diseases are spread and new ways of prevention and cure are sought. B. R. Rickards (*Quar. Bull., Ohio State Board of Health*, October-December, 1910) says that old ideas in regard to the transmission of infectious diseases are hard to eradicate. Diphtheria, prior to the discovery of the Klebs-Loeffler bacillus, was supposed to have some connection with sewer gas or broken drains, and wherever a case of diphtheria was found a faulty trap or other imperfection was hunted for and usually found. We know now that the diphtheria bacillus is not

found in the air or soil of drains. The only significance of the sewer-gas theory is that continually breathing such gas lowers the vitality and renders the person more liable to infection. It is now generally believed that diphtheria is almost always conveyed from mouth to mouth by means of kissing, public drinking cups, spoons, gum, etc. It seems probable that diphtheria is not conveyed by clothing, wall paper or other inanimate objects, except perhaps articles like handkerchiefs. It may be conveyed from persons who are perfectly well, who harbor diphtheria germs in their throats, but who possess sufficient resistance to prevent the development of the disease in themselves. Typhoid fever was formerly supposed to originate from filth such as decaying garbage, etc. This conception contained a grain of truth, but not the whole truth. Filth does serve as a breeding-place for flies, which are active spreaders of disease, including typhoid fever. The disease cannot originate except from a previous case and rural wells are only sources of typhoid when they are contaminated by human excrement from a patient with typhoid fever. It has been believed that street dust infected by spitting, infected rooms, milk from tuberculous cows and the like, are factors in spreading tuberculosis, and this is perhaps true to a certain extent. Experiments conducted by Rickards and others tend to show that heavily-infected sputum is rendered harmless in an apparently short time by the effect of the sun, and that after drying sufficiently so that it can be blown about as dust, the germs will be destroyed. Infected rooms undoubtedly play a larger part, as direct sunlight cannot reach all parts of the rooms and reflected light has a slower destructive action on the germs. The milk from cows is no doubt responsible for some tuberculous infection, but to a lesser degree perhaps than are human sources. The milk becomes infected most frequently from the excrement and it is probable that in babies the infection is most frequently communicated by kissing or by feeding utensils. What has been said regarding these common diseases applies also to such infections as measles, scarlet fever, small-pox, etc. Rickards urges that in the work of combating infectious diseases we should abandon exploded theories and get down to the actual facts and modify our quarantine and other measures accordingly.

Unusual Complications of Chronic Nephritis.—A. Pollak reports some interesting cases in the *Wiener klinische Rundschau*, 1910, xxiv, showing that pleurisy, pericarditis, peritonitis and even meningitis may develop as a complication of chronic nephritis. Also that in the stage before actual uremia, symmetrical fibrillary twitching may be observed or a syndrome suggesting multiple sclerosis and hysteria. In one case acute peritonitis developed in the course of a mild chronic nephritis in a middle-aged man. In another case acute meningitis developed in a woman of 47 with signs of nephritis. He has encountered three cases of the complicating pericarditis. In all the above cases the serous membrane became suddenly affected in the midst of apparent health except for the mild nephritis. All the patients died except one man who passed through two attacks of the pericarditis and succumbed a few months later to a heart lesion. In another case a woman of 56 with chronic nephritis began to notice fibrillary twitching in the extremities. In a few days a typical attack of uremia followed in which the patient succumbed. Another patient was a young woman who complained of headache frequently recurring during the last four months. Physical examination was negative but he urged the patient and her mother to send him some urine for examination. Under tonics the young woman's symptoms subsided and she neglected to send the urine. Nearly a year afterward he was called in again and found the young woman with severe symptoms suggesting multiple sclerosis. Two days after this rapidly fatal uremia cleared up the diagnosis. It is rarely, he says, that chronic nephritis runs its course in this way without attracting attention to the kidneys. If his warnings in regard to urine examination had been heeded, the nephritis might have been detected and treated in time. In another case a little girl grew pale and the medical inspector of the school found dulness over the right apex and râles, and gave directions for general treatment of tuberculosis. He sent

the child to a lung specialist a week later who confirmed his diagnosis, and referred the child to Pollak for a certificate entitling her to a course in a sanatorium for lung affections. Pollak examined the urine and found 2 per cent. albumin with tube-casts and red corpuscles; the child died in six weeks. He comments that this case speaks volumes for the necessity of medical school inspectors confining themselves to mere detection of illness and warning the parents that the child is sick and should be taken to a physician. The physician can then make an examination much more thoroughly than is possible in the school, and institute appropriate measures in time.

Sanitary Food Production.—Declaring that food, though chemically pure, may be sanitariously unfit to eat, H. E. Barnard, State Food and Drug Commissioner of Indiana, in an address delivered before the Association of State and National Dairy Departments, at New Orleans in December, 1910, stated his belief that this fact will be the basis of future food legislation, and that the work of the food departments, commissioners and inspectors will be less and less given to controversial discussions of labels and manufacturers, and instead will be devoted to the promulgation of the old maxim in a new version, "cleanliness is godliness," among food producers and distributors. To him the astonishing thing is that for so many years we have trailed after the milk wagon in search of watered samples, and never entered the dairy to hunt the reason why the infant mortality of our cities is ten times as high among bottle-fed as among breast-fed infants; that we have frantically fought the rainbow-hued demon whose dye-pot made strawberry pop, jellies and confectioneries esthetically attractive, forgetting in the fray that polluted water in the pop bottle is a thousand times more dangerous to the consumer than anilin red, and that rotten fruit is a worse adulterant of jam than an atom of Biebricht scarlet; that we have fought relentlessly the substitution of oleomargarin for butter on the boarding-house table and never made a move to prevent the sale for food of rancid, filthy country butter, infinitely worse for the consumer and a more vigorous competitor of the product of the trained butter-maker than all the oleomargarin factories in the country. The fact faces us that the grocer who is honest but dirty strikes a more direct blow at the health of the community than his competitor, who does not hesitate to sell distilled water for cider vinegar and cotton-seed oil for olive oil, but who in the commission of his crimes sees to it that his hands are sanitariously clean, his goods free from dust, and his clerks undiseased; and that the butcher who sells tuberculous meat is infinitely more dangerous than he who mixes stearin in his lard or puts cracker crumbs in his sausage. The one class robs us of our heritage of health; the other steals but the lining of our pocket-books.

Report of Loomis Sanatorium.—The 1910 report of Loomis Sanatorium, Liberty, N. Y., for the treatment of tuberculosis, shows that 416 patients were admitted during the year and 411 discharged. The physician in chief, in summing up the work of the year, emphasizes the fact, to which attention was called in the report for 1909, of the undoubted relation between the length of stay in the sanatorium and the result of treatment, at least so far as the class of "apparent cures" is concerned. Thus, in 1907, with an average stay in the institution of 31.44 weeks there were 18.80 per cent. of apparent cures; in 1908, with an average stay of 43.09 weeks, the apparent cures were 21.52 per cent.; in 1909, with an average stay of thirty weeks, the apparent cures were 15.61 per cent.; while in 1910 the average stay was 26.62 weeks and the apparent cures amounted to but 12.30 per cent. This relation is also borne out in the class of incipient cases. In 1908, for instance, 72 per cent. of incipient cases were discharged as apparently cured, after an average residence of 25.83 weeks; in 1909, but 43.75 per cent. after a stay of 19.62 weeks, and about 50 per cent. in 1910 after an average residence of 19.66 weeks. It is found that this applies not only to the immediate results, but has a bearing on the ultimate results after the patient leaves the sanatorium. Forty-nine patients received tuberculin treatment in addition

to the other measures, thirty-three of these for a period exceeding ninety days. One died. All the rest were improved, arrested or apparently cured. Following out the plan conceived and mentioned in the report for 1909, a more scientific method of feeding the patients has been followed during the past year. Careful weighing of the food, and computation of the chemical constituents, and more extended experience have permitted the division of the patients into three classes with regard to their diet, with the result of securing a diet more nearly adapted to the individual requirements, with consequent greater benefit to the patients. The report still further confirms the conclusion that the sanatorium treatment of tuberculosis presents great advantages over any other plan.

Pregnancy After Nephrectomy.—At the recent annual meeting of the French Société d'obstétrique, de gynécologie et de pédiatrie, several members reported cases of apparently normal pregnancy in women who had had one kidney removed on account of tuberculosis. Pinard, Pousson and Hartmann reported experiences in this line, the total on record, according to them, being now 113 cases in which an operation on the kidney for tuberculosis or other cause was accompanied or followed by a pregnancy. In the thirty-five cases in which the operation was done on the pregnant woman, the pregnancy did not seem to be affected in any way and it did not render the prognosis of the kidney operation any more serious. In seventy-four other cases the women became pregnant after the nephrectomy. With the exception of one woman who died from eclampsia and another from renal insufficiency during the puerperium, the single kidney answered every purpose, although it was itself diseased in a few cases and delivery had been difficult in a few others on account of contracted pelvis or other cause. In three cases the pregnancy followed nephrotomy; it terminated in abortion in one case but the other patients had two and three normal pregnancies. In another case a normal pregnancy followed bilateral decapsulation of the kidney. The conclusions were that even when the kidney has been removed for tuberculosis, if the urine is free from bacilli, marriage may be permitted to girls. Pousson stated that fifty-nine out of sixty-five women on whose kidneys he had operated have passed through a normal pregnancy since and some three pregnancies. In seven others there was abortion. In every instance the puerperium was free from complications, and most of the women could nurse their children, one becoming a professional wet-nurse. The children were all healthy at birth and to date, except that one has died of whooping-cough and another at the age of 15 months of tuberculous meningitis.

Conservative Treatment of Total Rupture of Lower Segment of Uterus.—A. Boero, Buenos Aires, in a communication to the *Semana Medica*, 1910, xvii, 1657, reviews the indications in such cases and reports five cases from his own experience in which notwithstanding this serious complication of childbirth all the patients but one recovered. The aim is to refrain from anything that might increase the shock from which the woman is suffering. The uterine artery is rarely involved in the laceration and what hemorrhage there is comes from the site of the placenta. When there is no shock he removes the uterus at once, but in the severer cases he tries to tide the patient past the shock period and give her time to recuperate. A month or two later it is a comparatively simple matter to remove the whole or part of the uterus. The fetus is nearly always dead after such a rupture, he says, and it should be extracted with a mutilating operation if necessary to get it and the placenta out of the way as rapidly as possible, without version. There should be no rinsing out of the uterus or vagina. The obstetrician's hand is introduced and the lower lips of the upper segment are drawn together and held between the thumb and index finger and thus worked down inside the lower, torn-off segment; the fingers are then replaced by forceps and the upper segment is securely fitted into the lower segment, thus shutting off all communication between the vagina and uterus and the peritoneal cavity, except for a small tunnel made in the broad

ligament for drainage, through which a wick of gauze is pushed. The lower segment and vagina are then packed with gauze. The obstetrician must realize that his hand is the vulnerable point in the procedure and that on his sterilization of his hands depends the outcome of the case. In the one fatal case in his experience several hours had elapsed after the rupture before the patient was brought to the clinic and various forceps applications had been made.

Loss of Appetite in Tuberculosis.—B. Schleisiek contributes an article on this subject to the *Zeitschrift für Tuberkulose* in which he states that the loss of appetite with a tuberculous pulmonary process may be the result of the action of toxins or of a latent tuberculous process in the cecum. The latter is more common than generally recognized; it may be discovered by systematic palpation, eliciting mild pain in the region. The diagnosis is confirmed by an injection of tuberculin which induces a typical focal reaction at this point. He adds that the tuberculous process in the cecum once diagnosed, operative treatment should follow at once, as tuberculosis of the intestines seldom heals spontaneously and in the appendix practically never. The operation is simple and easy at this early stage. Persistent lack of appetite may be the only sign of the intestinal process for a long time. Even the toxic anorexia may be favorably influenced by tuberculin treatment. The abnormal secretory conditions in the stomach return to normal under the influence of the tuberculin.

Soil Pollution by Hookworm.—Stiles and Gardner (Bulletin U. S. P. H. and M.-H. Service) have conducted experiments for the purpose of determining the length of time hookworm eggs may retain their vitality in the soil and under various conditions of drying and temperature. The soil under and around the privy is not entirely free from infection with hookworm even five months after the privy was last used, although the infection is considerably reduced at the end of four months. When the fecal material has undergone decomposition under water most of the hookworm eggs are dead in about ten weeks, though some still survive but they would probably all be dead in three months. It would not be safe to use such material as a fertilizer in less than three months. It has been shown that chlorid of lime fails to kill hookworm eggs in twenty-two to forty hours. The eggs of the typhoid fly and other species of fly are still capable of development after that length of time, and the flies are capable of reaching the open air even when material in which they breed has been buried under from 17 to 72 inches of sand.

American Achievements in the Tropics.—In declining an invitation to attend a banquet President Taft made this fine tribute: "We have real ground for national pride in the fact that England, France, Germany—Germany not so much so—and Holland have been engaged in the colonial business in the tropics for 100 years, some of them 200 years, and yet it remained for American physicians, and especially the physicians in the army to discover more things in the ten years since the Spanish-American War than were discovered in the whole two centuries before that time; and if nothing else justified the Spanish-American War, the discoveries of the American physicians since that time—what I may term the sequence of the war—were ample to justify the expenses of that war to ten times over. It is a real record of achievement of a national character that everyone who understands it must dwell on with sincere pride."

Marriages

HENRY FRANCIS BALLARD, M.D., to Miss Louise Myers, both of Chenoa, Ill., February 22.

JOHN STEPHAN NAGEL, M.D., Chicago, to Miss Evelyn Morrison Robinson of New York City, March 7.

EDWARD MONTGOMERY WELLBERY, M.D., to Miss Rosemary Carney, both of Brooklyn, N. Y., February 28.

BLEEKER J. KNAPP, M.D., Evansville, Ind., to Miss Eleanor Dee Gordon of Madisonville, Ky., recently.

MARTIN WASHINGTON YENCER, M.D., Richmond, Ind., to Miss Jeanette Hill, at Richmond, February 23.

PRESTON WORLEY, M.D., Clovis, N. Mex., to Miss Ethel Audrey Kennedy of Youngstown, O., February 28.

NATHANIEL H. MANRING, M.D., Elwood, Ind., to Mrs. A. C. Gordon of Indianapolis, at Louisville, Oct. 31, 1910.

GEORGE GRAHAM HUNTER, M.D., Los Angeles, Cal., to Miss Grace Geraldine Hildreth, at Los Angeles, Dec. 20, 1910.

GEORGE ALFRED LAWRENCE, M.D., to Mrs. Julia W. M. Curtis, both of New York City, at Wilmington, Del., February 14.

FRANK LOSSING CARPENTER, M.D., Berkeley, Cal., to Mrs. Mary Saylor Bingham of Glens Falls, N. Y., at Oakland, Cal., February 1.

Deaths

Henry Pickering Bowditch, physiologist of world-wide fame, formerly dean of Harvard Medical School, died at his home in Jamaica Plain, Boston, March 13, aged 70. He was graduated from Harvard University with the degree of A.B. in 1861, and served during the Civil War in the Massachusetts Volunteer Cavalry, attaining to the rank of major. At the close of the war he entered Harvard Medical School and was graduated from that institution in 1868. He then pursued studies in his chosen branch of physiology for three years in Germany, and on his return to the United States in 1871 was made assistant professor of physiology in Harvard Medical School. From 1876 to 1903, he was professor of physiology in that institution, dean of the school from 1883 to 1893, and George Higginson professor of physiology from 1903 to 1906. He was given the honorary degree of D.S.C. by the University of Cambridge in 1898, and the degree of LL.D. by Edinburgh University in 1898, Toronto University in 1903, and the University of Pennsylvania in 1904. He was a member of the American Medical Association, American Academy of Arts and Sciences, National Academy of Sciences, American Philosophical Society, American Society of Naturalists, and American Physiological Society. In 1896 and 1900 he served as vice-president of the American Association for the Advancement of Science, and was also a corresponding member of the British Association for the Advancement of Science. Dr. Bowditch was a prolific writer on his specialty of physiology. Aside from his eminence as a scientist, Dr. Bowditch endeared himself to all who knew him by his character as a man; especially to his students was he the ideal of the scholar, the man, and the courteous, polished gentleman, and his influence in arousing in them a desire for thorough work and for living up to the highest ideals of the profession was great and permanent.

Daniel Augustus Currie, M.D. Buffalo (N. Y.) Medical College, 1864; a member of the Medical Society of the State of New Jersey; and of the Association of Military Surgeons of the United States; past president of the Alumni Association and for five years a trustee of the university; one of the organizers of the Englewood, N. J., Hospital; a member of the operating staff of the Hackensack Hospital; major-surgeon of the Fifth Infantry, N. G. N. J., and lieutenant colonel of the Second N. J. Infantry, U. S. V., during the Spanish-American War; local surgeon of the Erie Railroad; first mayor of Englewood, and afterward reelected to that office; died at his home, February 28, from cancer, aged 70.

Eugene Kingman, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the American Medical Association, and Boston Society of Psychiatry and Neurology, and president of the Rhode Island Medical Society in 1910; neurologist to the Rhode Island Hospital; organizer and first chief of the staff of the Providence Lying-In Hospital; a charter member and first president of the Rhode Island Hospital Club; died at his home, February 26, from uremia, aged 67.

Albert Joseph Erdman, M.D. Jefferson Medical College, 1873; a member of the Medical Society of the State of Pennsylvania, and formerly president and treasurer of the Lehigh County Medical Society; for seven years a member of the local pension examining board; for several years school director of Allentown, and for thirteen years physician to the Lehigh County Almshouse; died at his home in Allentown, March 1, from cerebral hemorrhage, aged 58.

Bartlett Norton Torrey, M.D. Washington University, St. Louis, 1874; a member of the American Medical Association; formerly local surgeon of the Burlington System, and vice-president of the Cottage Hospital, Creston, Ia.; superintendent of the Omaha General Hospital in 1905 and 1906; for the last

two years a resident of Detroit; died in Harper Hospital, March 2, from nephritis following prostatectomy, aged 66.

Skiles McKechan Woodburn, M.D. University of Pennsylvania, Philadelphia, 1872; a member of the American Medical Association; and for many years inspector of the State Board of Health for Bradford County; for nine years local pension examiner; a member of the board of health, town council and board of education of Towanda, Pa.; died at his home, February 22, from pneumonia, aged 60.

John Williams Coe, M.D. Johns Hopkins Medical School, Baltimore, 1898; a member of the American Medical Association; and New York Academy of Medicine; instructor in clinical pathology in Cornell University Medical College; and physician to the skin department of the Presbyterian Hospital, New York City; died at that institution, March 6, from pneumonia, aged 38.

Daniel Maynard Burgess, M.D. New York University, New York City, 1852; a member of the American Medical Association; surgeon of the steamship *Atlantic* in 1856; health inspector for the United States government in Cuba from 1874 to 1898; an authority on yellow fever; died at his home in New York City, March 1, from pneumonia, aged 82.

Oswald Warner, M.D. College of Physicians and Surgeons, New York City, 1854; a veteran of the Civil War; formerly assistant on the medical staff of the New Jersey State Hospital, Morris Plains; for several terms president of the District Medical Society of Passaic, N. J.; died in Newark, February 20, aged 77.

Theodore Bacmeister, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1856; a pioneer practitioner of central Illinois; professor of materia medica and therapeutics in Hahnemann Medical College, Chicago, in 1869 and 1870; died suddenly at his home in Toulon, Ill., March 8, from angina pectoris, aged 81.

William Wheeler Hewlett, M.D. Bellevue Hospital Medical College, 1869; a member of the Medical Society of the State of New York; formerly president of the Suffolk County Medical Society; twice president of Babylon village and twice health officer; died at his home, March 5, from heart disease, aged 63.

George Duffield Stewart, M.D. Detroit (Mich.) Medical College, 1878; sheriff of Wayne County, Mich., in 1898 and 1899; formerly city physician of Detroit and physician of Wayne County; afterward a resident of Mt. Clemens; died at his home in that place, March 7, from nephritis, aged 55.

Girard Bryce Edwards, M.D. Ohio Medical University, Columbus, 1905; a veteran of the Spanish-American War; of Cheraw, Colo.; formerly of Clearfield, Pa.; and jail physician of Clearfield County; died at his home, March 1, from tetanus following an injury to the left ankle, aged 35.

Lowrie Payne Hapgood, M.D. Western Pennsylvania Medical College, Pittsburg, 1897; a member of the American Medical Association; formerly president of the school board of Bedford; died at his home in South Side, Pittsburg, March 6, from pneumonia, aged 34.

John T. Wilkins, M.D. Jefferson Medical College, 1843; University of Maryland, Baltimore, 1851; a member of the Northampton County (Va.) Medical Society; died at his home in Vacluse near Eastville, Va., Nov. 16, 1910, from senile debility, aged 90.

Leonidas E. Best (license, Ontario, 1865); formerly of Grand Rapids, Mich.; for two terms coroner, and a member of the board of supervisors of Kent County; died at the home of his daughter in Salt Lake City, February 28, from cerebral hemorrhage, aged 66.

John S. Boyd, M.D. University of Pennsylvania, Philadelphia, 1870; superintendent of admission of Girard College, Philadelphia; and connected with the Girard estate for twenty-seven years; died at his home, March 6, from pneumonia, aged 62.

William T. Carpenter, M.D. University of Nashville, Tenn., 1864; of Iron Mountain; a veteran of the Civil War, and one of the founders of the Ishpeming Hospital; a member of the Michigan State Medical Society; died in Maitland, Fla., March 6, aged 73.

William A. Whitlock, M.D. University of Tennessee, Nashville, 1885; of Ukiah, Cal.; died in St. Winifred's Hospital, San Francisco, February 26, from brain disease following an infection received during an operation four months before, aged 58.

George Delos Coe, M.D. Eclectic Medical Institute, Cincinnati, 1872; a veteran of the Civil War; for several years city

physician of Carthage, Mo.; died at his home in San Francisco, February 5, from acute intestinal disease, aged 73.

Alfred Lewis Wolfe, M.D. Washington University, Baltimore, 1877; a member of the American Medical Association; for several years a practitioner of Elkton, Va.; died at his home in Roanoke, Va., March 2, from tuberculosis, aged 57.

Thomas R. Mask, M.D. Leonard School of Medicine, Raleigh, N. C., 1889; an esteemed colored practitioner of Wilmington, N. C.; and a member of the New Hanover County Medical Society; died at his home, February 19, aged 48.

James Mooney, M.D. Detroit (Mich.) Medical College, 1877; a member of the American Medical Association, and Panhandle Medical Association; died at his home in Wellington, Tex., Dec. 4, 1910, from pneumonia, aged 58.

James B. Judson, M.D. Homeopathic Hospital College, Cleveland, O., 1876; a veteran of the Civil War, and a practitioner since 1863; died at his home in Springport, Mich., January 21, from cerebral hemorrhage, aged 66.

J. A. Parsons, M.D. Atlanta (Ga.) Medical College, 1884; of Bowersville; a member of the Medical Association of Georgia; died in the Grady Hospital, Atlanta, February 25, from cerebral hemorrhage, aged 49.

Elijah B. Woolston, M.D. University of Pennsylvania, Philadelphia, 1854; a member of the Medical Society of New Jersey; died at his home in Marlton, Dec. 17, 1910, from cerebral hemorrhage, aged 77.

Colin Bancroft McKenzie, M.D. University of Michigan, Ann Arbor, 1891; acting assistant surgeon U. S. P. H. and M.-H. Service; died at his home in Harbor Beach, Mich., March 6, from heart disease, aged 50.

M. Duke Kimbrough, M.D. University of Pennsylvania, Philadelphia, 1860; a member of the Medical Society of the State of North Carolina; died at his home in Mocksville, Nov. 26, 1910, aged 72.

Robert W. Joyner (license, North Carolina); a member of the American Medical Association and Seaboard Medical Association; died at his home in Woodland, January 11, from myocarditis, aged 70.

Frederick Howard Files, M.D. Medical School of Maine, Brunswick, 1888; a member of the South Dakota State Medical Association; died at his home in Madison, March 1, from pneumonia, aged 48.

King Holt, M.D. Tulane University, New Orleans, 1871; of Baton Rouge, La.; for several years a sanitary officer of the United States government in South America; died at his home, February 18.

Lewis Nathaniel Howard, M.D. Homeopathic Medical College of Missouri, St. Louis, 1870; a Confederate veteran; died at his home in Indianapolis, February 23, from interstitial nephritis, aged 73.

Charles Austin Jennings, M.D. Starling Medical College, Columbus, O., 1889; formerly of Delevan, Ill.; died at the home of his aunt near Olathe, Kan., February 21, from tuberculosis, aged 43.

John P. Johnston, M.D. Jefferson Medical College, 1879; a member of the West Virginia State Medical Association; died at his home in Wellsburg, March 6, from ptomain poisoning, aged 55.

Edmund Roy Gustin, M.D. University of Buffalo, N. Y., 1893; of Harrison Valley, Pa.; coroner of Potter County in 1895; died in the Williamsport General Hospital, February 9, aged 30.

Augustine Gandier, M.D. Queen's University, Kingston, Ont., 1890, and gold medalist of his year; M.R.C.S., L.R.C.P., L.S.A., London; died at his home in Sherbrooke, Que., Dec. 15, 1910, aged 45.

Charles Lisle Bond, M.D. University of Buffalo, N. Y., 1903; a member of the Medical Society of the State of New York; died at his home in Valois, February 25, from pneumonia, aged 38.

Frank J. Maschek, M.D. Rush Medical College, 1882; formerly a member of the American Medical Association; died at his home in Chicago, February 10, from cancer of the tongue, aged 50.

Lonnie Ray Wood, M.D. Vanderbilt University, Nashville, Tenn., 1910, and recipient of the Founder's Medal; died at his home in Attalla, Ala., February 9, from pneumonia, aged 23.

Oscar W. Roberts (license, Arkansas, 1907); an eclectic practitioner of Reyno; is said to have been killed by a blow from the mace of the city marshal of Reyno, Dec. 5, 1910, aged 26.

William B. Hart, M.D. University of Buffalo, N. Y., about 1846; for nearly sixty years a practitioner of McHenry County, Ill.; died at his home in Greenwood, February 19, aged 99.

Washington Jackson Caldwell (license, Tuscaloosa County, Ala.); a Confederate veteran and one of the oldest practitioners of Tuscaloosa; died at his home, February 28, aged 81.

Addison Wilson Bare, M.D. University of Louisville, Ky.; 1860; a member of the Indiana State Medical Association; died at his home in Bryantsville, February 27, aged 84.

Merrill James Galloway, M.D. Philadelphia University of Medicine and Surgery, 1874; died at his home in Philadelphia, February 28, from heart disease, aged 72.

Isaac M. McBride, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1877; died at his home in Rugby, N. Dak., March 1, from tuberculosis of the lungs, aged 56.

Maria Stewart Loughborough Edwards, M.D. American Medical Missionary College, Chicago, 1899; formerly of Moline, Ill.; died in St. Helena, Cal., February 28.

Thomas A. Andrews, M.D. Jefferson Medical College, 1868; a Confederate veteran; died at his home in Seagoville, Tex., January 26, from pneumonia, aged 64.

George E. Williams, M.D. Medical College of Virginia, Richmond, 1902; formerly of Richmond; died at his home in Pearisburg, Va., February 21, aged 35.

Francis Marion Moore, M.D. Rush Medical College, 1876; Kansas City (Mo.) Medical College, 1879; died at his home near Perry, Mo., February 17, aged 55.

Edmon C. Waltersdorf, M.D. Hahnemann Medical College, Chicago, 1881; died at his home in Detroit, March 5, from accidental gas asphyxiation, aged 58.

L. B. Chilton, M.D. Shelby Medical College, Nashville, Tenn., about 1860; died at the home of his niece in Guthrie, Ky., January 5, from nephritis, aged 72.

Valentine Fritts, M.D. Kansas City (Mo.) Hospital College of Medicine, 1885; died at his home in Luray, Kan., February 5, from pneumonia, aged 61.

William C. Moughon, M.D. University of Louisville, Ky., 1876; died at his home in Wills Point, Tex., March 2, from laryngeal tuberculosis, aged 56.

John Biggs Standlee, M.D. American Medical College, Eclectic, St. Louis, 1904; died at his home in Peoria, Ill., February 17, from tuberculosis, aged 33.

Herschel Josephus Logan, M.D. University of the South, Sewanee, Tenn., 1897; died at his home near Plains, Ga., February 26, aged about 40.

George Davis (license, Iowa, years of practice, 1886); of Canton, Ia.; died at the home of his brother in South Garry Owen, February 9, aged 58.

Thomas Blackwood, M.D. Jefferson Medical College, 1874; died suddenly at his home in Flushing, O., February 20, from heart disease, aged 62.

John B. Hollingsworth, M.D. Starling Medical College, Columbus, O., 1865; died at his home in Quaker City, O., January 16, aged 78.

Eugene Orville Bardwell, M.D. University of Buffalo, N. Y., 1879; died at his home in Emporium, Pa., Jan. 4, 1910, from pneumonia, aged 55.

Francis J. J. McHugh, M.D. Detroit (Mich.) College of Medicine, 1889; died at his home in Detroit, February 25, from pneumonia, aged 50.

John E. Sommers, M.D. Eclectic Medical Institute, Cincinnati, 1892; died at his home in North Baltimore, O., February 26, aged 56.

Thomas Crosgrove, M.D. Rush Medical College, 1869; died at his home in Hubbard, Ia., February 18, from cancer of the face, aged 69.

N. L. Holt (license, Texas, 1907); died at his home in Chilli-
cothe, February 22, four days after an operation for appendicitis, aged 36.

Lewis Addison Fairchild, M.D. Rush Medical College, 1890; died at his home in Peru, Neb., February 22, from diabetes, aged 62.

Charles J. Sherer (license, Oklahoma, Act of 1908); died suddenly at his home in Kent, Oct. 21, 1910, from heart disease.

C. Almon Paul, M.D. Hahnemann Medical College, Chicago, 1889; died at his home in Solon, Me., February 22, aged 57.

Thomas E. Tribble, M.D. University of Tennessee, Nashville, 1833; died at his home in Bloomfield, Mo., February 23.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

COMPRESSED OXYGEN

Report of the Council on Pharmacy and Chemistry

The referee of the Council appointed to report on the composition of compressed oxygen as found on the market and to make recommendations as to its inclusion with New and Nonofficial Remedies submitted the following report:

The Section on Stomatology at the 1909 session of the American Medical Association having recommended the inclusion of compressed oxygen with the U. S. Pharmacopeia, the Council voted to describe this product with New and Nonofficial Remedies until such Pharmacopeial recognition had been secured. This action having been decided on, it became necessary to provide standards of purity for this substance. Correspondence both with firms who make the product as well as with those who use it gave the referee of the Council little information as to what degree of purity should be required for this substance, and it therefore became necessary to examine the product as it was found on the market.

Professor Warren R. Smith of Lewis Institute, Chicago, kindly offered to cooperate with the Council and to make an examination of this product. The referee herewith transmits the very thorough report regarding the composition of commercial compressed oxygen which has been made by Professor Smith in collaboration with Edwin D. Leman. The referee recommends that the Council express its appreciation for the work and that it request publication of the report in THE JOURNAL. The referee further recommends that the description of compressed oxygen submitted herewith be adopted for inclusion with New and Nonofficial Remedies.

This report was adopted by the Council and in accordance therewith the examination of Smith and Leman is published below and the description of compressed oxygen appears with New and Nonofficial Remedies on another page of this issue of THE JOURNAL.

W. A. PUCKNER, Secretary.

The Purity of Compressed Oxygen

PROF. WARREN R. SMITH AND EDWIN D. LEMAN

We have recently examined three specimens of commercial oxygen, purchased in the open market, with the results shown in the accompanying table.

Maker	Chicago Oxygen Gas Co., Chicago	Ohio Chemical and Mfg. Co., Cleveland	S. S. White Dental Mfg. Co., Philadelphia
Per cent. oxygen.....	94.78 94.80*	97.84 97.85*	96.84 96.76*
Per cent. nitrogen ¹	5.22 5.20*	2.15 2.16*	3.09 3.17*
Potassium iodid test....	5.22 5.20†	2.14 2.16†	3.09 3.00†
Per cent. carbon dioxid.	Negative.	Negative.	Negative.
Carbon monoxid methane, etc.....	Negative.	Negative.	Negative.
¹ That is, not absorbed by potassium pyrogallate.			
* Smith.			
† Leman.			

The gas from the Chicago Oxygen Co. was claimed to be under a pressure of 16 atmospheres. The amount of nitrogen found in this sample is just about that which would be present if pure oxygen were forced into a container filled with air under one atmosphere pressure until a pressure of 16 atmospheres was reached. The other samples were stated to be under a pressure of 1,600 lbs., so that the amounts of nitrogen found cannot be accounted for by a similar hypothesis.

The potassium iodid test mentioned in the table consisted in passing from 2 to 4 liters of the gas through a solution containing starch and potassium iodid. A negative result in this test shows that the gas is free from chlorine, ozone, oxides of nitrogen, etc. The negative results for carbon dioxid mean that not more than a slight opalescence was obtained by passing 2 to 4 liters of the gas through a solution of barium

hydroxid. The carbon monoxid test was made by passing the gas through alkali to remove all carbon dioxid, then over heated platinum, and finally through barium hydroxid solution. A negative result here shows freedom from carbon monoxid, methane and other hydrocarbons.

Shot-Gun Prescriptions and Shot-Gun Specialties Combined

A physician in a small town in Nebraska writes: "In looking over a prescription file not long ago I found a prescription which I copied and am sending to you. It is a good example of shot-gun prescribing. I do not give the name of the prescriber, and you will please not mention from whence this comes. The doctor who wrote this has had about ten years' experience."

Here is the prescription given exactly as transmitted by our correspondent:

Sp. sticta	Gtt xv
Sp. ipecac	Gtt x
Sp. bryonia	Gtt x
Sp. macrotys	3i
Bromoform Bronchial Anodyne.....	3ii
Syrup Cocillana Comp. q. s. ad.....	3vi
Teaspoonful every two or three hours.	

It is evident that the prescriber is an eclectic. As a matter of fact, in a second letter from the physician who forwarded the prescription, we are informed that the prescriber is a graduate of an eclectic institution not a thousand miles from where he practices. The "Sp" in the prescription does not mean "Spiritus," but specific tincture. The prescriber is an advocate of specific remedies, one of which should fit the condition, but he is broad-minded enough to call help from the outside, and so adds fifteen other remedies to the specific selected, including alcohol. The inability of one mind to remember all the ingredients of so complex a mixture will explain the fact that ipecac is duplicated, occurring both as a specific tincture and as an ingredient of Bromoform Bronchial Anodyne. The latter, the manufacturers tell us, contains in one fluidounce:

Alcohol	5 per cent.
Bromoform	8 drops
Ipecac	1/2 gr.
Ammonium bromid	24 grs.
Benzoin	1 gr.

Syrup-Cocillana Comp., one of the "elegant specialties" of Parke, Davis & Co., of which they certainly ought to be very proud, contains, we are told, in one fluidounce:

Alcohol	5 per cent.
Heroin hydrochlorid	8/24 gr.
Tinct. of euphorbia pilulifera.....	120 min.
Syrup of wild lettuce.....	120 min.
Tinct. of cocillana.....	40 min.
Syrup of squill comp.....	24 min.
Cascarin, P. D. & Co.....	8 grs.
Menthol	8/100 gr.

This "elegant specialty" of Parke, Davis & Co. is not only a shot-gun prescription, but has as one of its ingredients a mixture itself containing three ingredients, namely: Syrup Squill Comp. (Coxe's Hive Syrup), making ten in all—a beautiful example of scientific pharmacy.

We wonder if our eclectic brother really appreciated that his prescription, written out, would be as follows:

Sp. sticta	Gtt xv
Sp. ipecac	Gtt x
Sp. bryonia	Gtt x
Sp. macrotys	3i
Alcohol	5 per cent.
Bromoform	8 drops
Ipecac	1/2 gr.
Ammonium bromid	24 grs.
Benzoin	1 gr.
Alcohol	5 per cent.
Heroin hydrochlorid	8/24 gr.
Tinct. of euphorbia pilulifera.....	120 min.
Syrup of wild lettuce.....	120 min.
Tinct. of cocillana.....	40 min.
Fluidextract of squill.....	60 min.
Fluidextract of senega.....	60 min.
Antimony and potassium tartrate.....	1 gr.
Cascarin, P. D. & Co.....	8 grs.
Menthol	8/100 gr.

To use a slang expression, this is certainly going some!

Correspondence

Certified Butter in California

To the Editor:—Certification of butter in California was developed as an outgrowth of a series of experiments carried on in the laboratory of applied hygiene of the University of California by Mr. James M. Stephenson and myself. These experiments were undertaken to determine the need for municipal control of the butter supply of the city of Berkeley, and developed the presence of tuberculosis in much of the high-grade butter tested.

A review of the federal literature on the vitality of typhoid and tuberculosis bacilli in butter showed that previous experiments had been carried on with sweet cream butter. We therefore carefully followed the commercial process of souring and churning previously pasteurized cream. The cream samples were inoculated at the time of churning with pathogenic organisms, and the resulting butter was examined directly, plated and inoculated into guinea-pigs intraperitoneally.

Our results in brief were as follows:

Typhoid bacilli were recovered during the fourth week from endo-plates inoculated from broth subcultures of butter samples.

Diphtheria bacilli were recognized in smears made from blood-serum tubes inoculated with butter samples 26 days old, and guinea-pigs showed characteristic lesions at autopsy when inoculated from subcultures on blood-serum of butter 8 days old.

Generalized tuberculosis developed in guinea-pigs inoculated with butter 2 weeks old which had been contaminated at the time of churning by a small quantity of feces from a cow with tuberculosis.

In addition, generalized tuberculosis developed in guinea-pigs inoculated with three out of five high-grade butters obtained in open market. One of these had been intended as a control, as the butter was supposed to be made from pasteurized cream; but investigation revealed that not all of the cream coming to the butter factory was pasteurized.

Having been satisfied as to the need for pasteurized cream butter, the next step was the development of municipal butter control. For this purpose a score card for butter factories was devised on the basis of the federal score card for city milk plants, and a score card for butter which was in effect an extension of the present federal butter card. One of these cards gave due credit for pasteurization apparatus and its use, and the other gave ten points for a butter which would be Storch-test positive, showing that the cream had been heated to 80 C. It was also planned that butter factories where pasteurization was practiced might designate their product "inspected butter," under the supervision of the Berkeley Board of Health.

These points were incorporated in an ordinance governing the sale of milk products which was then submitted to the Board of Health, and by it recommended to the city council for passage.

A bill was also prepared and submitted to the California legislature, giving county medical milk commissions the authority to certify butter as free from pathogenic organisms, if the butter in question complied with regulations of the commission. The bill further penalized the use of the term "certified butter" without the authority of a medical milk commission. This bill has passed both houses of the present legislature, and the Milk Commission of the Alameda County Medical Association has agreed to adopt regulations for certified butter based on the pasteurization requirements as found in the milk-products ordinance of Berkeley.

The plan is not extreme, nor does it work a hardship on the producer. All butter in Denmark must be made from pasteurized cream, and it seems inconceivable that we have hitherto bent all our energies toward certified milk production and allowed this menace to our later years to persist without legislative correction.

JOHN NIVISON FORCE, M.D., M.S.,
Lecturer in Hygiene, Univ. of California, Berkeley, Cal.

The Philadelphia Idea as to Medical Teaching

To the Editor:—In THE JOURNAL, February 25, p. 608, under the above heading, there is the following extraordinary statement, by Prof. H. A. Hare, of Philadelphia: "As a matter of historical fact, Jefferson Medical College was the first medical institution in America to establish clinical teaching."

Now, "clinical teaching" is as old in this country as medical colleges; for, at the very beginning of the Philadelphia Medical College (University of Pennsylvania), we find that such instruction was given the students in the Pennsylvania Hospital. The first medical diploma, that of John Archer, of Maryland, (1768), is signed by "Thomas Bond, Collegii & Academ. Curator et Praelee. Clinicus" (clinical-lecturer), with the following endorsement: "Fidem facio Virum ornatum Joannem Archer Praelectionibus Clinici et Praxi in Nosocomio Philadelphienae interfuisse et Fructus Diligentiae suae uberime consecutum fuisse."

The younger Wiesenthal, of Baltimore, describes these clinics in letters to his father, while a medical student in Philadelphia, and the elder Wiesenthal (a most competent judge) speaks highly of Bond's qualifications for the task. The medical histories, as Mumford and Packard, show that these Philadelphia clinics were "rich and abundant."

Nor were the Boston, New York and Baltimore schools without their clinics. The New York Hospital was available from 1807 on, and the Massachusetts General Hospital was opened in 1821. In Baltimore, during the period from 1807 to 1823, clinical lectures were given by Davidge, Potter, William Gibson, Pattison, George Frick, the oculist (and author of the first American work on the eye) and others, at the Maryland Hospital, on Broadway, at the City Almshouse Hospital, on Harvard Street, and at Dr. Gibson's private hospital.

"As a matter of historical fact," however, the first medical school in the country to have its own hospital was the Department of Medicine of the University of Maryland. This was opened Sept. 20, 1823, in a building, especially erected for the purpose, just across the street from the medical college. It had at first four wards, one being for the eye.

Jefferson Medical College was founded in 1824, but the course of lectures did not begin until 1825. I have seen somewhere a statement by the late Prof. Samuel D. Gross, similar to that of Professor Hare, that Jefferson Medical College was the first in this country to establish a college hospital, which it did in 1825.

EUGENE F. CORDELL, M.D., Baltimore.

Professor of the History of Medicine, Univ. of Maryland.

Incomes of Physicians

To the Editor:—I enclose a newspaper article purporting to be an abstract of the address of Dr. H. W. Wiley of the Department of Agriculture. I have marked a paragraph in which he is quoted as saying: "There are 120,000 physicians in this country—120,000 men living on princely salaries because we ignore the possibility of our losing our health."

This article has been published broadcast and will give the public another wrong impression of our profession. People already think that physicians charge too much and this only adds to the false ideas as to the income of a medical man. Dr. Wiley knows that the average income of physicians in the United States is less than \$1,000 a year. A princely salary, indeed! The physicians of this country are having a hard enough time to get along without such statements being made—false statements at that. The American Medical Association should take some action to contradict such statements.

F. E. WALLACE, M.D., Pueblo, Colo.

[This letter was referred to Dr. Wiley, who replies as follows:]

To the Editor:—The remarks attributed to me in the address before the Republican Club were evidently made by one of the other speakers. I have forgotten which speaker it was who gave statistical data as to the number of sick people and the cost of their medical attendance, but it was not I. I said nothing at all about the matter. I did, however, say in an

address before Columbia University on the evening of the same day that young men might just as well give up the idea that there was any learned profession which gave promise of princely salaries and I stated that in my opinion the average salary of the physicians of the United States was less than \$1,000 a year, which is about the same as the estimate given by Dr. Wallace. I suppose that there are twenty-five or perhaps a hundred in this country who do earn "princely" salaries, but it never entered my mind that such earnings were common to the profession.

H. W. WILEY, Washington, D. C.

Plague in China

To the Editor:—I expected to take my furlough in the early spring . . . My plans have recently been changed owing to the arrival of the plague in this vicinity, making it necessary for me to remain at my post. . . .

I have been in the vicinity of plague before, but it was not like that which is surrounding us at the present time, viz., pneumonic and septicemic. The pneumonic is by far the most common. It seems to me to be reasonable to ascribe the presence of these two varieties to the intense cold and to the conditions under which the people live. The temperature is often 30 below zero and the Chinese huddle together on large brick beds, as they go up to Manchuria from the northern provinces of China to do coolie work. Under these conditions, if bubonic plague got under way it would not be strange if its virulence should increase and take on the more severe forms. The septicemic type seems to be less contagious, or the contagion does not emanate from the patient in a continuous stream as it does from the pneumonic variety. The matter vomited in the latter type contains the bacilli.

J. H. INGRAM, Tungchou, Peking, China.

[COMMENT:—The above is taken from a letter of a subscriber who is writing on other matters. What is said regarding the plague is incidental. This is an example of one man sticking to his post in time of danger.—EDITOR.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF THIOSINAMIN

To the Editor:—I would like information from the profession at large in regard to the effects of thiosinamin. In a case of polymyositis I have been giving hypodermic injections of this drug. The patient has been affected with this trouble for more than a year and the muscles are in a stage of fibrous degeneration. The drug has been administered with the view of obtaining its reputed effect of causing an absorption of cicatricial tissues.

The patient has received two injections weekly for the past seven weeks with but little beneficial effect. After the last five injections, however, there has been a uniform marked reaction, as follows: About two hours after the injection of 3 grains of the drug a severe chill occurs, followed by a rise of temperature to about 102 F. This temperature persists for from twenty-four to thirty-six hours. After the first two days it is accompanied by profuse perspiration and marked heart weakness. During the second day improvement begins. By the third day the patient is in her usual condition.

I would like to know if any other physician has ever used this drug with benefit, and if they have seen any such reaction.

I am unable to find any literature relating to this effect.

CHARLES F. CLOWE, M.D., Schenectady, N. Y.

ANSWER.—There are numerous reports in the literature in which beneficial results from the use of thiosinamin and the solution of thiosinamin and sodium salicylate are said to have been obtained. There is considerable doubt as to its permanent value in removing or softening scar tissue.

Thiosinamin poisoning has been reported in the last few years by a number of authors. Fever produced by this agent was noted by Hebra, who introduced the drug into medicine. His patient was tuberculous but free from fever. After the injections fever occurred, but it was uncertain whether it was due to the thiosinamin or to the tuberculosis.

Kunkel (Manual of Toxicology, 1901) reports headache, nausea, vomiting and lassitude after large doses (1 gm.) in man.

Brintzer observed repeatedly attacks of fever up to 39.8 C. (103.6 F.) in a patient whom he was treating for scleroderma.

P. Grosse (*München. med. Wchnschr.*, April 28, 1908, p. 910) reports a case in which slight symptoms appeared after the first five injections, but the sixth was followed by a rise of temperature to 39.1 C. (102.4 F.), with weak pulse, loss of appetite, etc. A striking feature repeated in other cases was a loss of memory of the period in which the symptoms appeared.

Baumstark observed similar symptoms in a patient whom he was treating for cholecystitis.

F. Hayn (*München. med. Wchnschr.*, Feb. 15, 1910) reports a case in which the ordinary dose, 0.2 gm. (3 grains), produced chills and fever, severe headache, thirst and marked weakness. Severe vomiting occurred with the first symptoms of poisoning. In this case the symptoms began with the fifth dose.

R. Neisse (*Therap. Monatsh.*, May, 1910) reports a case of fever occurring after injection of solution of thiosinamin sodium salicylate in a patient in whom there was suspicion of tuberculosis, and recommends that caution be used in treating tuberculous individuals with thiosinamin.

Kölliker reports (*München. med. Wchnschr.*, July 19, 1910, p. 1550) a case of thiosinamin poisoning in a young woman to whom it was being administered for the relief of keloid. The first symptoms appeared after the fifth injection and consisted of chilliness, sweating, general malaise and severe headache. These symptoms appeared after every injection but were variable in duration. The headache lasted for from two to eight days and was entirely independent of the interval between the two injections. After an interval of nineteen days the symptoms of poisoning appeared with the same intensity as after an interval of one day. The injections, however, were continued and the treatment was successful. No influence on menstruation was observed.

HEMOPHILIA

To the Editor:—Two children, aged respectively 6 and 8 years, have been under my care since birth. On their mother's side they belong to a family of bleeders. They have severe attacks of epistaxis and also have frequent attacks of acute articular rheumatism; both have valvular disease. I have given suprarenal preparations and also the elixir of chlorid of calcium; both seem to do good, but for a short time only. Can you recommend anything better?

N. C. MILLER, Stroudsburg, Pa.

ANSWER.—Good results have followed the use of normal blood-serum (rabbit, horse or man), locally, subcutaneously and intravenously. A serum injection of from 20 to 30 c.c., subcutaneously, usually suffices, although it may be necessary to repeat the injection daily or every two or three days if indicated. The ordinary antidiphtheritic serum has been used. It does not need to be fresh; Hare has used serum that had been kept for six months. It is possible that the attacks of "acute articular rheumatism" are in reality "bleeder joints," the pain being due to small hemorrhages into the joint and subsiding with absorption of the blood.

HICCUP NOT ATTRIBUTED TO BACILLI

To the Editor:—Please inform me if a bacillus causes hiccup (singultus). If so, has it been isolated, and by whom? I have a case of hiccup of three years' standing. Can you furnish any literature on the subject or inform me where I can obtain any data?

F. H. LONGLEY, M.D., North Platte, Neb.

ANSWER.—A bacillus of hiccup—singultus—has not been isolated and it is hardly expected that one will be found, since hiccup is merely a symptom. The condition is discussed in the various textbooks on medicine and therapeutics; there is practically no current literature in regard to it. We have reference to one article during the last five years:

Bassler, A.: Singultus Gastricus Nervosus, *New York Med. Jour.*, Aug. 13, 1910; abstr. in *THE JOURNAL A. M. A.*, Aug. 27, 1910, p. 800.

Complications of Typhus Fever.—E. Legrain and R. Treille review their experiences in northern Africa and assert that disinfection of the sick-room and sterilization of the mouths of patients with exanthematous typhus have always proved effectual in warding off complications in their experience. In epidemics in which these measures were neglected, complications were frequent and severe. In their communication on the subject in *Afrique Médicale*, 1910, xi, 377, they report some typical cases of severe complications, parotitis, joint affections and psoriasis in the course of convalescence. Other patients presented symptoms suggesting secondary pancreatitis, suppurative meningitis, or abscesses in the mouth and neck. They cite a description of typhus A. D. 1300, and others by Italian writers in the fifteenth and sixteenth centuries.

The Public Service

Medical Department, U. S. Army

Changes for the week ended March 11, 1911.

Stallman, George E., D.S., March 2, reported for temporary duty at Fort Clark, Texas.

Dougherty, James C., M.R.C., February 9, reports in field for duty along Mexican boundary.

Daywalt, George W., M.R.C., March 6, ordered to proceed to his home, and on arrival there will report to the adjutant general of the Army for further orders.

Allen, John H., major, March 8, left Fort Myer, Va., with 3d Field Artillery en route to San Antonio, Texas, for field duty.

Wickline, William A., captain; Schlanser, A. E., and Bastion, J. E., lieuts., March 9, left Walter Reed General Hospital, Takoma Park, D. C., with Co. C, Hospital Corps, en route to San Antonio, Texas, for field duty.

Bartlett, William K., captain, March 7, appointed member of commission to meet at Washington, D. C., relating to the establishment of maneuvering ground and camp of inspection, rifle and artillery ranges near Chickamauga Park, Ga.

Krebs, Lloyd Le R., captain, March 7, honorably discharged from the service of the U. S.

Birmingham, H. P., lieut.-col., March 7, assigned to duty as chief surgeon of division now being concentrated at San Antonio Park.

Persons, Elbert E., major, March 7, ordered to San Antonio, Texas, for duty in chief surgeon's office, division at that place.

Whitcomber, C. C., captain, March 7, ordered to San Antonio, Texas, for duty as medical supply officer.

Roberts, William M., major, March 7, relieved from temporary duty at Fort Oglethorpe, Ga., and ordered to proceed with the 11th Cavalry to Fort Sam Houston, Texas.

Straub, Paul F., major, March 7, ordered to proceed to San Antonio, Texas, for duty as sanitary inspector of division.

Truby, Willard F., major, March 7, ordered to proceed to San Diego, Cal., and report for duty as commanding officer of the field hospital at that place.

Dutcher, Basil H.; Gilchrist, Harry L.; Hartsock, F. M., and Patterson, Robert U., majors, March 7, ordered to San Antonio, Texas, to assume command of the four field hospitals to be assembled at that place.

Jones, Percy L., captain, March 7, ordered to San Antonio, Texas, for duty in command of Ambulance Co. No. 2 at that place.

Baker, David, major, and Darby, Taylor E., lieut., March 7, left Fort McPherson, Ga., en route to Fort Sam Houston, Texas.

O'Connor, R. P., major, March 8, left Fort Screven, Ga., with troops en route to Galveston, Texas.

Bartlett, William K., captain, March 8, left Fort Oglethorpe, Ga., en route to Fort Sam Houston, Texas.

Hill, Eben C., lieut., March 8, left Madison Barracks, N. Y., en route to Fort Monroe, Va., for temporary duty.

Ford, Joseph H., major, March 8, left Fort Wadsworth, N. Y., with troops for duty in Texas.

Persons, Elbert E., major, March 8, left Fort Jay, N. Y., en route to San Antonio, Texas.

Fauntleroy, P. C., major, March 8, left Fort Benjamin Harrison, Ind., with the 10th Infantry en route to Fort Sam Houston, Texas.

Halliday, Charles H., M.R.C., March 9, left Fort Fremont, S. C., en route to Jackson Barracks, La., for temporary duty.

Waterhouse, S. M., major, March 9, left Fort Washington, Md., with troops en route to Fort Monroe, Va., and for duty in Texas.

Long, Charles J., D.S., March 9, left Fort Andrews, Mass., en route to Fort Constitution, N. H., for temporary duty.

Medical Corps, U. S. Navy

Changes during the week ended Feb. 18, 1911.

Cecil, A. B., asst.-surgeon, detached from the *Nebraska* and ordered to the naval station, Guantanamo, Cuba.

Changes during the week ended March 11, 1911.

Olcott, F. W., P. A. surgeon, commissioned passed assistant surgeon from Feb. 13, 1911, and transferred to the retired list from that date.

Richardson, R. R., surgeon, detached from the navy yard, Portsmouth, N. H., and ordered to the *Prairie*.

Downey, J. O., P. A. surgeon, detached from the naval hospital, Philadelphia, and ordered to the *Prairie*.

Pugh, W. S., P. A. surgeon, detached from the naval hospital, New York, and ordered to the *Dirie*.

Elmore, B., A. A. surgeon, commissioned acting assistant surgeon from March 4, 1911.

Beyer, H. G., medical director, commissioned medical director from Feb. 27, 1911.

Mink, O. K., P. A. surgeon, detached from the naval medical school, Washington, D. C., and ordered to the *West Virginia*.

Miller, J. T., P. A. surgeon, detached from the Navy recruiting station, St. Louis, and ordered to the *Franklin*.

Abeken, F. G., P. A. surgeon, detached from the *West Virginia* and ordered to the Navy recruiting station, St. Louis.

Higgins, M. E., P. A. surgeon, ordered to the naval medical school, Washington, D. C.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended March 8, 1911.

Cofer, L. E., assistant surgeon-general, granted ten days' leave of absence from March 6, 1911.

Pettyjohn, J., P. A. surgeon, granted one month's leave of absence from Feb. 23, 1911, on account of sickness.

Hamilton, H. J., A. A. surgeon, granted seven days' leave of absence from March 6, 1911.

Schug, F. J., A. A. surgeon, leave of absence for thirty days from Feb. 18, 1911, revoked.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

STATE LEGISLATION ON PUBLIC HEALTH

The progress of legislation and the new bills introduced regarding which THE JOURNAL has been informed, are reported below by states.

ALABAMA

A bill is introduced by Senator Justice to amend the existing medical practice act by giving the State Board of Medical Examiners power to revoke a physician's certificate for use of liquor or narcotic drugs to such an extent as to render him unsafe or unreliable as a practitioner; being so infirm mentally as to render him unsafe and unreliable; being guilty of gross immorality and unprofessional conduct likely to deceive, defraud or injure the public; advertising himself or his practice; inducing or aiding in inducing a criminal abortion; performing an operation of major surgery when his certificate does not entitle him to do so or being convicted of any offense involving moral turpitude. The bill also provides the manner of bringing charges and of procedure on the part of the board. This bill has passed the senate. An optometry bill has also been introduced.

CALIFORNIA

The senate has passed a bill making it a felony to trade in medical certificates or diplomas from medical colleges or to use the title of "doctor" or any other title having a similar meaning for fraudulent purposes. A bill has also passed the senate providing that an applicant for a license to practice medicine or other form of healing who passes the examination in seven of the ten required subjects shall be allowed a reexamination in the remaining three. A bill to repeal the compulsory vaccination law has passed the lower house. A bill to amend the present medical practice act has been defeated in the senate.

COLORADO

The following bills have been introduced: to regulate slaughter houses; a meat inspection bill; to create local boards of health; to provide for the medical inspection of school teachers and children for contagious diseases; to regulate the use of the common drinking cup; to prohibit the sale of undrawn cold storage poultry, fish or game; to amend the vital statistics law; to provide for the sanitary keeping, storing and transportation of foodstuffs; to repeal the compulsory vaccination law; to provide for the sanitation of bakeries, canneries, packing houses and all places where food is prepared, manufactured, packed, stored, sold or distributed; to provide for dental examination of children; to regulate the location of sanitariums for tuberculosis; to regulate the sale of habit-forming drugs; to provide for the supervision of lying-in hospitals and maternity homes; to regulate embalming; to establish a chiropractic board of examiners; to establish an optometry board of examiners and to amend the pure food law.

CONNECTICUT

An optometry bill has been introduced, also a bill to repeal the compulsory vaccination law. Several bills to amend the act of 1909 establishing country homes for the care of tuberculosis, have been introduced. One of the most unusual of state enactments is a bill passed by the Connecticut legislature giving Stephen Benoni Sweet, son of Dr. J. Byron Sweet, a member of the lower house of the legislature, the right to practice bone-setting and to call himself "doctor." According to newspaper reports, this act is due to the "wonderful gift that has been in the Sweet family since 1630." No statement appears in the press reports as to why this "wonderful gift" was not supplemented by a course of medical instruction.

ILLINOIS

The following bills have been introduced in the Illinois legislature: H. B. 29, to amend the employer's liability law; H. B. 94, to enable boards of education in cities to establish classes and schools for deaf, dumb, crippled children, blind, truant, subnormal, convalescent and incipient invalid children; H. B. 140, to establish a surgical institute for children; H. B. 146, to provide a pension fund for municipal employees; H. B. 152, to prevent fraud in the sale of dairy products, etc.; H. B. 153, to regulate the sale of concentrated food stuffs; H. B. 154,

to regulate the manufacture, packing, storing and sale of food articles; H. B. 169, to make appropriations for the maintenance of the College of Medicine of the University of Illinois; H. B. 193, to regulate hotels, inns and lodging houses; H. B. 201, to regulate the practice of chiropody; H. B. 213, to authorize the improvement of streams; H. B. 214, to create a state board of forestry; H. B. 215, to create a state board of education; H. B. 241, to revise the divorce law by making the habitual use of morphin for two years grounds for divorce; H. B. 260, to protect employees of the state from the dangers of occupational diseases; H. B. 260, to regulate the work of children under 16 years of age; H. B. 380, to amend the medical practice act; S. B. 246, to amend the coroners' law; S. B. 249, to revise the law regarding the commitment and detention of lunatics; S. B. 260, to provide for the inspection, license and regulation of cold storage houses; S. B. 264, to amend the factory inspection law, and S. B. 459, to establish a state colony for epileptics.

INDIANA

The school medical inspection bill, drafted by the State Board of Education, to authorize school authorities to institute medical inspection of school children and to make such inspection compulsory after 1915, passed the senate. It further authorizes the State Board of Health and the State Board of Education to prepare leaflets on the prevention of disease and the conservation of health and to teach these subjects in all public schools. It also provides for sanitary sites and buildings for public schools and for proper heating, lighting and ventilation. A bill has been introduced to provide for the reporting of all defective children to the State Board of Health; also a weights and measure bill, to establish standards and to authorize the State Board of Health, through its food and drug inspectors, to enforce these standards. A bill to appropriate funds for a state hospital for tuberculosis and for the collection of vital statistics has been introduced. A bill has passed the house to require medical examination and certification of freedom from venereal diseases on the part of male applicants for marriage licenses. A bill to require a license fee of \$10 a month for itinerant vendors has been introduced in the house; a child labor bill, a bill to prevent spitting in stores, public buildings and public places, and a bill to regulate the storing of food products in cold storage warehouses, have also been introduced. Governor Marshall has signed the cold storage label bill, the medical inspection bill and the ophthalmia neonatorum bill. A bill introduced by Senator Stotsenburg would provide for the issuance of medical licenses without examination until July 1, 1911. It is alleged that this bill was introduced for personal reasons, in order to obtain a license for a woman who has failed to pass the state board examination. The bill is opposed by the state board of medical examiners and the state society. Dr. W. T. Gott, secretary of the state board, states that there are about 600 persons in Indiana who have failed to pass the state board examination who would take advantage of this opportunity to register, as well as many others from the surrounding states who would flock in at once. Probably the bitterest fight in the legislature has been over the Gers bill, which was intended to deprive the secretary of the State Board of Health of most of his power. The bill was voted down by the senate, 41 to 7.

IOWA

A bill to change the composition of the State Board of Medical Examiners has passed the house. This bill provides that in addition to the superintendent of public instruction, the state board shall consist of one county superintendent, one member of the school board, one superintendent of city schools, one primary teacher and one teacher of a rural school. A bill to abolish the state board of veterinary examiners has been introduced. A bill to provide for the sterilization of criminals, idiots, feeble-minded and epileptics, modeled after the Indiana law, has been introduced.

KANSAS

A bill to appropriate \$100,000 to build a clinical hospital in Kansas City, Kan., in connection with the Kansas University Medical School, has been introduced; also a bill to provide for the registration of births and deaths, drafted on the lines of the model bill of the American Medical Association. This bill has been favorably reported on by the house committee.

MAINE

The osteopathic bill has been defeated in the senate by a vote of 15 to 14 and in the house by a vote of 91 to 36. A bill to prohibit the issuance of insurance policies protecting

physicians and surgeons against malpractice damages has also been defeated. A bill to amend the medical practice act has been introduced.

MASSACHUSETTS

A large number of bills of interest to the medical profession have been introduced, among them bills to prohibit the sale of intoxicating liquor and narcotic drugs to hospital patients; to regulate the cold storage of food products; to regulate the lighting of factories and work shops; to regulate meat inspection; to regulate the sale of cocaine; to regulate the practice of healing by unregistered physicians; for the prevention of cruelty to animals; to regulate the distribution of milk; to prohibit spitting in public places; to require practitioners of Eddyism and hypnotism to register with the State Board of Health; to prohibit the use of suction shuttles in factories; to regulate the sanitary arrangements of factories, work shops, etc.; to regulate the sale of opium; to provide for the disinfection of public telephone stations; to regulate the cutting of ice, and to establish a board in optometry.

MICHIGAN

A "chiropractic" bill has been introduced.

MINNESOTA

A bill has passed the senate to create a state tuberculosis commission and to authorize the establishing of public tuberculosis sanatoriums in each congressional district. This bill has been prepared by the legislative committee of the Minnesota Association for the Prevention and Relief of Tuberculosis. An itinerant vendors' bill has been introduced and a bill to authorize the appointment of sixty-three state medical inspectors and sanitary inspectors.

MISSOURI

A bill to establish a board of examiners in optometry has been defeated in the senate. A bill to require all who profess to cure physical and mental ills to have diplomas from medical colleges has been introduced.

MONTANA

The Montana legislature has adjourned. The following bills have become laws: S. B. 134, providing that sewage systems must be approved by the State Board of Health and relating to the pollution of water supply; H. B. 27, regulating the sale of habit-forming drugs; H. B. 115, providing for the payment of physicians in insanity examinations; H. B. 290, prohibiting the possession or sale of toy pistols, blank cartridges and explosive caps; H. B. 34, the pure food law; H. B. 121, the dairy law, and H. B. 139, providing for state veterinary surgeons passed both houses and are now in the governor's hands; H. B. 364, to regulate the lighting, heating and ventilating of public buildings was not passed. The bill providing for a tuberculosis sanitarium passed both houses and has been signed by the governor; also a bill appropriating \$5,000 for 1911 and an equal sum for 1912, to continue the investigation of spotted fever.

NEVADA

An osteopathic bill passed the house but failed to pass the senate. Bills to amend the medical practice act to create a state board of health have been introduced.

NEW HAMPSHIRE

Bills have been introduced to amend the medical practice act, to prevent the pollution of the Winnepesaukee River, to regulate weights and measures and to provide for the medical inspection of schools.

NEW JERSEY

An osteopathic bill, a bill to regulate cold storage and a bill to raise the standard of medical practice in the state have been introduced.

NORTH DAKOTA

A bill to regulate the management of hospitals has been introduced, containing a section providing that no major operation shall be performed on any patient in any licensed hospital, except in an emergency, until the attending surgeon has filed with the superintendent of the hospital a statement giving the reasons for the operation and the pathologic conditions which render it necessary. This statement must be approved and signed by an independent physician not in any way a financial beneficiary from the operation. An additional section provides that all diseased organs or tissues removed

in the course of an operation must be sent to the state public health laboratory for examination.

OHIO

An optometry bill, similar to the one which Governor Harmon vetoed last year, has been introduced; also a bill for instruction of persons suffering from tuberculosis; a bill for the sterilization of criminals, imbeciles, epileptics and others; a bill to regulate the medical inspection of public school children; a bill to regulate the sale of articles of food held in cold storage; a bill to authorize boards of health to establish dispensaries; a bill to regulate the requirements for admission to any college of law, medicine, dentistry or pharmacy; a bill to provide for the proper certification of deaths in municipal hospitals; a bill to make vaccination optional and a bill separating inmates of the penitentiary and reformatory suffering from tuberculosis. A housing bill, endorsed by the associated charities of the state, as well as a sanitary bill, placing all members of the sanitary police force under civil service, and a bill to place infantile paralysis and ophthalmia neonatorum on the list of communicable diseases, have also been introduced.

OREGON

A bill has been introduced to recognize "Naturopathy."

PENNSYLVANIA

An optometry bill has been introduced, also a number of bills to regulate the practice of medicine. A bill to authorize the sterilization of idiots, feeble-minded and insane persons has been introduced; also a bill to regulate the sale of cocaine; a bill to appropriate \$425,000 for Jefferson Medical College and a bill to prevent the issuance of marriage licenses to imbeciles, epileptics or persons afflicted with a transmissible disease or under the influence of intoxicating liquors or narcotic drugs, have also been introduced.

RHODE ISLAND

The usual osteopathic bill has been introduced.

TENNESSEE

A vital statistics bill has been introduced; also a bill to create county boards of health; a bill to amend the pure food law and a bill to provide for medical inspection of schools.

TEXAS

An optometry bill has been introduced; also a bill to appropriate \$150,000 for a tuberculosis sanitarium and a bill to incorporate the sanitary code of the health department as a law and to reenact the law creating the State Board of Health; a bill to exempt graduates of the Medical Department of the State University from examination by the state board has been reported on adversely by the house committee.

UTAH

A bill to empower the State Board of Health to revoke the licenses of physicians who fail to report contagious diseases and deaths; also a bill to regulate the sale of narcotic drugs, and a bill to provide for the examination of school children have been introduced.

WASHINGTON

A bill to provide for the appointment of a tuberculosis commission has been introduced; also a bill to amend the medical practice act. The State Board of Health is supporting a bill for the supervision and preservation of the water supplies for cities; also a bill to remove the health officers of the state from politics and to place them under the control of the State Board of Health.

WEST VIRGINIA

Governor Glasecock has signed a bill to establish a state tuberculosis sanitarium, and a bill to regulate the sale of habit-forming drugs; a bill to establish medical inspection in public schools has become a law; a bill to amend the child labor law has passed the house; two bills to amend the medical practice act in an undesirable manner have died in the committee.

WISCONSIN

The following bills have been introduced: for the prevention and suppression of contagious diseases among live stock; to abolish the use of the common drinking cup on railway trains; for the prevention and control of dangerous communicable diseases; to regulate the hours of labor for women in manufacturing establishments; to provide for the registration of

nurses; one relating to the organization of local boards of health; to regulate the pollution of streams and public waters; to regulate the sale of undressed poultry; to provide for the medical inspection of public school children; to forbid expectoration in public places; to make provision for the care of indigent, crippled and deformed children; to provide for the incorporation of medical milk commissions and the certification of milk.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR

BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

- Eighth Month—Third Weekly Meeting
- DISEASES OF THE OVARIES
- OOPHORITIC CYSTS: Glandular and dermoid; pathology and description of each.
- PAROOPHORITIC CYSTS: Pathology, description.
- COMPLICATIONS OF OVARIAN CYSTS: Inflammation, hemorrhage, twisting of pedicle, rupture and adhesions; symptoms and diagnosis of each.
- DIAGNOSIS OF OVARIAN CYSTS: Pelvic stage: Position, mobility, relations, shape and consistency of tumor. Abdominal stage: Physical signs on inspection, palpation, percussion, mensuration, auscultation. Exploratory incision.
- DIFFERENTIAL DIAGNOSIS: Differentiate from pregnancy, phantom tumor, encysted ascites, fibrocyst of uterus, cystic tumor of kidney.
- PAROVARIAN CYSTS: Pathology: Size, characteristics, cyst wall, contents. Symptoms: Pressure symptoms, menstrual disorders, sterility.

Medical Education and State Boards of Registration

- COMING EXAMINATIONS
- ARIZONA: Phoenix, April 3-4. Sec., Dr. Anell Martin.
- CALIFORNIA: San Francisco, April 4. Sec., Dr. Charles L. Tisdale, 929 Butler Bldg.
- COLORADO: Denver, April 4. Sec., Dr. S. D. Van Meter, 1723 Tremont Place.
- DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. George C. Ober, 125 B St., S.E.
- GEORGIA ECLECTIC: State Capitol, Atlanta, about April 20. Sec., Dr. C. W. Miller, 192 W. North Ave.
- IDAHO: Boise, April 4-5. Sec., Dr. O. J. Allen, Bellevue.
- MINNESOTA: State University, Minneapolis, April 4. Sec., Dr. W. S. Fullerton, 215 American National Bank Bldg., St. Paul.
- MONTANA: The Capitol, Helena, April 4. Sec., Dr. William C. Riddell.
- OKLAHOMA: Oklahoma City, April 11. Sec., Dr. Frank P. Davis, Enid.
- RHODE ISLAND: State House, Providence, April 6-7. Sec., Dr. Gardner T. Swarts, State House.
- UTAH: Salt Lake City, April 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
- WEST VIRGINIA: Huntington, April 10-12. Sec., Dr. H. A. Barbee, Point Pleasant.

A Diploma Factory

In September, 1910, there came to this office several copies of a circular advertising the Gate City Medical College of Dallas, Tex. (formerly of Texarkana, Tex.). This circular was widely distributed through the southern states. It gave no street address for the college but contained the following specific directions as to how an applicant might reach the right parties:

When you arrive in Dallas go to some hotel or business house and call us over the telephone. Our number is Main 3941 and Main 6631, or take the Hickory Street car and come to the Hickory Street drug store, corner Hickory and Nettie Streets, where you can get all desired information. Hickory cars pass in front of the postoffice, making it easy to find.

The suggestion was made to a Mississippi physician, who had sent us one of the circulars, that he endeavor to learn on what terms a diploma might be obtained, whereon he sent the following letter:

_____, Miss., Oct. 8, 1910.

Dr. J. W. Decker, Dean,

Dallas, Texas:

Dear Sir.—I am convinced of the great need of a Diploma for a practitioner. I wish I could attend the Gate City Medical College but I have a very large practice. No Doctor in 15 miles and sickness in my family. It is impossible for me to come. I would not mind the expense. Is it possible for me to pay like I was there and you give me the Diploma without Coming. I am a licensed Doctor and can give best references.

Your friend, . . .

And here is the reply:

Gate City Medical College

J. W. Decker, M.D., Dean.

Dallas, Texas, _____190

Dear Doctor _____,

In reply to yours of some days ago I will say that I can arrange to give you some home reading and give you a diploma same as if you were here. It will be genuine and will be entered upon the records same as if you were here, and you can refer to us as a graduate of the school at any future time should you wish to do so as many have done.

Very truly yours,

J. W. Decker, M. D., Dean.

P. S. The whole fees will be only \$50 professors fee. No extra charges for anything else and I will guarantee you to get your diploma.

If satisfactory send fee at once and I will send you some work to be looking over and enter your name for a diploma. Give me your full name.

In the meantime one of the circulars and copies of the above correspondence were sent to the former secretary of the Texas State Board of Medical Examiners, who referred the matter to the board's attorney, Mr. J. N. Wilkerson. The attorney reported that he personally called at Dr. Decker's office and that he succeeded, in about half an hour, in purchasing outright two diplomas for the stipulated sum of \$50, without having ever taken any medical work and without having passed an examination. The so-called regular diploma, he said, was printed in Latin, since avowedly that "would fool 'em," and the other was a special certificate for a special course on the diseases of women and children. It is stated that these diplomas were dated two years back to "show additional experience." The attorney further states that the federal court found a bill of indictment against Decker for using the United States mails to promote a fraudulent scheme.

Virginia December Report

Dr. R. S. Martin, secretary of the Virginia State Medical Examining Board, reports the written and oral examination held at Lynchburg, Dec. 20-23, 1910. The number of subjects examined in was 9; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 35, of whom 28 passed and 7 failed, including 1 osteopath. Eight reciprocal licenses were granted. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University.....	(1909)		75
Howard University, Washington, D. C.....	(1904)*		
College of Physicians and Surgeons, Chicago.....	(1908)*		
University of Louisville.....	(1910)	78,	85
University of Maryland.....	(1910)	80,	81
Baltimore Medical College.....	(1909)		77
College of Phys. and Surg., Baltimore....	(1904)* (1910)		82
Maryland Medical College.....	(1909)*		
Johns Hopkins University.....	(1910)		83
University of Buffalo.....	(1895)*		
Leonard School of Medicine, (1907) 76; (1909) 78;	(1910)	75, 80,	
Hahnemann Medical Coll. and Hosp., Philadelphia. (1894)*			
University of Pennsylvania.....	(1897)* (1906)*		
University of the South.....	(1904)*		
Vanderbilt University.....	(1901)*		
Medical College of the State of South Carolina...	(1910)		79
University College of Medicine, Richmond.....	(1910)		76
University of Virginia.....	(1910) 77; (1911)†		84
Medical College of Virginia.....	(1900)* (1910)		88

FAILED		
Maryland Medical College.....	(1909)	61
College of Physicians and Surgeons, Boston.....	(1907)	73
Leonard School of Medicine.....	(1908) 73; (1910)	71
Hahnemann Medical Coll. and Hosp., Philadelphia.....	(1896)*	
University of the South.....	(1908)	68

LICENSED THROUGH RECIPROCITY		
College	Year Grad.	Reciprocity with
Georgetown University	(1900)	Dist. Colum.
Howard University, Washington, D. C.....	(1890)	Kentucky
Tulane University of Louisiana.....	(1903)	Louisiana
Maryland Medical College.....	(1901)	N. Carolina
University of Maryland.....	(1909)	W. Virginia
Hahnemann Med. Coll. and Hosp., Philadelphia.....	(1907)	Dist. Colum.
Tennessee Medical College.....	(1904)	Tennessee
University College of Medicine, Richmond.....	(1909)	N. Carolina

* Took oral examination.

† Certificate will not be granted until applicant gets diploma in June, 1911. Full course completed, but will not receive diploma until above date.

Vermont January Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Montpelier, Jan. 10-12, 1911. The number of subjects examined in was 13; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 11, of whom 10 passed and 1 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore....	(1909)	84.3
Harvard University Medical School.....	(1908)	82.8
University of Vermont, (1910) 76.1, 79.2, 80.4, 81.1, 82.7,		83.5.
84.3, 86.5.		

FAILED		
College of Physicians and Surgeons, Boston.....	(1909)	73.8

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Hahnemann Medical Coll. and Hosp., Chicago..	(1908)	Illinois
Maryland Medical College.....	(1910)	Maine
Boston University	(1896)	New Hamp.
Hahnemann Med. Coll. and Hosp., Philadelphia.....	(1906)	New Jersey
Laval University, Quebec.....	(1907)	Maine

Book Notices

INDUCED CELL-REPRODUCTION AND CANCER. The Isolation of the Chemical Causes of Normal and of Augmented, Asymmetrical Human Cell Division. By Hugh Campbell Ross, M.B.C.S. (Eng.), Surgeon, Royal Navy (Emergency List). Being the Results of Researches Carried Out by the Author with the Assistance of John Westray Croper, M.B., Assistant to the Research Department of the Royal Southern Hospital, Liverpool. Cloth. Price, \$4.50 net. Pp. 423, with 129 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

The object of this ambitious book is to present the details obtained by the study of living human cells under the microscope and the bearing of the results especially on the causation of cancer. The living cells, principally blood-cells, "are examined by placing them, under a cover-glass, on the surface of a film of jelly, which may contain dissolved in it any substance we may wish to experiment with, and which has, while in a molten condition, been poured on the microscopic slide and allowed to set there." The substance used in making the jelly is agar. It proving impossible to prepare permanent specimens by fixation of the jelly films, a rapid and ingenious method of photomicrography was worked out so that the appearances presented by the cells under observation could be reproduced accurately at any moment. The illustrations in the book have been made from photographs thus obtained.

Ross has found that by means of certain diffusible substances mixed with the jelly, leukocytes and other cells placed on the jelly may be caused to divide (once only) under the eye of the observer. This is the "induced cell reproduction." Such substances are called "auxetics," from the Greek meaning "exciters of reproduction." Among these substances are besides atropin and other alkaloids, xanthin, creatin, globin; now because these last and similar bodies occur in dead and disintegrating tissue, the cell proliferations of simple healing of wounds and of tumors are traced to the "auxetic" action of the bodies just mentioned—"the remains of dead tissue."

On the basis of this notion chronic ulcers have been treated with applications of globin; the authors remark, "We think we can say safely that it causes more rapid healing of them than if they were treated in the usual way." The view that carcinoma is the result of "auxetics" the action of which is augmented by cholin, cadaverin and other putrefactive alkaloids and "the crucial experiment" are discussed in the last two chapters. It was found that normal serum has the power to restrain the "natural" auxetics from inducing cell-division and it was resolved to try to increase in the cancer patient the amount of this restraining body by injecting 6 ounces of defibrinated sheep's blood per rectum every morning. "The serum contains the restraining body, and it was argued that the red cells would be destroyed in the rectum, the hemoglobin decomposed, and in time the globin would become augmented by the action of the bacteria present. It was presumed that the restraining body of the serum, the auxetic in the globin and in the remains of the white cells, and lastly, the products of the decomposition would be gradually absorbed, and that they might raise the content of restraining body in the patients; in other words, they might act as a sort of vaccine." In the two principal cases in which this treatment was employed it is not known whether the patients had carcinoma or not; in both there seemed to be some temporary improvement. But the real "crucial test" was made on a patient with an ulcerating inoperable carcinoma of the breast; a part of the ulcer was treated with globin until the glistening malignant surface gave place to normal granulation tissue as shown by microscopic examination; a mixture of five parts of globin and one part of cholin was evaporated to dryness and small pieces applied to a minute area of the edge of the treated part of the ulcer. "In forty-eight hours a conical excrescence appeared at the seat of application" with "apparently new malignant cells." Ross freely admits that "this test is by no means conclusive." Ross' studies of the behavior of living cells outside the body are of interest. That his "induced cell reproduction," which is the corner-stone of the whole work, is a real cell division of the same nature and significance as that which takes place in the body, is unproved. Successive generations of living cells must be produced *in vitro* before his claims on this point will stand.

So far as the applications of the observations to cancer are concerned, the credulousness of the author and the impudence of the publishers' circular in speaking of the methods used as indicating "that the cause of cancer has been discovered and a way opened for successful treatment" cannot but cause amazement.

A SYSTEM OF SYPHILIS. In Six Volumes. Edited by D'Arcy Power, F. R. C. S., and J. Keogh Murphy, F.R.C.S. With Introduction by Sir Jonathan Hutchinson, F.R.S. By Various Authors. Cloth. Price, \$13.50. Vol. V, pp. 356, with illustrations. Vol. VI, pp. 514, with illustrations. New York: Oxford University Press, 1910.

These two volumes, closing the "System," contain a group of articles which consider various special topics belonging to a complete exposition of syphilis. Being exhaustive articles on special subjects in syphilis, written by men of authority in the various fields, the contributions are all of them interesting and useful and some of them are notable.

Volume V contains "Affections of the Skin in Syphilis," by Phineas S. Abraham and Haldin D. Davis; "Ocular Syphilis," by C. Devereux Marshall; "Aural Syphilis," by C. Ernest West, and "Syphilis in the Upper Air Passages," by St. Clair Thomson. All of these authors are well known and their contributions are of the high character that would be expected of them. Each of the articles is very full; one may consult any of them for almost any fact in its scope, and they are thus exceedingly useful possessions for any medical library. They are all copiously illustrated, with colored illustrations for the most part. These illustrations, as those in the other volumes, constitute a valuable feature of the work. The English color prints of pathologic objects have not reached the remarkable excellence that we have become used to in recent German publications, but these are good and they serve their purpose of depicting for the reader the conditions which they are intended to portray.

Volume VI is unique, in that it brings together in one book a complete consideration of syphilis in the public services

especially the army and navy. It is a very proper conclusion to such a system, and is an eminently valuable work.

Its scope is shown by the titles and authors of the various papers: "Introduction," by Sir Alfred Keogh, late Director-General of the Army Medical Service; "The History and Epidemiology of Syphilis in the More Important Armies," by Lieut. Colonel Charles H. Melville of the Royal Army Medical College; "Pathology and Microbiology of Syphilis as Applied to the Public Services," by Captain L. W. Harrison; "Clinical Course and Treatment of Syphilis in the Army," by Major C. E. Pollock; "Syphilis in the U. S. Navy," by Surgeon Charles N. Fiske; "The Epidemiology of Syphilis in the Royal Navy," by Fleet Surgeon E. P. Mourilyan; "The Practical Treatment Afloat of Syphilis in the Royal Navy," by Surgeon Charles K. Bushe.

It is evident from this enumeration that there must be considerable repetition in some of these contributions of matter discussed elsewhere in the "System," but this is a small objection in comparison with the very valuable lights thrown on the sociologic aspects of syphilis by a consideration of it from the standpoint taken in this work. Since syphilis first spread over Europe with the mercenaries of the army of Charles VIII of France, armies and navies have always been fruitful fields for syphilis, and this volume is a veritable thesaurus of knowledge in this field. We know of no single place where such a collection of knowledge of this sort is available.

In conclusion, a word of strong commendation should be said for the "System" as a whole. We believe that the time spent in reading its six volumes will be found very profitable in additions to the knowledge of even the well-informed reader, while many of the topics considered have been treated with so broad a view and contained so much of unusual information that their reading will afford the pleasure that comes from stimulated interest. The "System" constitutes a notable contribution to the permanent literature of syphilis and is an honor to British medicine. But it is more than that; such a monumental work can hardly hope for adequate monetary returns from its sales, so that its publication is a credit to the spirit which insured its issue and to the fine zeal for the advancement of knowledge of its editors and contributors. It is a work which highly deserves to be in every scholarly physician's library.

THREE CONTRIBUTIONS TO THE SEXUAL THEORY. By Prof. Sigmund Freud, LL.D., Vienna. Authorized Translation by A. A. Brill, M.D., Clinical Assistant, Department of Psychiatry and Neurology, Columbia University. With Introduction by James J. Putnam, M.D. Paper. Price, \$2. Pp. 91. New York: The Journal of Nervous and Mental Disease Publishing Co., 1910.

No man in modern neurology can boast of more ardent adherents and more violent enemies than Sigmund Freud, of Vienna. Not even his critics, however, can deny that he is a pioneer in a field hitherto but little cultivated. But while neurologists are discussing the merits and demerits of Freud's theories of the neuroses, the members of the medical profession as a whole know little of the points at issue. Unfortunately for the English reader, the German text of Freud's scattered articles is rather involved and abounds with a newly created, and therefore unknown, terminology. Hence the many misunderstandings. It is therefore well that the translation of the "Selected Papers on Hysteria and Other Psychoneuroses" has been followed by a translation of the "Three Contributions to the Sexual Theory." Whatever views one may hold concerning Freud's theories, it is essential that they be based on a first-hand acquaintance with the author's writings, not the least important of which is the present volume. As Putnam has already stated, no one can understand Freud's views until he has carefully read the several fundamental articles on which these are based. Brill's attractive translation of the present volume is the more welcome as it will have a tendency to moderate the tone of those of Freud's critics who only half-understood the author's meaning in the original German text. Careful reading of this interesting monograph carries the conviction that regardless of the question whether or not his psycho-analysis and mental catharsis will ever become popular, Freud has probed the innermost recesses of the normal and abnormal human mind.

The contributions deal with (1) the sexual aberrations, (2) the infantile sexuality, and (3) the transformation of puberty. Psychologist, educator, jurist and physician will therein discover viewpoints on the sex-question which must stimulate further research in this hitherto neglected field.

SYPHILIS: ITS DIAGNOSIS, PROGNOSIS, PREVENTION AND TREATMENT. By Thomas P. Beddoes, F.R.C.S., Surgeon to the London Hospital for Diseases of the Skin. Cloth. Price, \$2 net. Pp. 224. New York: Paul B. Hoeber, 1910.

In this work the author gives most of his attention to the cutaneous manifestations of syphilis. In addition, the clinical course, including the symptoms of the disease as a general infection, is given, but syphilis of the various structures besides the skin is given such brief consideration that the work can hardly be regarded as covering the subject of syphilis. For example, syphilis of the vascular system is given six small pages, about 1,500 words; syphilis of the bones, six pages; and that of the nervous system, including parasyphilitic diseases, five pages.

The author evidently has first-hand knowledge of syphilis, but, like so many of our English colleagues, is extremely careless in his manner of imparting it to others. Every cutaneous lesion, from roseola to ulcerating gummata, is a "rash." "The macule . . . is the first rash to appear." Of course a macule is an individual lesion and not a "rash." Such examples could be multiplied at length. The work cannot be said to be up to date. There is no distinct consideration of the serum-complement reaction in the diagnosis of syphilis; no reference to it in the index; and a rather careful reading of the work does not leave in our mind any memory of a single reference to it. Under prophylaxis no reference is made to Metchnikoff's important contribution to the subject—the most important contribution of recent years. Of course a work which leaves out such important additions does not satisfactorily represent the subject. Perhaps the explanation of the lack of consideration of these comparatively recent additions to syphilology lies in the fact that the work is older than it seems; an explanation that is supported by the observation that, while the publisher's imprint bears the date 1910, the author's preface is dated 1908—and these days knowledge is moving fast in syphilis.

THE MENTAL SYMPTOMS OF BRAIN DISEASE. An Aid to the Surgical Treatment of Insanity, Due to Injury, Hemorrhage, Tumors and Other Circumscribed Lesions of the Brain. By Bernard Hollander, M.D. With Preface by Dr. J. Morel, Late Belgian State Commissioner in Lunacy. Cloth. Price, \$2. Pp. 237. New York: Rebman Co., 1910.

In this work, the author deals with insanity based on focal lesions in the brain. Through the study and proper interpretation of symptoms, their mode of onset and associated conditions, he emphasizes the possibility of making a true pathologic diagnosis. Hollander cites many case records collected from various sources, including many of his personal observations, which demonstrate this possibility of localizing mental diseases. His study of these cases has enabled him to attach certain symptoms to lesions in the frontal lobes where the centers of perception and of special memories are located. He discusses lesions in the parietal, temporal and occipital lobes in a similar manner. The study of such mental diseases demands that one should be a close student of psychology. Dr. Hollander does not state that surgery should be employed in the majority of cases of insanity, but believes that a certain per cent. of these cases if studied early in their course may be greatly benefited by surgery.

MANUAL OF SURGERY. By Alexis Thomson, F.R.C.S., Professor of Surgery, University of Edinburgh, and Alexander Miles, F.R.C.S., Surgeon, Edinburgh Royal Infirmary. Vol. I, General Surgery. Pp. 886, with 339 illustrations. Vol. II, Regional Surgery. Pp. 861, with 227 illustrations. Third edition. Cloth. Price, \$7. Pp. 861, with 227 illustrations. New York: Oxford University Press, 1909.

This is a comprehensive and systematic review of modern surgery, sufficiently detailed for the practitioner and not beyond the scope of the manual for students. It incorporates the important advances of the past two years, since the second edition, such as the Biér treatment, vaccine therapy, and the newer surgery of the peripheral nerves as worked out by Head and Sherren. Less attention is paid to description of operations than to careful description of symptoms, pathology and indications including principles of operating

The book is quite up to date in matter likely to be considered catch questions by examination boards, such as "snapping hip," "Madelung's deformity," and other rare conditions. The work is a standard compact summary of the best method of the Edinburgh school and should prove useful to medical students and practitioners everywhere. The illustrations consist of photographs and wood-cuts. The volumes are small and compact.

A HANDBOOK OF THE SURGERY OF CHILDREN. By E. Kirrison, Professor of the University of Paris. Translated by J. Keogh Murphy, F.R.C.S., Surgeon, Miller General Hospital for South East London. Cloth. Price, \$7. New York: Oxford University Press, 1910.

This book may be considered as a compilation of surgical monographs, rather than as a treatise covering the subject. It presents, in a very attractive manner, a discussion of some of the more common surgical disorders of childhood which the general practitioner may be called on to treat. In the first part are considered congenital defects and malformations. This is a masterly presentation of the subject. In the chapters on fractures, however, while those of the upper extremities are discussed very thoroughly, it is difficult to understand why some other common fractures are not mentioned at all. For instance, fracture of the clavicle surely deserves some discussion among the fractures of children, but it is not mentioned. The book, however, will be of assistance to anyone who wishes to consult a special work on the surgery of childhood.

LEHRBUCH DER UROLOGIE UND DER KRANKHEITEN DER MÄNNLICHEN SEXUALORGANE. Von Dr. Alfred Rothschild, Spezialarzt für Urologie in Berlin. Paper. Price, 13.50 marks. Pp. 522, with 162 illustrations. Leipzig: Dr. Werner Klinkhardt, 1911.

This book presents the merits and demerits frequently observed in the products of German authors; it is encyclopedic rather than concise, scholarly rather than didactic; it enables the reader to know many things, but to do few things; and its therapy is curiously incomplete. Thus tuberculin therapy and the entire subject of vaccine therapy receive each just enough space—three lines—to be named and dismissed without comment. That part of the book devoted to cystoscopy and urethroscopy is modern, and bears the stamp of personal experience.

Medicolegal

Evidence Barred in Nymphomania Case

The Court of Criminal Appeals of Texas holds, on the appeal of *Jenkins vs. State* (131 S. W. R., 542), a prosecution for rape on a female under the age of consent, that whether the prosecuting witness was laboring under the disease of nymphomania could not be established by the general reputation of the blood relatives in the ascending line. On the trial she had testified that she was about 13 years old; that she had voluntarily entered into the act of intercourse with the accused; that she had been doing such things ever since she was nine years of age, and with a great many persons. An examination by physicians showed a full development of parts, etc., but there was a division of opinion as to whether the girl was a nymphomaniac, as contended by the accused, or not. Whether, if her mother and blood relations were people of inordinate passions, it would predispose the girl to nymphomania, the court does not decide, but merely that there was no error in refusing to permit the accused to prove the general reputation for chastity of the mother and sisters of the girl, as that could throw no light on the issue before the court, because reputation is one thing, and the facts another.

The court also holds correct an instruction which told the jury that if they believed and found from the preponderance of the evidence in this case that the girl, at the time she testified in the case, was laboring under such a defect of reason from nymphomania or other disease of the mind, and under such derangement of the mind, as to render her incapable of receiving a sound mental impression of the transaction regarding which she testified, or if the jury believed that she had the capacity to receive such mental impression as would render it impossible for her to retain and impart such impression

correctly, or if she was laboring under such defect of reason from disease and derangement of mind as would render it impossible for her to know and understand the nature and obligation of an oath, then in law she would not be a competent witness, and the jury should disregard her testimony altogether.

Furnishing of Water and Ice by Municipalities to Promote Health

The Supreme Court of Georgia says, in *Holton vs. City of Camilla* (68 S. E. R., 472), that the object in bringing, by means of a waterworks system, water in pipes from a distance for use in supplying the needs of a city, is not alone to obtain a sufficient quantity, but also to secure that which is freer from impurities than it is possible to obtain in the city itself. And if, in the hot season of the year, the inhabitants of the city must, for sanitary reasons, relinquish the cool draught from the well because, as has been demonstrated, wells of pure water cannot be maintained in populous communities, surely the city would have the right, were it practicable, to cool the water which it delivers through pipes as a substitute, and which oftentimes is scarcely drinkable in its heated condition. If not practicable to cool it in the pipes, and if it be necessary to the welfare, comfort and convenience of the inhabitants that its temperature be lowered before being used for drinking purposes, why cannot the city provide for the delivery of a part of it in a frozen condition, to be used in cooling such part of the balance as is used for drinking purposes? If the city has the right to furnish its inhabitants with water in a liquid form, the court fails to see any reason why it cannot furnish it to them in a frozen condition. If in the hot climate in which the city of Camilla is situated ice is necessary for the comfort, health and convenience of its inhabitants, why should not the city be permitted to furnish ice to its inhabitants? And if the furnishing of ice to its inhabitants is conducive generally to their health, comfort and convenience, it is certainly being furnished for a municipal or public purpose. It is a well-known fact that one of the main uses to which ice is put is the cooling of water for drinking purposes; and when it is used for this purpose, if impure, it is as apt to be deleterious to the consumer as any other impure water. Why, then, in the exercise of its police power, may not a city guard against impurities in the ice, as well as the water, used by its inhabitants? Nor does the court see any rational objection on the idea that the city will be engaging in a manufacturing enterprise. The city might perhaps equally as well be said to be manufacturing when by the use of a filtering process it changes impure water into that which is pure.

Proof of Death

The United States Circuit Court of Appeals, Ninth Circuit, says, in *Northern Pacific Railway Co. vs. King and others* (181 Fed. R. 913), an action brought by the latter parties to recover for the alleged wrongful death of one H. A. King, that the fact of one's death may be proved by circumstantial evidence, provided the facts and circumstances going to show such death be sufficiently strong. It is also true that under some circumstances the fact of death, as well as of birth, marriage, pedigree and the like, may be proved by hearsay evidence. It has been held by many courts that the death of an individual, though disconnected with any question of pedigree, and for whatever purpose sought to be established, may be proved by hearsay, subject to the same restrictions that are applicable to cases where matters of pedigree are involved. But the court knows of no case which holds that it is competent to prove the basic and controverted fact by hearsay testimony, pure and simple, under circumstances like those presented here, where the accident resulting in the injury of H. A. King had but recently occurred, and whether or not it resulted in his death was susceptible of easy proof. As a matter of course, no inference of his death could be properly drawn merely from his injuries and the amputation of one of his legs, it having been affirmatively shown that he survived such injuries and amputation for a week or ten days.

Employment of Physician by One Member of County Board

The Supreme Court of Oklahoma holds, in *Mahr vs. Board of County Commissioners of Pottawatomie County* (110 Pac. R. 751), that one member of a board of county commissioners cannot bind the county to pay for the services of a physician in attending on the poor without first having been authorized thereto by the majority of said board whilst in session. The plaintiff set forth that the defendants were indebted to him in the sum of \$423 for professional services as a physician and surgeon rendered and performed in giving medical care to the poor and paupers and county charges in the city of Shawnee and vicinity thereof. He further alleged that all and each item of such services were rendered in case of an emergency, that is, in which the patient was in absolute need of medical attention, and at the time of the rendition of such services there was no physician in the employ of the city of Shawnee and vicinity, and that in each the services were performed at the instance of one of the commissioners of said county, said city being within his district. But the court, for the reason first above stated, holds that a demurrer was properly sustained to this cause of action, as it was not alleged that, by any resolution of the board of county commissioners, this one commissioner was authorized to employ the plaintiff to perform the services herein sued for.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Los Angeles, June 27-30.

Alabama, Medical Society of the State of, Montgomery, April 18.
Am. Assn. of Pathologists and Bacteriologists, Chicago, April 14-15.
American Gastro-Enterological Assn., Philadelphia, April 19-20.
California, Medical Society of State of, Santa Barbara, April 18.
District of Columbia, Medical Association of, Washington, April 25.
Georgia, Medical Association of, Rome, April 19-21.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Medical Society of the Missouri Valley, St. Joseph, Mo., March 16-18.
Mississippi State Medical Association, Jackson, April 11.
New York, Medical Society of the State of, Albany, April 18.
South Carolina Medical Association, Charleston, April 19-21.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Annual Meeting, held in Chicago, Feb. 27-28, 1911

The President, DR. J. A. WITHERSPOON, Vanderbilt University, Nashville, Tenn., in the Chair

A list of the officers elected at this meeting was published in THE JOURNAL, March 4, 1911, p. 678.

The following amendments to the constitution were adopted:

Amendments

ARTICLE III: SECTION 1.—Every college holding membership in this association shall, on and after Jan. 1, 1912, require for matriculation a completed or unconditioned medical student's certificate, to be granted by a state medical examining and licensing board, or a board empowered by statute to grant such certificates, or a certificate of entrance to the academic department of any state university, or a certificate of entrance to an accredited university or college, providing that said certificate is granted on no less than the following requirements:

(a) A baccalaureate degree from an accredited college or university.

(b) and (c) Unchanged.

(d) and (e) Eliminated.

SECTION 2. This examination must be conducted by or under the authority of the board of medical examiners of the state in which the college is located, or by a duly authorized examiner of the college entrance examination board, or the authorized examiner of an accredited university, state or otherwise, or by an examiner whose certificates are accepted by accredited colleges or universities, or by a method approved by the judicial council of this association.

SECTION 3. The term "accredited" as applied to high schools, academies, colleges and universities means institutions of that type that have been investigated and are

accredited by the State University of their respective states, or by the North Central Association of Colleges and Secondary Schools, the Association of Colleges and Preparatory Schools of the Southern States, the Association of Colleges and Preparatory Schools of the Middle States and Maryland, the New England College Entrance Certificate Board, the Association of American Universities and the Association of State Universities, provided that such accrediting is based on Article III, Section 1, of this constitution.

SECTION 4. Colleges in membership in this association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this association, excepting for the fourth year of their course, but no member of this association shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receive from the dean, secretary or registrar of such college a direct written communication certifying to the applicant's standing. Credit for time or scholarship cannot be given beyond that of the college issuing the credentials, except by mutual agreement between the colleges.

SECTIONS 5, 6 and 7. Unchanged.

SECTION 8. Each student shall be obliged to attend not less than 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent. or its equivalent in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

ARTICLE V: SECTION 1.—The entire course of four years shall consist of at least 4,000 hours for each student, and shall be grouped in divisions and subdivided into subjects; each division and subject to be allotted the number of hours as shown in the following schedule:

DIVISION 1.—ANATOMY, 720 Hours (18 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) Gross anatomy (including applied anatomy).....	510		120			390
(b) Histologic and microscopic anatomy	135		30			105
(c) Embryology	75		30			45

DIVISION 2.—PHYSIOLOGY AND CHEMISTRY, 600 Hours (15 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) Inorganic chemistry	180		60			120
(b) Organic chemistry	75		30			45
(c) Physiologic chemistry	104		30			75
(d) Physiology	240		140			100

DIVISION 3.—PATHOLOGY, BACTERIOLOGY AND HYGIENE, 450 Hours (11.25 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) Bacteriology	135		30			105
(b) Hygiene and general dietetics	45		45			210
(c) Pathology	270		60			210

DIVISION 4.—PHARMACOLOGY, MATERIA MEDICA AND THERAPEUTICS, 240 Hours (6 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) Pharmacology	105		40			65
(b) Materia medica and pharmacology	80					
(c) Therapeutics	55					

DIVISION 5.—MEDICINE AND MEDICAL SPECIALTIES, 970 Hours (24.25 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) General medicine (including clinical microscopy).....	640					
(b) Pediatrics	150					
(c) Nervous and mental diseases	105					
(d) Jurisprudence, ethics and economics	30					
(e) Dermatology and syphilis....	45					

DIVISION 6.—SURGERY AND SURGICAL SPECIALTIES, 720 Hours (18 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) General surgery	510					
(b) Orthopedic surgery	45					
(c) Genito-urinary diseases	45					
(d) Eye	60					
(e) Ear, nose and throat.....	60					

DIVISION 7.—OBSTETRICS AND GYNECOLOGY, 300 Hours (7.5 Per Cent.)

	Hours.	Lect.	Rec.	Dem.	Lab.	Wk.
(a) Obstetrics	195					
(b) Gynecology (including some abdominal surgery)	105					

Colleges may reduce the number of hours in any subject not more than 20 per cent., provided that the total number of hours in a division is not reduced. Where the teaching conditions in a college are best subserved, the subject may be, for teaching purposes, transferred from one division to another. When didactic and laboratory hours are specified in any subject laboratory hours may be substituted for didactic hours.

SECTION 2. Each college in membership in this association shall print in every annual catalog or announcement a table of the total number of hours' work given in said college arranged both by subjects and years.

SECTION 3. Each college in membership in this association shall print annually a list of its students by classes.

ARTICLE VIII: SECTION 1.—The stated meetings of this association shall occur annually at such place as the association may designate by vote, the time of meeting to be set by the officers and judicial council of the association.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Feb. 22, 1911

The President, DR. C. B. LONGENECKER, in the Chair

DR. T. J. O'DRAIN read a paper on "Ischemia versus Bier's Passive Hyperemia."

DR. ROBERT H. IVY, read a paper on "Industrial Phosphorus Poisoning."

Breaking Down of Wounds Following Operations

DR. JOHN J. GILBRIDE: The breaking down of wounds following operations is caused by infection. Since the application of iodine for sterilizing the skin it is also used by surgeons in the preparation of their hands. One of the best means of preventing suppuration of wounds is to have them dry. The unnecessary use of hemostatic forceps which "chew" and devitalize the tissues should be avoided. Iodine eatgut is now much in favor. The use of large-sized suture material is undesirable. Undue tension should not be placed upon the sutures nor should they be placed too closely together. The so-called stitch abscess has occurred, in my experience, most frequently when the cutaneous stitches were left in for a longer period than three or four days. I further believe that not a few wounds, by displacement of dressings, hands of patients, etc., become infected subsequent to operation. It is not possible to prevent all wounds from breaking down, but perhaps, by a little closer application of old facts one may lessen the number of wounds that break down through infection.

DISCUSSION

DR. JOHN A. MCGLINN: All of us who have no fear of telling the truth have trouble with our wounds. Doubtless since the use of iodine, infections have been less. The fewer assistants a man has when operating the less likely is he to have infection. The use of retractors is also a factor in the production of infection. It is much better to have the patient well relaxed and have the incision sufficiently large than to have the sides of the incision forced back with retractors. In dealing with pus cases in the pelvis it is advisable not to have great pressure on the sutures.

DR. L. JAY HAMMOND: It has always seemed to me that a potent factor in wound infection is an excessive amount of dressing applied over the abdomen, and for a number of years I have made this dressing rather scant, using only sufficient to cover thoroughly the surface and not to add to body temperature. My feeling regarding the iodine treatment is that it has no advantage over other methods, and is only an additional agent to trust to the hands of our nurses who are already overburdened with technique. For fear of strangulation of tissue, I use as few sutures as possible, and, when the abdominal walls are not too fat, I prefer the use of the through-and-through suture.

Tinea Favosa

DR. LEONARD D. FRESKOLN: This is a vegetable parasitic infectious disease, generally of the scalp, called contagious by most text-books, but better limited to the term infectious

according to modern terminology; not taken from mere surrounding atmosphere of patients and not very readily, as seen in the hospital, from living long with patients. The etiological factor known is the *Achorion schönleinii* found in 1839, and named by Remak. Many of the mycelia and spores make up the characteristic "scutulum," a sulphur-like cup having the odor of mice, from which the disease may be contracted. Some cases have involvement of parts other than the scalp, as nails, trunks, knees (Fox) and mucous membrane (Kaposi). The affection is liable to be confounded with ringworm. Apart from the characteristic lesions of favus the microscope shows the large mycelium branching and broad spores. The disease is said, by Peyritsch, to take from three to six weeks for its development. It is very refractory to treatment, some cases lasting years; bald spots are a frequent evidence of the disease. In treating we soften the lesions with 5 per cent. earbolized petrolatum, epilation is practiced, sulphur or chrysarobin preparations are used. The best treatment is a long Roentgen-ray exposure repeated. Carbon-dioxid snow has been used with uncertain results. I recently excised a lesion to hasten cure. Favus is one of the deportable diseases, with a fine, in the United States. If a patient is not at once deported he must be under treatment until cured and remain so a month at least. Crocker says: "The disease may be considered cured when after six weeks' discontinuance of treatment there is no localized scalliness." Of course, some cases are very pitiable, but care must be exercised in handling immigrants. Twenty-six of forty-eight patients at our hospital were Russians; average age, 13½ years.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

February 23

- 1 *A Review of the Midwife Situation. A. B. Emmons and J. L. Huntington, Boston.
- 2 *Dislocation of the Hip and Its Reduction by the Method of Bigelow. G. H. Monks, Boston.
- 3 A Case of Ovarian Pregnancy. E. B. Young and L. J. Rhea, Boston.
- 4 Symptomatology of Abscess of the Liver. W. C. Quinby, Boston.
- 5 Disappearance of a Catheter in the Bladder and Its Subsequent Spontaneous Passage. W. E. Wilson, Pawtucket, R. I.

March 2

- 6 Studies in Intestinal Disturbances in Children. W. E. Fay, Boston.
- 7 *Bacillary Dysentery. A. I. Kendall, Boston.
- 8 *Infectious Diarrhea. H. Bowditch, Boston.
- 9 *Silver Nitrate Irrigations in Treatment of Infectious Diarrhea in Infants. R. M. Smith, Boston.
- 10 Analysis of 178 Cases of Infectious Diarrhea in Infants. J. H. Young, Newton, Mass.
- 11 The Flora of Bacillary Dysentery. A. I. Kendall and A. W. Walker, Boston.
- 12 *Two Methods of Obtaining Human Milk for Hospital Use. F. B. Talbot, Boston.
- 13 *Diarrhea in Infants Associated with the Gas Bacillus in the Stools. A. I. Kendall and R. M. Smith, Boston.
- 14 Double Otitis Media. Dehiscence of the Floor of the Cerebral Tympani. Streptococcus Meningitis. D. W. Drury, Boston.
- 15 A Case of Intussusception. B. Vincent, Boston.
- 16 A Method of Collecting Urine from Female Infants. C. H. Lawrence, Boston.

1. The Midwife Situation.—In reviewing the midwife situation abroad and in this country, Emmons and Huntington found two standards of skill and a divided responsibility. The midwife must either be a competent, trained obstetrician, or she must become a subordinate, cooperating with the obstetrician, as does the trained obstetric nurse, relying on his judgment and leaving with him the responsibility of the two lives, before a system harmonious and satisfactory can result. The authors believe it to be the duty and the privilege of the obstetricians to safeguard the mother and child in the dangers of childbirth. The obstetricians are the final authority to set the standard and lead the way to safety. They alone can properly educate the medical profession, the legislators and the public. A resolution of the Women's Municipal League

awaits only a formal endorsement to urge the importance of legislation, not for the licensing and regulating of the midwife, but for such minor changes in the laws as will make the present statutes effective in dealing with the midwife in Massachusetts. It has remained for this and other charitable organizations to point out the necessity for bettering obstetric conditions in the state. Let the medical profession, they urge, not only cooperate with these forces for good, but let obstetricians consider well the situation in obstetrics throughout the state to-day; let them look into the future and consider means of furnishing efficient trained service to rich and poor alike.

2. Dislocation of the Hip.—The points especially emphasized by Monks are (1) for practical purposes, all regular dislocations of the hip are, in reference to the acetabulum, either posterior or anterior; and (2) whichever the dislocation, an imaginary arrow on the exposed surface of the lower leg pointed toward the flexed knee will, in case the Bigelow method of replacement is to be used, remind the surgeon during the flexion whether to make the knee describe an inward or an outward curve.

7. Bacillary Dysentery.—It has been shown that bacteria acting on protein (nitrogenous substances), in the absence of fermentable carbohydrate, form putrefactive products, some of which may be very toxic. The dysenteric flora is essentially putrefactive in character. These products are absorbed in part, at least, from the alimentary canal, paired in the liver and excreted through the kidneys. The patient, therefore, in receiving no food, is being poisoned by the bacterial products elaborated in the intestinal tract, and attempting to detoxicate and excrete these substances in addition to maintaining the normal vital functions of respirations, heart beat and so on. Realizing these conditions, Kendall proposes feeding such patients from the start with carbohydrate. The principle involved is a twofold one: to furnish an easily assimilable and readily fermentable carbohydrate to change the character of the bacterial activity in the alimentary canal from the proteolytic to the fermentative type, and to furnish nourishment to the patient. The patient is first given a dose of castor oil or other cathartic to clean out the intestinal tract thoroughly. All food except sterile water is withheld for from twelve to fifteen hours to facilitate this cleaning out. Lactose, 5 per cent. solution in sterile water, is then fed by mouth for several days, until the acute symptoms abate, or until it becomes apparent that the patient requires some nitrogenous food. Whatever nitrogenous food is selected must be given cautiously, in small amounts, simultaneously with an excess of utilizable carbohydrate to protect it from bacterial attack. The lactose should be fed in rather small amounts, often repeated, to keep up a stream of this sugar in the alimentary canal, otherwise the proteolytes will be able to attack whatever nitrogenous substances may be present in the alimentary canal between the doses of lactose. Dextrose (Kahlbaum's) may be infused, preferably as a 2.5 per cent. solution in physiologic salt solution to bring to normal the dextrose content of the blood and to furnish fluid to the patient. This feeding of lactose is intended to accomplish a twofold purpose: to furnish to the host a readily assimilable food, requiring a minimal expenditure of energy to metabolize it, and to change the character of the metabolism of the dysenteric flora from the proteolytic to the fermentative type. This change in the type of the intestinal flora is particularly desirable to prevent further intoxication of the host and to give him a better chance to combat the poisons already absorbed.

8. Infectious Diarrhea.—The plan of treatment outlined by Bowditch is based on a trial in thirty-nine cases of children, from 3 to 16 months of age. They were not taken "*in serum*," but were chosen where some hope of life and chance for study existed. Of these, practically 50 per cent. died (nineteen). The duration of disease on admission varied from one to sixty days (an average of twelve) in the fatal cases; of those who recovered, from one to twenty-eight days (an average of eight days). Treatment was divided into: (1) the initial attack on the specific organisms and their resultant symptoms; (2) treatment of supplementary symptoms and supportive treatment. The former consisted of catharsis, using

castor oil, calomel and sodium sulphate, colonic irrigations with normal saline solution, plus lactose or dextrose, adding silver nitrate or tannic acid, if necessary—gastric lavage only when necessary. Temporary abstinence from all nutrition is imperative. This period lasts theoretically until the infection has subsided, temperature has fallen and the nervous irritability of the gastro-intestinal tract has improved. During this time ingestion of water is necessary to keep the fluids of the body and blood as normal as possible. Boiled water amounting to the quantity of food usually ingested is given by mouth. Lime water and alkalies have been added according to the digestion.

Of the thirty-nine children herein reported, all received sterile water for not more than three days (an average of two) in contrast to the usual prolonged starvation. After this short interval they received 5 per cent. lactose. Of the twenty discharged well and the nineteen who died, fourteen and ten, respectively (58 per cent.), received lactose up to 5 per cent. for an average of eight days. Seven of these died during the treatment. The temperature fell in seventeen and remained stationary or increased in seven. The movements diminished in thirteen and increased in eleven. Blood was increased in seventeen and diminished in five. Of those who recovered, an average of 25 ounces of sterile water was well taken, while barely 17 ounces was ingested by those who died. Lactose solution (5 per cent. administered for an average of eight days) was readily taken by all to an average quantity of 36 ounces. Of the remaining fifteen, two died before lactose administration was given. Six received whey (an average of 40 ounces in six days), while the remaining seven were given various foods and subsequently died. Seven of the twenty who recovered received at first dilutions of sterilized fat-free milk strengthened slowly to whole milk; three got whey at first, later straight dilutions of milk; five got buttermilk, and three got straight dilutions of sterilized milk to whole milk. Of the ten fatal cases that continued through the lactose administration, no definite result in regard to food can be stated. The majority of the children succumbed to the too early administration of milk or too rapid change of nourishment. The reason for the too early giving of food was the necessity for some nitrogenous nourishment to sustain life. Toxemia was fought largely symptomatically. The stimulants were mostly given hypodermically. Brandy was seldom used. Strychnin, from 1/250 to 1/500 grain, was given when cardiac failure was imminent. Bowditch says that lactose and dextrose in the irrigations gave no demonstrable therapeutic value, and that dextrose infusions were certainly an improvement.

9. Treatment of Infectious Diarrhea in Infants.—During the last season at the Boston Floating Hospital colon irrigations of 3 per cent. silver nitrate were employed in the treatment of infants ill with infectious diarrhea. The technic of the irrigation did not differ essentially from that of ordinary irrigations. Smith says that it is advisable, however, to clean the rectum, and as much of the colon as possible, before using the silver nitrate solution. A cleansing irrigation with sterile water is given and continued until the water comes back clear. Salt solution should not be used for this preliminary cleansing, since the sodium chlorid forms with the silver nitrate an insoluble silver salt which is precipitated and the strength of the silver solution is weakened. When the cleansing has been completed, 1 pint of a 3 per cent. silver nitrate solution is allowed to run into the colon and the tube then withdrawn. Some of the solution will be expelled, but no attempt is made to recover the entire amount used. In adults there is considerable pain after the injection, but none of Smith's patients showed any marked evidence of discomfort.

The treatment was used in thirty-two cases. None of the patients was in any way harmed by the treatment. Three infants showed a rather severe reaction, but it was only temporary in character. In twenty-two of the cases, treatments were given early in the disease. Eighteen of these patients were improved by the procedure, eleven markedly so, and seven slightly. Six patients were given the injection late in the disease; three, or one-half, were benefited. In six cases no report can be made. Smith claims that in a certain number

of cases of infectious diarrhea in infants, an early colon injection of 3 per cent. silver nitrate solution apparently hastens the disappearance of blood and pus from the stools and shortens the course of the disease. In some late cases, when blood and pus persist in the movements, the ulcers can be stimulated by silver nitrate injections and the stools cleared.

12. Two Methods of Obtaining Human Milk for Hospital Use.—The hospital of the Massachusetts Infant Asylum, which uses the method of most foreign hospitals, has resident wet nurses who are part of the organization of the institution. These women are secured from other charitable institutions, and from the lying-in hospitals. They are not permitted to do any heavy work or scrubbing, but should only dust a certain number of rooms and do their own washing. They are allowed to have as much as they want of a liberal diet, which costs the hospital from 43 to 45 cents a day for each person. The milk of these wet nurses is used in two ways: (a) The milk is drawn with breast pumps for the very weak and delicate babies. It is placed in sterile jars and kept in an ice-chest until used. (b) The stronger babies are put to the breast. The amount of milk taken is recorded by a trained nurse, who weighs the baby before and after the nursing. The women are paid according to the amount of milk they supply, at the rate of 2 cents an ounce for "drawn breast milk" and 1 cent an ounce for nursed breast milk, up to a limit of \$16 a month. The Boston Floating Hospital collects the milk from nursing mothers in the tenement district. Precautions are taken to have the milk drawn in a cleanly manner and put in sterile bottles and then kept at a low temperature. The women are paid at the rate of 60 cents a quart.

13. Diarrhea in Infants Associated with the Gas Bacillus in Stools.—In the opinion of the authors there exists a group of diarrhea in infants impossible to differentiate clinically from infectious diarrhea caused by the dysentery bacillus. These cases are associated with the presence of large numbers of gas bacilli in the stools. The bacilli occur in such numbers and in such relations that it seems reasonable to believe that they are the etiologic factor of the diarrhea. This diagnosis, when made, gives the indication for treatment with buttermilk.

Medical Record, New York

February 25

- 17 Preliminary Report of Cases of Syphilis Treated by Salvarsan. C. H. Chetwood, New York.
- 18 *A Simple Method for Relief of Certain Forms of Odynphagia. P. T. Hald, Copenhagen, Denmark.
- 19 *A Case of Aneurysm of the Heart. J. B. Betts, Buffalo, N. Y.
- 20 Stock Vaccines in Acute Gonorrhea. F. A. Palmer, Morris, Ill.
- 21 Gastric Ulcer: Hemorrhage, Operation, General Peritonitis, Vaccine Therapy. J. R. Verbrycke, Washington, D. C.
- 22 *Melted Iodoform Ointment in Treatment of Suppurative Bubo and Ischiorectal Abscess. H. A. Royster, Raleigh, N. C.
- 23 *Is Cancer Contagious? G. D. White, Jersey City, N. J.
- 24 A Case of Multiple Pregnancy with Eclampsia. E. A. Griffin, Brooklyn, N. Y.

March 4

- 25 Resection of the Posterior Roots of the Spinal Nerves to Relieve Pain, Pain Reflex, Athetosis and Spastic Paralysis—Dana's Operation. R. Abbe, New York.
- 26 Diagnosis of and the Feeding in Gastric Ulcer. W. G. Morgan, Washington, D. C.
- 27 Appendicitis and Its Moving Pathology. G. K. Dickinson, Jersey City, N. J.
- 28 Vaccination in the Philippine Islands. R. Olesen, Manila, P. I.
- 29 Bilateral Nephrolithiasis; Left Nephrolithotomy. L. B. Bangs, New York.
- 30 Short Talks with My Students and Others; Being Random Suggestions for the Younger Practitioners. R. H. Dawbarn, New York.

18. Method for Relief of Odynphagia.—Some time ago Howell claimed that relief of laryngeal pain may be secured by firm pressure on the ears and mastoid region in swallowing. Hald tried this method in thirty-three cases of inflammatory diseases of the tonsils and their surroundings. In twenty-four cases pain was considerably relieved by pressure against the tragus, or against the upper part of the mastoid. Tragus pressure was most efficient. He explains the process by supposing that it exercises a strong counterirritation of the skin area, whose sensitive nerve supply is in intimate relation to the sensitive nerve supply of the diseased tonsil. He limits the area to the lateral portion of the posterior meatal wall.

19. Aneurysm of the Heart.—In Betts' case the aneurysm arose from a gradual occlusion of the coronary artery by

atheromatous changes. There was extreme generalized arteriosclerosis, not caused by syphilis. The diagnosis was made post mortem.

22. Melted Iodoform Ointment in Treatment of Suppurative Bubo.—The principle of the treatment employed by Royster is that of attempting to promote resolution of the inflamed glands, to secure rapid pointing, if suppuration occurs, and, finally, to evacuate the pus and fill the cavity with melted iodoform ointment. When the inguinal swelling first begins, daily application is made of a salve composed of equal parts of pure ichthyol and the official ointments of iodine, mercury and belladonna. A small portion of this is rubbed in well and another portion spread thickly on a gauze dressing, which is held tightly against the area by a spica bandage. If absorption fails to take place and breaking down ensues, as generally happens, the following procedure is carried out, when the suppuration is at its height. A spot on the softest and most prominent part of the swelling is infiltrated with a 1 per cent. cocaine solution and a very small incision made here with a bistoury—an opening just large enough to let out the pus. When the cavity has been emptied by the aid of pressure it is washed out two or three times with hydrogen peroxid, diluted one-half with sterile water, followed by flushing with sterile water alone. For these washings an ordinary glass piston syringe is used. A quantity of 10 per cent. iodoform ointment is now melted (it can conveniently be done in a large spoon over a gas, alcohol or oil flame), sucked up into the same syringe, and injected into the suppuration cavity with some force, so as to completely fill it. Over this is immediately placed a cold bichlorid of mercury gauze compress, which is retained by the spica bandage, as before. The dressing is not disturbed for five days. At the end of this time it is removed and the excess of ointment is squeezed out; if any pus remains a second injection of ointment is made; otherwise the gauze and bandage are reapplied for some days longer. In the majority of cases one treatment suffices to cure. Ischiorectal abscess, while not at all related to bubo, affords an opportunity of applying the method just outlined, thereby saving the patient time and trouble.

23. Is Cancer Contagious?—White reports five cases of cancer, four of which terminated fatally, three occurring in one house and two in another; all the patients were blood relations or lived in close contact with one another, as husband and wife. All have been infected within five years.

New York Medical Journal

March 4

- 31 Treatment of Syphilis by Intravenous Injections of Salvarsan. A. G. Rytina, Baltimore.
- 32 Oily Suspensions of Salvarsan. S. Pollitzer, New York.
- 33 *Diet in Heart Disease and Arteriosclerosis. L. F. Bishop, New York.
- 34 *Are We in Danger of Trachoma? A. Brav, Philadelphia.
- 35 Forecasts of Medical Practice in the Future. T. D. Crothers, Hartford, Conn.
- 36 *Operative Technic of Acute Suppurative Appendicitis. W. Bartlett, St. Louis.
- 37 Acute Amygdalitis. N. Settel, New York.
- 38 Prolonged Epistaxis Associated with Increased Vascular Tension. H. Hays, New York.
- 39 Phrenology and Its Founder: The Claims of Franz Joseph Gall on the Homage of Scientific Posterity. J. Knott, Dublin.

33. Diet in Heart Disease and Arteriosclerosis.—The importance of proper diet in heart disease is emphasized by Bishop. He says that in acute heart disease, the simplest and best diet to begin with is a milk diet, but that must very soon be supplemented by other simple and nutritious foods. In chronic heart disease the quantity of food should be reduced to the amount necessary for the maintenance of the body, the weight, and strength. The food should be divided into five small meals, the largest meal being taken in the middle of the day. The food should also be as dry as possible. In considering a specific choice of diet in heart disease, he divides the cases sharply into two classes. There are those cases in which, on account of a lesion of the heart of a mechanical nature, the welfare of the patient depends on the maintenance of a healthy heart muscle, able to do an extra amount of work. In these cases the problem is the same as that presented by patients suffering with tuberculosis or any other condition in which

the maintenance of health depends on the maintenance of resistance. In these cases, also, diet must be reasonable, but there is no necessity for careful chemical observation. The second class of cases, and the one which Bishop considers, is that in which the heart trouble is part of a general cardiovascular disease, and is of chemical, or at least toxic, origin.

34. **Trachoma.**—Brav feels that the data with reference to the contagiousness of trachoma are exaggerated. He is convinced that trachoma is not so contagious as it has been thought to be, and that it is a curable disease. Only neglected cases terminate in a reduction of vision. In this country, it never leads to total blindness, except, perhaps, among the Indians. Inasmuch as there is no trachoma problem in our country, laws on this subject, he thinks, need not be oppressive. Trachoma is not on the increase, but rather on the decrease. To create fear among the laity to the existence of imminent danger resulting from trachoma, which is purely imaginary, Brav believes, is entirely unscientific and harmful to the best interests of the community.

36. Abstracted in *THE JOURNAL*, Jan. 28, 1911, p. 298.

Lancet-Clinic, Cincinnati

March 4

- 40 The Time Element in Operations. C. A. L. Reed, Cincinnati.
- 41 Gonorrhea, the Problem. W. S. Ehrlich, Evansville, Ind.
- 42 Approximation of Widely Separated Wound Margins. J. R. Eastman, Indianapolis.

Journal of the South Carolina Medical Association, Charleston

January

- 43 The Hyperemic Treatment. G. E. Thompson, Inman.
- 44 The Anesthetist. J. B. Townsend, Anderson.
- 45 Operation for Correcting the Deformity of Undeveloped Lower Jaw or Receding Chin. R. S. Cathcart, Charleston.
- 46 Eye and Ear Troubles that Pertain to General Diseases. L. O. Mauldin, Greenville.
- 47 The Alkaline Treatment in Typhoid. R. E. Yellott, Lynchburg.

Bulletin of the Johns Hopkins Hospital, Baltimore

February

- 48 Relation of the Amnion to the Origin of Human Malformation: Necrosis of the Pancreas. Spondylolisthesis. H. Chiari, Strassburg, Germany.
- 49 Diabetic Acidosis. A. Magnus-Levy, Berlin.
- 50 Bacteriology of Baltimore City Water. W. W. Ford, Baltimore.
- 51 *Case of Congenital Deformities: Patent Ductus Botalli; Absence of Left Kidney and Chronic Peripheral Edema. C. R. Kingsley, Baltimore.
- 52 Transverse Fracture of the Body of the Ischium in 1893; Terminal Displacement in 1902; Diagnosed in 1909. N. W. Sharpe, St. Louis.
- 53 Peritonsillar Abscess. M. Warfield, Baltimore.

51. **Congenital Deformities.**—The interesting points in the necropsy findings of Kingsley's case were a very inconspicuous thymus, there being practically no tissue where the gland should be; normal heart valves, but an open ductus Botalli, measuring about 1 millimeter in diameter; an acute diffuse cellular myocarditis; no special hypertrophy of the ventricles; scattered areas of bronchopneumonia in both lungs. The left ureter appeared normal at its entrance into the bladder and as far as followed up to the brim of the pelvis. Here it was lost and no remnant of kidney tissue was found in this area. The left adrenal was close to the diaphragm and appeared normal. The right kidney was very large, about the size of two normal kidneys. There was a single distorted pelvis coming from the anterior median portion of the irregular kidney mass, the long axis being nearly parallel with that of the vertebral column and lying almost completely to the right of the vena cava, which crossed over its mesial surface. The kidney looked in no way abnormal. An acute enteritis throughout the ileum was found. The thyroid was small, pale, and uniform on section. The bone marrow appeared normal. Permission to examine the brain could not be obtained.

Southern Medical Journal, Nashville

February

- 54 The Gamete Carriers. Their Role in the Etiology of Malaria. G. E. Henson, Crescent City, Fla.
- 55 Malarial Manifestations in the Eye. M. H. Bell, Vicksburg, Miss.
- 56 Value and Limits of Laboratory Diagnosis. A. E. Thayer, Dallas, Texas.
- 57 A Summary of Cases of Malaria and of Cases Suspected to be Malaria, Examined in the Past Three Years. J. M. Swan, Watkins, N. Y.

- 58 *The Radical Cure of Malaria. S. Harris, Mobile, Ala.
- 59 Underlying Causes of the Existence of Soil Pollutions in Rural Districts. C. W. Stiles.
- 60 The Quick Macroscopic Typhoid Agglutination Test, Its Application and Advantages. C. C. Bass, New Orleans.
- 61 What Is Heat Exhaustion? W. H. Rennie, U. S. Navy.
- 62 *Progress Made in Intestinal Surgery, with a Demonstration of a New Method of Suturing the Bowel. A. E. Benjamin, Minneapolis.

58. This article was published in *THE JOURNAL*, Nov. 26, 1910, p. 1879.

62. This article was also published in the *Lancet-Clinic*, Feb. 11, 1911; abstracted in *THE JOURNAL*, Oct. 1, 1910, p. 1222.

Surgery, Gynecology and Obstetrics, Chicago

February

- 63 *Abdominal Myomectomy for Myomata of the Uterus. W. J. Mayo, Rochester, Minn.
- 64 Inflammatory Tumors of the Abdomen Simulating Malignant Disease. H. A. Bruce, Toronto.
- 65 Injuries to the Kidneys with End-Results. P. M. Pilcher, Brooklyn, N. Y.
- 66 Primary Multiple Malignancy. C. B. Davis, Chicago.
- 67 *Large Ovarian Cysts. J. S. Horsley, Richmond, Va.
- 68 *Functions of the Great Omentum. I. C. Rubin, New York.
- 69 Primary Sarcoma of the Appendix; Report of a Case. E. O. Jones, Seattle, Wash.
- 70 *Calculus in the Ureter. R. C. Bryan, Richmond, Va.
- 71 Technic of the Radical Abdominal Hysterectomy for Uterine Cancer. R. Peterson, Ann Arbor, Mich.
- 72 *Operative Method for Exstrophy of Bladder. A. Werelius, Chicago.
- 73 Abdominal Exclusion of the Fundus in Complete Prolapsed. J. R. Eastman, Indianapolis.
- 74 Open Treatment of Fractures. C. G. Levison, San Francisco.
- 75 An Efficient Inexpensive Enteroclysis Apparatus. W. A. Dewitt, Philadelphia.
- 76 A Sphygmometer for Proctoclysis Apparatus. W. S. Sutton, Kansas City, Kan.
- 77 An Aid to Radiography of the Urinary Organs. D. N. Eisen-drath, Chicago.
- 78 Legal Aspects of Post-Mortem Cesarean Section. C. S. Bacon, Chicago.

63. **Operation of Abdominal Myomectomy.**—Some interesting mortality data are furnished by Mayo in his review of cases of uterine myomata operated on by himself and Charles Mayo during the past ten years. These statistics include all varieties of operations and the various complications, such as cancer, tubal infections, necrosis and degenerations of the tumor, etc. Every patient dying in the hospital, irrespective of the cause of death or the length of time following operation, is counted as dying from the operation. Total number of operations for uterine myomata, 1,244; deaths, 30, or 2.3 per cent.; number of cases of myomata of the uterus which necessitated total abdominal hysterectomy, usually because of malignant degeneration or acute infection, 66; deaths, 2, or 3 per cent.; number of supravaginal hysterectomies, 900; deaths, 23, or 2.5 per cent.; number of abdominal myomectomies, 157; deaths, one, or $\frac{1}{157}$ of 1 per cent.; vaginal hysterectomies, 77; deaths, 2, or 2.75 per cent.; vaginal myomectomies, 50; deaths, 2, or 4 per cent.

67 and 70. Abstracted in *THE JOURNAL*, Jan. 14, 1911, pp. 140 and 141.

68. **Functions of the Great Omentum.**—As a result of his studies, Rubin claims that the omentum has no spontaneous motility. The displacements of the omentum may be explained by: (a) intestinal peristalsis; (b) intra-abdominal tension; and (c) the static condition of the stomach and colon and of the small intestine; (d) the anatomic relationship of the omentum to the gall-bladder and spleen. The omentum has no demonstrable "chemotaxis." The amount of intraperitoneal fluid plus the amount of gas contained in the large intestine account for this apparent intelligent retreat of the omentum from virulent infective processes. In addition the suction action of the diaphragm under changed conditions of intra-abdominal tension explains the apparent upward "chemotaxis" of the omentum in inflammatory lesions of the upper abdomen. The omentum has no intelligent and spontaneous protective rôle. Such protection as it apparently displays is simply due to its properties as peritoneum, and not as a superior organ with definite functions. It cannot restore vitality to necrotic organs nor vascular supply to those deprived of their circulation. The end-product of an adhesion between the omentum and a foreign body is the destruction of the foreign body; between the omentum and any other abdominal viscus is scar tissue. The omentum does not invariably repair spontaneously defects in hollow or

solid viscera; it does this imperfectly in man. Experimentally, when the rent is not too large, the omentum seems to occlude it and prevent leakage from the intestine. In perforated appendicitis, for instance, while the omentum is present in a great number of cases at the seat of the perforation, peritonitis, due to leakage, nevertheless frequently occurs.

The usefulness of the omentum in inflammatory lesions of the abdomen depends on (a) its power to form adhesions which isolate and render innocuous toxic products; (b) to its power of absorbing and eliminating toxic products or destroying them by virtue of its phagocytic elements. But when contrasted with the sequelæ, intestinal obstruction, pain, etc., its beneficence is overbalanced. The chief functions of the omentum are those of any other mesentery, namely: (a) fixation of viscera; (b) vascular supply. When the omentum is found adherent to an intra-abdominal tumor the probabilities are that the mass is inflammatory, and not neoplastic. If the tumor is adherent to a neoplasm, the tumor invariably has undergone inflammatory changes. (Ovarian dermoids.) In exploratory gall-bladder operations it is well to remember that an "adhesion" between this viscus and the omentum does not necessarily mean inflammation. The adhesion may be a normal mesentery of the gall-bladder, contributed by the omentum. Care should be exercised, therefore, in the examination of the adhesion before it is unnecessarily separated, and before the gall-bladder is removed. The best method of preventing adhesions between abdominal incision and omentum consists in the application of a continuous peritoneal catgut suture. Areas of the abdominal cavity uncovered by peritoneum lead almost invariably to adhesion formation. The omentum is capable of absorbing large quantities of fluid and particles in suspension. Large particles are attached in a purely mechanical way. Too much should not be expected from grafts of the omentum. A detached piece of omentum rapidly becomes necrotic, and is useless. Only intact portions of the omentum produce serviceable adhesions.

72. Operative Method for Exstrophy of the Bladder.—The operation devised by Werelius is done in two stages: The first stage consists of the formation of an artificial bladder (urodenum). The operative field (left abdominal side), after ordinary preparations, is painted with tincture of iodine and protected from the area of exstrophy by placing an adhesive strap obliquely across the lower abdomen and over a towel covered with oiled silk, which is then turned over the exposed bladder, completely excluding it from the operative field. The patient is then tilted over on his right side to allow the urine to flow away from the working area, and also to get the small gut out of the way. An oblique incision is then made in the left inguinal region, much the same as for appendectomy on the opposite side. The sigmoid is delivered through the wound and divided about 7 inches above the rectosigmoidal junction and the proximal end anastomosed to the upper part of the rectum, leaving a future artificial bladder about 6 inches long. The abdomen is closed in the usual manner without drain. In the second stage, a flap of bladder containing the ureters is dissected and all of the bladder mucosa is cut away. Through a median abdominal incision the intestinal pouch is exposed and partly delivered through the wound and clamped with rubber-covered forceps. The clamped gut is opened into the lumen. The bladder flap is then approximated to the intestinal opening and sewed to the edge, through and through with linen. The opposite edge is sewed with a Connell stitch, so that, when finished, the gut somewhat overlaps the bladder flap. If the intestinal tissue is abundant, serosa may be drawn over so as to cover the flap completely. The abdomen is closed, with gauze drain *in situ*.

New York State Journal of Medicine

February

- 79 Tuberculous Peritonitis. N. Jacobson, New York.
- 80 Dermatologic Observations of Interest to the General Practitioner. J. M. Winfield, Brooklyn, N. Y.
- 81 Infant Mortality in Greater New York. A. E. Shipley, Brooklyn, N. Y.
- 82 v. Mikulicz Disease. W. Lintz, Brooklyn, N. Y.
- 83 Sacral Suspension of the Uterus. J. VanD. Young, New York.
- 84 Mistakes in the Use of Obstetrical Forceps. J. M. H. Rowland, Baltimore.

- 85 The Physician and the Mental Development of the Young. P. W. T. Moxom, Brooklyn, N. Y.
- 86 Recognition and Treatment of Acute Mastoiditis. G. H. Rockwell, Syracuse, N. Y.
- 87 The Medical Profession as Related to the Community, State and Nation. T. D. Mills, Middletown, N. Y.
- 88 International Commission on Control of Tuberculosis Among Domestic Animals. M. H. Reynolds, New York.

American Journal of Medical Sciences, Philadelphia

March

- 89 *Presence of a Venous Hum in the Epigastrium in Cirrhosis of the Liver. W. S. Thayer, Baltimore.
- 90 Diagnosis of Duodenal Ulcer. W. F. Cheney, San Francisco.
- 91 *Traumatic Diabetes in Children. I. A. Abt and S. Strouse, Chicago.
- 92 *Biot's Breathing. L. A. Conner, New York.
- 93 Myogenic Doctrine of the Cardiac Activity and Its Relation to Arrhythmia. J. H. Musser, Philadelphia.
- 94 *Interrelations of the Organs of Internal Secretion. R. G. Hoskins, Columbus, Ohio.
- 95 Acetabular Fracture with Intrapelvic or Central Dislocation of the Femoral Head. W. Fuller, Chicago.
- 96 *Congenital Syphilis of the Heart. A. S. Warthin, Ann Arbor.
- 97 Personal Experiences with Salvarsan in Syphilis. H. Goldenberg and D. J. Kaliski, New York.

89. Cirrhosis of the Liver.—A venous hum, accompanied sometimes by a well-marked thrill, has been detected by Thayer in the epigastrium in some instances of hepatic cirrhosis. He says that the thrill and murmur may be appreciable: (a) directly over the extensive cutaneous varicosities, or (b) in instances where there is little or no external evidence of venous engorgement. In most of the cases in which an epigastric venous hum has been heard in cirrhosis, in the absence of cutaneous varicosities, the sound has been audible best about the umbilicus and along the median line in the epigastrium—in other words, along the course of the round ligament. In a few of these instances it has been found that the incompletely closed umbilical vein has become greatly dilated as a result of increased portal pressure. In others, a large dilated vein has been found in the round ligament running alongside of the obliterated umbilical vessel—doubtless a dilatation of a small para-umbilical vein. Thayer points out that these murmurs should be distinguished from the slight venous hum sometimes heard in the anemic just above and to the right of the umbilicus, over the inferior vena cava—murmurs which may be brought out by pressure in thin individuals. These murmurs are said to disappear in some cases with pressure on one or another femoral vein (Friedreich). A venous hum has been described in Traube's space and in the left side of the epigastrium in the angle between the large liver and spleen in cirrhosis (v. Jacksch, 1899) and in splenic enlargement (Piazza-Martini, 1898), which may arise in a varicose splenic vein. A well-marked thrill and an intense venous hum may be heard in hepatic cirrhosis over a limited area in the epigastric notch, in the immediate neighborhood of the xyphoid cartilage, at a point so far above the lower border of the enlarged liver that it cannot depend on currents in a varicose umbilical or para-umbilical vein. Such murmurs may, in some instances, arise in varicose coronary veins (v. Jacksch), while in others, as those observed by Catti and the author, the seat of origin is probably in anastomoses between the roots of the internal mammary and the inferior deep epigastric vessels, very possibly to the entrance into these latter veins of an enlarged para-umbilical-xyphoid vein of Braume.

91. Traumatic Diabetes in Children.—Two cases of diabetes are reported by Abt and Strouse in which the glycosuria first came to light after the patients had suffered injury. The first child sustained injuries to the leg and abdomen in an automobile accident; the second child fell from a second-story window, striking on his head. In addition to the possible traumatic origin of these cases, there is an added interest in that both patients continue robust and in good health in spite of the daily elimination of a considerable quantity of sugar. This is in contrast to the text-book descriptions of cases of diabetes in children, which usually relate that in young individuals, more particularly children, diabetes runs a rapidly unfavorable course. It is also of interest to note the effect of the v. Noorden oatmeal diet on sugar elimination and acid retention. The ordinary clinical study of the first case showed an apparent anomaly in the production of an acidosis by the v. Noorden gruel. This point was especially

investigated in the second case. For certain periods the patient was allowed a somewhat restricted diet, containing gluten bread, supposedly starch-free, but actually, on analysis in the laboratory, yielding 32.5 per cent. starch. For the first ten days the food was not measured accurately enough to allow complete figures of food value to be stated; but from March 21 to April 9, each article was carefully weighed and its value computed, mainly from Atwater's tables, partly from analyses made in the laboratory. Very little restriction, except of carbohydrate, was enjoined during the period of liberal diet, and at all times the patient was allowed to roam about the wards, under surveillance, to prevent secret taking of food or loss of urine. The absolute reduction in sugar output as soon as the patient was put on v. Noorden's gruel was striking, and was in perfect accordance with the claims of v. Noorden and the experiences of other workers. In both cases, however, acetone, which was practically never present during the periods of glycosuria, invariably appeared after administration of the oatmeal gruel.

Clinically associated with this were symptoms suggesting acidosis, such as nausea, rapid pulse and headache; the ferric chlorid reaction, however, generally was absent. Since it is very unusual for acidosis to follow the use of v. Noorden's gruel, it was thought that the quantitative determination of the nitrogen and ammonia output might explain the apparent deviation from the usual reported reaction. There was a relative increase of ammonia each time the v. Noorden diet was given, but the nitrogen excretion always fell markedly because of a low protein intake. The figures representing total ammonia vary considerably and are not in agreement with the percentage curve. In fact, during the periods when the ammonia was 10 per cent. of the total nitrogen, the actual ammonia output was lower than it was at any other time during the period of observation. It is probable that the increased ratio is due to the low total nitrogen excretion, corresponding to the sudden diminution in the nitrogen intake. But the figures at the first and last v. Noorden period show an absolute increase of ammonia. After three days of the gruel, 4 grams of ammonia, or 22 per cent. of the total nitrogen, were excreted in the urine, and with the reduction of the glycosuria after the gruel later, the actual as well as the relative ammonia elimination was increased. The use of fresh vegetables and the v. Noorden gruel resulted in raising strikingly the patient's tolerance for carbohydrates and in reducing considerably the degree of acidosis. These two cases of traumatic diabetes ran a milder course than is usually seen in diabetes in children, but otherwise in their urinary and therapeutic reaction they did not differ essentially from cases of diabetes of non-traumatic origin.

92. Biot's Breathing.—During the past two years, in the course of a more or less systematic graphic study of pathologic types of breathing, Conner has encountered typical examples of Biot's type of respiration seven times. In six instances it occurred in the course of meningitis; in the seventh, it was found in a child suffering from some intracranial complication of suppurative mastoiditis, the nature of which could not be determined. The characteristic features of this form of respiratory arrhythmia may be stated as follows: (1) periods of apnea, which vary in length and occur at irregular intervals; (2) constant irregularity in rhythm, and in the force of the individual respirations; (3) frequent occurrence of deep sighs; (4) great uniformity of the expiratory level, a point noted by Conner and not previously described.

94. Interrelation of Organs of Internal Secretion.—Hoskins says that most of the available evidence indicates that the thyroid stimulates the adrenals. Hypothyroidism causes hypertrophy in the pituitary, probably due to a vicarious assumption of thyroid function. It is fairly well demonstrated that there is a relation between the thyroid and the gonads, which are probably stimulated to normal activity by the former. The frequent association of abnormal conditions in the thyroid and thymus points toward a relationship between them, but definite evidence on the point is meager and conflicting. The theory that the thyroid inhibits the pancreas is probable, but more data are needed.

96. Congenital Syphilis of the Heart.—It is stated by Warthin, that gumma of the heart is rare in congenital syphilis, but that congenital syphilis of the heart, in the form of a localized or diffuse interstitial myocarditis, is most probably not rare. The new criterion is the demonstration of the *Spirochæta pallida* in the proliferating interstitial tissues of the heart wall. Adler could base his diagnosis of syphilis only on the endarteritis. Warthin has shown that the same type of interstitial myocarditis in the absence of coronary endarteritis is syphilitic, by demonstrating that these light-staining patches of proliferating stroma represent localized colonies of the spirochete and that the organism occurs in such patches in extraordinary numbers. The myocarditis described by Coupland, Hektoen and Le Count, Warthin believes to be of the same type, sufficiently localized in the cases reported by the last two writers to be visible to the naked eye and to be interpreted as gummata. In all cases of cardiac disturbances in children, congenital syphilis should be carefully considered as a possible factor.

Warthin's series of cases also show that it can be a cause of asphyxia neonatorum and unexplained sudden death in infancy. Under such circumstances, the possibility of congenital cardiac syphilis must be borne in mind and a thorough microscopic study of the heart carried out. The same thing is true of cases of non-development, infantilism, chronic valvular lesions in children and young adults, etc. For all of these conditions an etiology of congenital syphilis of the heart is possible, and the diagnostic criterion is the demonstration of fibroblastic areas in the heart wall containing colonies of spirochetes. Congenital syphilis of the heart occurs most frequently in the form of a diffuse interstitial myocarditis due to the presence of the *Spirochæta pallida* in large numbers, without ordinarily producing characteristic macroscopic changes so that the absence or presence of congenital cardiac syphilis can be told only by a thorough microscopic examination of the heart wall.

Archives of Diagnosis, New York

January

- 98 Factors Influencing Mortality in Appendicitis from a Medical Viewpoint. J. M. Anders, Philadelphia.
- 99 Diagnosis of Acute Anterior Poliomyelitis. L. H. Mettler, Chicago.
- 100 Diagnosis of Small-Pox. J. M. Armstrong, St. Paul.
- 101 Diagnosis of Chronic Pancreatic Disease. N. Stadtmüller, New York.
- 102 Diagnosis of Toxemias Due to *B. Coli Communis*. F. B. Turck, Chicago.
- 103 Technic of Colonoscopy. H. Stern, New York.
- 104 Diagnosis of Pneumonia. A. A. Eshner, Philadelphia.
- 105 Differential Diagnosis Between Tumors Located in the Colon and Tumors Located in the Mesocolon. A. L. Soresi, New York.
- 106 The Duodenal Tube. M. Gross, New York.

Laryngoscope, St. Louis

February

- 107 *Preparation and Use of Thrombokinas. L. W. Strong, New York.
- 108 A Case of True Papilloma of the Nasal Septum. H. Arrow-smith, Brooklyn, N. Y.
- 109 Submucous Resection, with a Description of the Author's Special Instruments. M. Metzenbaum, Cleveland.
- 110 Sarcoma of the Nasal Wall of the Maxillary Antrum. O. T. Freer, Chicago.
- 111 Case of Chronic Progressive Bulbar Paralysis. R. H. Good, Chicago.
- 112 *An Unusual Case of Papilloma of the Larynx. W. W. Carter, New York.
- 113 *Fatal Case of Quinsy in an Adult. S. W. Prowse, Winnipeg, Man.
- 114 New Instruments: Antral and Frontal Sinus Illuminator; Frontal Sinus Rasp; Compressed Air Irrigator. J. J. Sullivan, Scranton, Pa.

107. Thrombokinas.—Believing that it would be interesting to take animal extracts and use them locally, Strong employed Batelli's method which consisted in extracting the tissue of the lung of the sheep with distilled water or salt solution, and then precipitating it with a very weak percentage of acetic acid; then centrifuging the precipitate, evaporating and adding alcohol to preserve it. He found that alcohol did not render it perfectly sterile, so he tried 1 per cent. thymol, and evaporated the precipitate at a low temperature with the electric fan, and then added an equal bulk of 1 per cent. thymol in alcohol. In order to determine if there was anything specific in the powder, whether it was

different from any other foreign body in its effect on coagulation. Strong conducted a number of experiments noting the coagulation time with rabbit blood, and found that he could secure coagulation within forty-five seconds. He also used various powders, and found that sometimes these delayed clotting rather than hastening it, and sometimes they had no special effect. So, apparently, here was something specific in its action. It did not lose its power when heated dry, but when it was moistened and heated with a very moderate degree of heat, 60 C. for thirty minutes, it became inactive. On that demonstration Strong based his claim of there being a ferment body in this preparation. No clinical data on the use of this substance, which Strong calls "thrombokinas," are available, although it has been used by a number of clinicians.

112. Papilloma of the Larynx.—The following are the most interesting features of the case: It gives the natural progress of papilloma of the larynx beginning in infancy and continuing undisturbed by treatment up to the age of 47 years. The very unusual fungoid appearance of the growth (so far as Carter can discover no case like it has been recorded), and the subsequent history are also of interest, whether the patient develops a speaking voice and whether there is a recurrence of the growth. The latter, Carter believes is unlikely, as the growths were thoroughly removed and the patient has passed that age when there is a tendency to warty developments. The larynx before operation was almost completely blocked by fungoid papillomatous masses, the largest of which, attached to the left side of the larynx, acted like a ball-valve and caused almost complete obstruction on inspiration. The edematous condition of the surrounding tissues gave the impression of an active inflammatory process.

It is also worthy of mention that these extensive growths were all removed endolaryngeally. Carter regards the endolaryngeal operation as the ideal one in these cases, and can scarcely conceive of a case of papilloma of the larynx justifying thyrotomy. In operating, he prefers the snare to any other instrument for the reason that the growth can be removed more accurately, more thoroughly and with far less injury to the surrounding healthy parts. The latter is most important, for it is the common observation of laryngologists that recurrences are more apt to spring from those portions of the larynx that have been injured during the operative procedures than from the bases of the primary growths.

113. Quinsy in an Adult.—The quinsy in Prowse's case was bilateral, the abscesses extending far down the neck, practically enveloping the whole larynx laterally and anteriorly; the characteristic doughy swelling was evident before the section was begun, and there had been no rupture of the abscess into the air-passages. Death had been preceded by violent struggling for air and clutching at the throat, and the post mortem disclosed that death had been due to edema of the glottis, hastened, no doubt, by the exertion of walking, and that an intubation and laryngotomy would probably have saved the patient's life.

Memphis Medical Monthly

January

- 115 Our Relations Toward the Peritonitides. J. A. Crisler, Memphis.
- 116 *Plaster of Paris as a Primary Dressing for Fractures. J. W. Barksdale, Vaiden, Miss.
- 117 *Prevention of Infantile Diarrhea. A. G. Jacobs, Memphis.
- 118 Importance of Elimination. D. M. Hall, Memphis.
- 119 Was It an Abscess of the Temporal Lobe? J. R. Nelson, Whiteville, Tenn.

116 and 117. Abstracted in THE JOURNAL, Dec. 10, 1910, pp. 2091 and 2092.

Bulletin of the Medical and Chirurgical Faculty of Maryland, Baltimore

March

- 120 *Management of Children Predisposed to Nervousness. L. F. Barker, Baltimore.

120. Management of Nervous Children.—Barker insists emphatically that in any case nervous children should not be sent to school too early; preferably they should start a year or even several years later than the normal child. And in

the schools they should never be pushed ahead too fast; competition is dangerous for the nervous child. The mistaken ambition of parents who desire their children to head the class is often responsible for serious injury to health. Sleeplessness is always a danger signal. In children it is frequently due to indigestion or to mental overstrain; occasionally to premature sexual excitations. If insomnia appears, and especially if it persists, the parents should consult a physician.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

February

- 121 *An Anatomic Study of the Fasciculus Occipito-Frontalis and the Tapetum. J. H. W. Rhein, Philadelphia.
- 122 A Case which Exhibited Thermomanesthesia: a Perversion of Thermal Sensation. L. Newmark, San Francisco.
- 123 A Brain of About One-Half the Average Size from a White Man of Ordinary Weight and Intelligence. B. G. Wilder, Ithaca, N. Y.
- 124 Dislocation of the Sixth Cervical Vertebra Forward on the Seventh. M. A. Bliss, St. Louis.

121. The Fasciculus Occipito-Frontalis.—In his anatomic researches on the brain Rhein found that there is in the upper levels on the right side a band of degenerated fibers more intense in the posterior wall of the lateral ventricle, which can be traced to hemorrhage in the levels below which destroys the tapetum to a certain extent. This band of degenerated fibers is continuous with a faint line of unstained or poorly stained white matter which at the uppermost levels surrounds the lateral ventricle, leaving a band of well-stained white matter between it and the ventricular wall. Forward and in the outer wall of the ventricle, this band corresponds to the position of the fasciculus occipito-frontalis as described by Marburg's atlas recently published. At a little lower level, this band cannot be traced all around the ventricle but is present still to a marked degree in the posterior wall of the lateral ventricle. These areas of degeneration, Rhein believes, may probably be interpreted as being fibers of the fasciculus occipito-frontalis which have been pushed to the side by the distention of the ventricle. At levels still lower the fasciculus occipito-frontalis is undoubtedly degenerated, and the unstained bundle of fibers can be traced in the corpus callosum as far as the median line, and when the same level on the left side is studied this can be followed into the fasciculus occipito-frontalis on this side. What appears to be degeneration can be traced into the splenium on the right side, but what the fate of these fibers on the opposite side is cannot be determined. Probably, though, they extend into the tapetum of the left side, as in one section the tapetum was degenerated and degenerated fibers could be seen in the splenium. There is little doubt in Rhein's mind that the degeneration of the fasciculus occipito-frontalis can be traced directly to the degenerated tapetum on the right side. That the degeneration in the corpus callosum is continuous with the degeneration in the fasciculus occipito-frontalis seems more than probable. This finding is uniform in a great many sections, and in comparison with sections from another brain recently studied, it appears to be undoubtedly abnormal. These findings support the views of those who claim that the tapetum is a part of a long association bundle connecting the frontal and occipital lobes. Whether the tapetum is made up exclusively of fibers from the fasciculus occipito-frontalis or in part from the corpus callosum cannot be definitely stated from the findings in this case, in spite of the fact, that degenerated fibers could be found in the splenium directly traceable to the original hemorrhagic focus, since the white matter of the occipital and temporal lobes was implicated as well. In Rhein's opinion, it seems probable that there is a long association bundle corresponding in position to the "faisceau occipito-frontal" described by Dejerine, of which the tapetum is a part, and which sends some fibers across the knee of the corpus callosum to the fasciculus occipito-frontalis of the opposite side.

Southern California Practitioner, Los Angeles

February

- 125 Diagnosis of Duodenal Ulcer. E. C. Moore, Los Angeles.
- 126 Surgical Treatment of Duodenal Ulcer. W. A. Edwards, Los Angeles.
- 127 Osteofibroma Occupying the Tonsillar Fossa. A. L. Kelsey, Los Angeles.

- 128 Diseases of the Gall-Bladder and Its Ducts, with Their Treatment. C. P. Thomas, Los Angeles.
129 Rabies and the Public Health. S. P. Black, Los Angeles.
130 Diagnosis of Fractures. B. J. O'Neill, San Diego

Northwest Medicine, Seattle, Wash.

February

- 131 Colon Bacillus Infection of the Urinary Tract. C. B. Lyman, Denver.
132 Ocular Manifestations of Arteriosclerosis and Their Diagnostic and Prognostic Significance. C. A. Veasey, Spokane, Wash.
133 Non-Specific Prostatic Hypertrophy. L. W. Hyde, Portland, Ore.
134 What Medicine Has Done and What It Will Do in the Conservation of Human Health. G. W. States, Franklin, Idaho.
135 Direct Blood Transfusion. A. T. R. Cunningham, Spokane, Wash.
136 Present Status of Treatment of Goiter. E. M. Rhininger, Seattle, Wash.
137 Common Eye Symptoms and What They Indicate. J. Jones, Tacoma, Wash.
138 A Case of Epiphysitis. R. H. Fisher, Righym, Idaho.
139 Moist Dressings in Surgery. J. T. Townley, Milwaukee, Ore.
140 Amebic Dysentery Contracted in the Arctic of Alaska. W. H. Axtell, Bellingham, Wash.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 18

- 1 *John Hunter and His Museum. E. Owen.
2 *Operations for Calculus in the Male Bladder. W. E. Haslam.
3 *Clinical Symptoms and Treatment of Chronic Subcutaneous Fibrosis. R. Stockman.
4 *Leukocytic Extract in Infective Processes. D. M. Alexander.
5 Electricity in Neurasthenia. J. Metcalfe.
6 Simulated Disease Occurring in Persons of Hysterical or Neurotic Temperament. J. Ewens.
7 *Eucalyptus Oil Poisoning. W. E. Foggie.
8 Curative Effect of Salvarsan in Frambesia. H. Alston.
9 Salvarsan in Three Cases of Syphilis.

1 and 2. Published also in the *Lancet*, February 18.

3. **Chronic Subcutaneous Fibrosis.**—It is held by Stockman that chronic inflammation of the subcutaneous connective tissue is a very common affection. It is secondary to various acute and chronic infections. The implication of the small peripheral nerves in the chronic inflammatory process gives rise to sensations of aching, stiffness, numbness, fatigue, etc. When persons already stout, or who afterward become so, are affected, the fat tends to form larger or smaller masses round the hypertrophied connective tissue. These masses are often very painful on pressure owing to the nerve twigs being in a condition of interstitial neuritis. The fatty masses are deposited mostly in the ordinary situations of fat accumulation. The abdomen, flanks, hips, thighs, shoulders and upper arms are in general the parts most affected, but sometimes fat is also deposited in the face, forearms, hands, legs and feet, either diffusely through the hypertrophied fibrous tissue or in lobules. When there is a large amount of subcutaneous fat the secretion of sweat is interfered with, but in most cases the amount of perspiration is normal. The morbid anatomy is very simple. When excised portions of subcutaneous tissue are examined microscopically, the fibrous tissue, the peripheral nerves and the blood-vessels are found to be in a condition of chronic interstitial inflammation; the fat cells are normal in appearance. In some cases, the fibrous tissue is much denser than in others. The condition is analogous to fibrosis of the lung, liver, kidney or ligaments, and, as, in these cases, is due to chronic local irritation from the toxins of germs or more definite chemical bodies. The most suitable name to apply to the condition, Stockman says, is probably the pathologic one of "chronic subcutaneous fibrosis." He reports five cases.

4. **Leukocytic Extract in Infective Processes.**—Alexander thinks that a new view may be taken of these extracts. They may in themselves be bactericidal and bacteriolytic to some slight degree, and they may contain natural anti-endotoxins. But they seem to act chiefly as leukocytic stimulants, inducing a huge outflow of cells, whose function is to protect the body from infection.

7. **Eucalyptus Oil Poisoning.**—A boy of 6, who had occasionally been in the habit of getting a drop or two of eucalyptus oil on sugar, was given by mistake a teaspoonful. This

was about 6 o'clock one evening. About 8 he had his usual light supper, and within two hours thereafter abdominal pain and severe vomiting set in. The vomiting continued without cessation of any length and diarrhea soon became marked. By 11 o'clock the boy became drowsy, and when he was seen about this time by Foggie, he was semi-comatose. He was pale and collapsed, with a small but not very quick pulse. The muscles generally were flaccid. The pupils were medium in size and equal. The conjunctival reflex was not quite abolished. The tendon reflexes were present and were not exaggerated. There was no cough and the breathing was shallow. He could be roused by very vigorous slapping of the face, but each time he looked dazed. Every time he was awakened the nausea and vomiting set in. The vomited matter, which consisted of mucus and watery material, had a strong smell of eucalyptus oil. After two or three hours of external stimulation very much along the lines usually adopted for opium poisoning, the heavy comatose condition seemed to pass off, and the child was allowed to sleep. He slept well, and next morning, beyond being a little tired, was quite himself again. The breath had a smell of eucalyptus oil for three days. There was never any irritation of the urinary tract. In brief, the poison showed itself by gastrointestinal irritation and cerebral paresis.

Lancet, London

February 18

- 10 *John Hunter and His Museum. E. Owen.
11 *Operations for Calculus in the Male Bladder. W. E. Haslam.
12 The Sphygmomanometer and the Sphygmograph. C. O. Hawthorne.
13 Eye-Strain and General Health. J. Hinshelwood.
14 Diffuse Latent Labyrinthitis: Its Dangers in the Radical Mastoid Operation. J. Harper.
15 Present Position of the Roentgen-Ray Treatment of Ringworm. S. E. Dore.

10. Also published in the *British Medical Journal*, February 18, and the *Medical Press and Circular*, February 15.

11. Also published in the *British Medical Journal*, February 18.

Medical Press and Circular, London

February 15

- 16 Angina in Tuberculin Treatment. R. Kramer.
17 *John Hunter and His Museum. E. Owen.
18 The Medical Examination of Employees. H. G. Langwill.
19 Suppression of Quacks and Quackery. D. Walsh.
20 New Points in Urine Analysis. J. B. Smith.

17. Also published in the *British Medical Journal*, February 18, and the *Lancet*, February 18, 1911.

Clinical Journal, London

February 15

- 21 Syphilis in Consulting Practice. E. M. Corner.
22 Diagnosis in Diseases of the Rectum and Anus. J. P. L. Mummery.
23 A Retrospect of Dermatology. E. G. Little.

Glasgow Medical Journal

February

- 24 Position of Laryngology and Rhinology in Medicine. R. Fullerton.
25 *Hematoporphyrinuria Not Due to Drugs. T. K. Munro and H. H. Borland.
26 Recent Advances in Hematology. W. K. Hunter.
27 *Cases Resembling Atrophy of the Optic Nerves which Recovered Under Treatment. L. Buchanan.

25. **Hematoporphyrinuria Not Due to Drugs.**—The patient, an unmarried woman, aged 27, housekeeper by occupation, came under the observation of Munro and Borland on account of symptoms resembling those of a mild type of diabetes. One week after a very severe chilling received while sea bathing, she observed the "bright magenta" tint of the urine. Her general condition was not satisfactory; she frequently vomited and ever since the chill she had been compelled to rise several times each night to micturate. The depth of the color varied. After a large dose of salts, the urine might be less dark, and occasionally seemed to clear for two or three days, but it invariably resumed its reddish color. She suffered a good deal from thirst and dryness of the mouth, and recently lost weight somewhat, and has been troubled with boils of the axillæ. Two of four specimens of urine examined contained sugar.

27. **Cases Resembling Atrophy of the Optic Nerves.**—During the past six or eight years, Buchanan has seen a considerable number of patients who presented many symptoms of atrophy of the optic nerves, but who have, fortunately, recovered the visual power fully both as regards central and peripheral vision. All the patients have been males between 30 and 50 years of age, and all have been steady, healthy looking men, working in responsible positions. None of the patients exhibited the signs or symptoms of toxic amblyopia; none was addicted to the overuse of either alcohol or tobacco; and none complained of, or exhibited evidences of either digestive derangement, kidney disease, or syphilis. In each case the complaint was of slowly increasing defect of vision both for near and for distant work, without any head pain or other evidence to lead to a definite cause. There can be no doubt that the diminution of vision must have been of recent origin in several. The symptoms have been diminution of central vision—both form and, less markedly, color—and peripheral contraction of the visual field, generally symmetrical. The optic nerves presented the appearance of early atrophy, pallor and sharp outline, without diminution of the caliber of the central vessels. In none of the patients was there any evidence of nervous disorder, and the subsequent history of such of the patients as Buchanan has been able to watch for one, two, three or more years has proved that the disease was not due to advancing sclerosis of brain or spinal cord. Examination of the urine showed that there was no disease of the kidneys, and careful inquiry failed to show any point from which toxic influences could start. The treatment in all cases has been purely medicinal—either tincture of *nux vomica* or strychnin, combined with iodid of potassium, in doses which were moderate at first, but later increased to full. In general, no benefit was experienced until a month or two had elapsed, and then it was slow but steady for about a year. Treatment was kept up until the visual acuity and the field of vision ceased to improve. In general, no improvement or alteration of the appearance of the optic nerve was seen, the size, outline and hue remaining much as at first. No diminution of caliber of the vessels was seen in any case.

British Journal of Children's Diseases, London

February

- 28 Four Cases of Hereditary Syphilis Treated by Salvarsan. J. H. Sequeira.
- 29 Pyloric Stenosis in Infancy. Indications for Operative Treatment. N. P. Marsh and K. W. Monsarrat.
- 30 Genesis of Hysterical States in Childhood and Their Relation to Fears and Obsessions. T. A. Williams, Washington, D. C.
- 31 *Subcutaneous Emphysema in a New-Born Infant. H. Wilkins.

31. **Subcutaneous Emphysema in a New-Born Infant.**—Wilkins reports the case of a primipara, aged 33, who, after a prolonged labor in which delivery was affected by axis-traction forceps, gave birth to a male child on Sept. 22, 1910. Although the heart was working well, artificial respiration had to be employed for about twenty minutes as the infant at first refused to breathe, and a large quantity of liquor amnii was expressed from the mouth and nose. The following day acute edema developed over the head, thorax and scrotum. The bowels and urine were normal. On September 26, the child, which had been crying lustily for the last twenty-four hours, suddenly became silent. The edema was then being rapidly replaced by a subcutaneous emphysema over the front and back of the head and thorax. The child could swallow well, but had complete aphonia. The breathing was slightly stridulous. There was no cough. Hot fomentations were applied to the neck, the nostril and nasopharynx were sprayed with normal saline solution, and 3 m doses of wine of ipecacuanha were given every two hours. At midnight the emphysema had increased, and there was considerable dyspnea. Râles and rhonchi were heard over both lungs, the respirations were 48, and the pulse was feeble. The infant was listless and showed no desire for food. Hot fomentations were then applied to the chest and back and 20 m of brandy were given every hour, together with wine of ipecacuanha and syrup of tolu and squills. The following day, September 29, the child was better generally, and took its food well. The emphysema was less on October 1, the child could cry loudly and the emphysema has almost gone. Subsequent recovery was uneventful.

Dublin Journal of Medical Sciences

February

- 32 Solid Solutions and Crystalline Liquids. W. G. Smith.
- 33 A Trip to India During the Plague Season. R. W. H. Jackson.
- 34 *A Case of Thrombosis of the Superior Mesenteric Vein. J. Burgess.

34. **Thrombosis of the Superior Mesenteric Vein.**—In addition to its rarity the interesting points in Burgess' case are: (1) the vagueness and mildness of the early symptoms; (2) the superimposition of a second group which completely masked the preceding; (3) the rapid course to its fatal termination in a few days from a condition of health. When first seen the man seemed in no way ill. The previous day, he had suffered from diarrhea with griping pains in the abdomen. The former had ceased, but the pains had not altogether disappeared. He was a stout, florid man, aged 65. A year previously he had suffered from a similar attack, which had yielded to simple remedies. Burgess prescribed a carminative for him and saw no cause to apprehend any further trouble. Late in the evening, the pain, although not severe, was continuous, and he had passed no motion or flatus during the day; he had retched bile (sic) three times. At this time temperature was normal, pulse 112, very high tension, heart sounds were distinct; there was no murmur present. The pain was referred to the left hypochondrium. There was no tympanites, and, although suffering, he made light of his condition. The urine was high-colored, but contained neither albumin nor sugar. A symptom which puzzled Burgess was a hyperesthesia of the rectum. The next day the pain was less, otherwise the man was no better. Temperature was subnormal, and pulse was 120, wiry in character. There had been one attack of vomiting in the early morning. No motion of flatus had passed. There was absolutely no rigidity, tympanites, or pain on deep pressure of the abdomen. The symptoms present were the continuous pain (by no means severe), the quick pulse and the rectal tenderness. The vomiting occurred on such few occasions that Burgess does not feel justified in giving it prominence. Repeated turpentine enemata, opium and hot fomentations failed to give relief. Three days later, temperature was normal, pulse 120, respirations 24. The patient was semicomatose; he could be aroused to answer questions, but his replies were erratic. There was no paralysis; the pupils acted normally. There was no vomiting. The bowels had acted after an enema had been given. There was absence of rigidity of the abdominal muscles. No complaint now of pain. A blood-count was made with negative results as to leukocytosis. Like negative results attended a lumbar puncture. The urine, except showing a slight trace of bile, was normal. On the following day, a change for the better occurred, but temperature was 101 and pulse 120. Then the man became deeply comatose; his face was suffused, and the pupils were equally dilated. Breathing was stertorous, without any Cheyne-Stokes character. He was passing urine involuntarily, and his temperature was 103 F. He was restless, rolling from side to side, perspiring freely; and at times trying to get out of bed. There was no paralysis of any muscle group. The pulmonary signs were loud rhonchi over both lungs. The abdomen was very slightly, if at all, distended. The liver dulness was normal in position, there was no enlargement of the spleen; but, being a fat subject, a satisfactory examination was difficult. There was no rigidity of the muscles. The coma deepened, and the man died the following morning. At the necropsy the liver showed a marked grade of atrophic cirrhosis, the typical hob-nail, alcoholic variety, with thrombosis of the superior mesenteric vein, as high up as the junction with the splenic; two loops of small intestine were ecchymosed, partly gangrenous, were adherent to each other and to the mesentery of the sigmoid; there was no perforation of the bowel, and there were about 150 c.c. of free fluid in the peritoneum. Other findings, including the head, were negative.

Annales de l'Institut Pasteur, Paris

January, XXIV, No. 1, pp. 1-96

- 35 Experimental Research on Exanthematous Typhus. C. Nicolle.
- 36 Globulins in Human Blood. M. Aynand.
- 37 Flies Reared in Aseptic Conditions. (Contribution à la connaissance du rôle des microbes dans les voies digestives.) E. Wollman.
- 38 Action of Intrapleural Injection of Mellin's Food on Course of Fowl Cholera in Rabbits. M. Margouliès.

Annales des Maladies des Org. Génito-urinaires, Paris*January 1, XXIX, No. 1, pp. 1-96*

- 39 Anatomy and Pathology of Tissues Adjoining the Prostate. (Aponévroses et espaces périprostatiques. Suppurations périprostatiques.) Averseny and Dieulafoy.

January 15, No. 2, pp. 97-192

- 40 *Operations on the Kidney and Pregnancy Later. (Operations sur le rein et la grossesse.) Hartmann and Pousson.
41 *Reflex Calculous Anuria. II. Eliot.
42 *Aspiration Treatment of Chronic Urethritis. Bronner.
43 Anuria from Concrement in Single Kidney Cured by Catheterization of Ureter. (Anurie calculuse dans un rein unique traitée et guérie par le cathétérisme urétéral.) André.

40. **Operations on the Kidney and Pregnancy Later.**—Hartmann reports normal pregnancy in eight women in whom a kidney had been incised or removed a year or more before. He has compiled sixteen other cases of the kind, and adding these to eighty-nine already published brings to 113 the number of cases on record in which an operation on the kidney was followed by pregnancy. In none could any influence be detected on the pregnancy from the fact of the preceding nephrotomy or nephrectomy. In thirty-five cases the operation was done during pregnancy, so that the latter is no contraindication for nephrectomy. He concludes from the data presented that marriage may be authorized in such cases, even if the operation had been done for renal tuberculosis, if the urine is sterile, as determined preferably by inoculation of animals. Pousson deduces similar conclusions from sixty-six cases he has compiled except that he insists on a careful study of the general health before authorizing marriage after nephrectomy, especially the functioning of the cardiovascular apparatus and liver and the anatomic and functional condition of the remaining kidney. Even with profound changes in the remaining kidney, with purulent urine, he has known nephrectomized patients to bear healthy children; but it would be taking too many chances to authorize marriage in such a case. In twenty-nine out of thirty-two patients in whom the nephrectomy had been done for tuberculosis, the pregnancy developed apparently normally, as also in nine of ten women operated on for lithiasis, and in all of the thirteen women in whom the operation had been for a suppurative process in the kidney.

41. **Reflex Anuria.**—Eliot remarks that a pathologic kidney is especially susceptible to reflex influences, and particularly organs in which there are concretions. He analyzes nineteen cases on record and reports one from his own experience. In the latter, the obstruction of the left ureter by a concrement induced total anuria. The concrement was dislodged and expelled by the simple expedient of distending the bladder, when the anuria at once subsided. Py Suer has demonstrated an antitoxic power in the kidney enabling it normally to neutralize toxic substances circulating in the blood. He has further demonstrated that uremic blood has an inhibiting action on the secretion of urine. When suffering from the presence of concretions, the antitoxic power naturally is enfeebled, while the uremic intoxication although possibly still latent may aid in inducing anuria.

42. **Aspiration in Treatment of Chronic Urethritis.**—Bronner introduces a perforated sound connected with a water jet vacuum pump and manometer, insuring a constant aspiration inside the urethra, maintained for ten or fifteen minutes at a time. The urethra is thus cleansed from all secretions and debris while the aspiration acts as a kind of massage of the walls and induces a healing local hyperemia. The results have been satisfactory, he reports, in over a dozen old chronic cases, and he thinks that the method deserves a wider trial.

Annales de Médecine et Chirurgie Infantiles, Paris*January 1, XV, No. 1, pp. 1-36*

- 44 *Curable Forms of Acute Tuberculosis in Children. E. C. Aviragnet and L. Tixier.
45 Recovery After Operative Treatment of Cerebral Abscess Seven Months After Trauma. II. Triboulet and M. Savariaud.
46 *Peritoneal Complications of Scarlet Fever. A. Touraine and H. Fenestre.

January 18, No. 2, pp. 37-72

- 47 General Principles for Examination of a Sick Child. E. Périer and E. Gaujoux. Continued in No. 1.

44. **Curable Forms of Acute Tuberculosis in Children.**—Aviragnet and Tixier declare that the discovery of tuberculous tracheobronchial glands is important both for diagnosis,

prognosis and prophylaxis. With acute symptoms, this discovery clinches the diagnosis and after their subsidence shows persistence of a dangerous focus, while it often clears up the diagnosis in latent tuberculosis. All children with swollen glands in the mediastinum should be regarded and treated as tuberculosis suspects, and should be guarded with special care against whooping-cough and measles which seem to be particularly disastrous for the general evolution of tuberculosis. These infections seem to display a special predilection for the lymphatic system and for the glands in particular. If the tuberculosis in an old tuberculous patient does not flare up anew after these infections or influenza, this may be accepted as a sign that the process has definitely healed and that the patient need no longer be classed as tuberculous.

46. **Peritoneal Complications of Scarlet Fever.**—The prognosis of peritonitis seems to be favorable when it is a scarlet fever complication. In a case described by Touraine and Fenestre, a boy of 14 developed scarlet fever during convalescence after an operation for appendicitis and scarlatinal acute peritonitis developed, but all disturbances subsided as the exanthem disappeared. They analyze a few similar cases on record in which an exanthem seemed to have developed on the peritoneum and disappeared with the superficial eruption under medical measures only. This peritoneal syndrome differs completely from the secondary peritonitis which may develop a week or weeks later, and which has quite a different prognosis.

Archives des Maladies de l'App. Digestif, Paris*January, V, No. 1, pp. 1-48*

- 48 Peritonitis from Perforation in Tuberculosis of Large Intestine. C. Roubier and R. Crémieu.
49 Malt and Curdled Milk in Infant Feeding. (A propos de l'emploi combiné de la bouillie de malt et du lait caillé dans les troubles digestifs du premier âge.) E. Terrien.
50 *Operative Treatment of Typhoid Perforation. E. Giordano.
51 *Lavage and Massage-Lavage of the Colon. J. Baumann.

50. **Operative Treatment of Typhoid Perforation.**—Giordano says that he has been able to save only about half of the patients operated on for this condition, but that they would all have inevitably succumbed if he had not operated, and he advises prompt surgical treatment and close supervision afterward in every case of peritoneal complication of typhoid, occlusion or perforation. He adds that he will not say that no one dies now from peritonitis, since Murphy introduced proctoclysis, but he will assert that not so many die from it. A typical case of typhoid perforation is reported in detail.

51. **Massage-Lavage of the Colon.**—Baumann makes a rectal injection of about a pint of fluid, which is ejected at once. This is followed by a second injection of about a quart. The patient then reclines in the dorsal decubitus and the physician, at his left, massages the fluid up into the colon and spreads it around with gentle manipulations. After massaging against the normal current, he massages then with it, the superficial effleurage toward the anus starting the bowel content in its natural course and regulating peristalsis. This procedure should not be often repeated or the bowel may become accustomed to it, and it should always be done very gently, never hurting the patient.

Archives de Médecine des Enfants, Paris*January, XIV, No. 1, pp. 1-80*

- 52 *Differential Diagnosis of Cerebrospinal Meningitis and Epidemic Poliomyelitis from Spastic Paralysis and Encephalitis. A. Moussous.
53 *Koplik's Spots. (Les taches de Koplik.) M. de Biehler.
54 *Perivascular Localization of Intestinal Tuberculosis in Infants. M. Péhu.
55 *Serologic Differential Diagnosis of Whooping-Cough. (Diagnostic de la coqueluche fruste par la réaction de Bordet-Gengou.) A. Delcourt.

February, No. 2, pp. 81-160

- 56 *Eczema in Infants. C. Rocaz.
57 Lactose in Infant Feeding. M. Péhu and C. Porcher.
58 Infantile Scorbutus. E. Lust.
59 *Scarlet Fever in a Nursing Mother. B. Delmas.
60 *The Elbow Sign of Scarlet Fever. C. Pastia.

52. **Differentiation of Epidemic Poliomyelitis and Meningitis.**—Moussous reviews the difficulties encountered in distinguishing between cerebrospinal meningitis, epidemic paralysis, infantile paralysis and acute encephalitis, stating that only the

newer differential methods allow correct differentiation, examination of the cerebrospinal fluid, etc. The lack of these in the past has led to much confusion. He insists that the sequels of cerebrospinal meningitis should be studied anew on the basis of the most modern methods, as he is convinced that many evils have been attributed to it for which it is not responsible—this mistake being the natural result of its having been confounded with other diseases.

53. **Koplik's Spots.**—Biehler has examined 947 measles patients for the Koplik spots and extols their diagnostic importance in permitting recognition of the disease before any other signs become apparent. They were found the day before the eruption in 864 cases, two days before in forty-two and up to ten days before in one case.

54. **Perivascular Localization of Intestinal Tuberculosis.**—Péhu has been studying for years the localization of tuberculous lesions in the intestine and states that they always are found close to the blood-vessels. This proves, he is convinced, that these lesions are of blood-borne origin and that the tubercle bacilli must have gained access to the body by inhalation, finding their way then from the air passages into the blood and settling at points of lessened resistance. He adds that the rarity of primary intestinal lesions is another argument in favor of this view, and also the fact that notwithstanding the general practice of pasteurization, boiling or otherwise sterilizing the milk, tuberculosis has never been so frequent nor so deadly in young children as at present. The infant consultations and sterilized milk depots are only an indirect means of prophylaxis, as Comby has recently pointed out; they are useful mainly in detecting latent or masked tuberculosis in the family and thus permitting proper measures to prevent infection of the infant by inhalation.

55. **Serologic Diagnosis of Whooping-Cough.**—Delcourt extols the advantages of the complement-fixation test in revealing latent or masked cases of whooping-cough in children and adults. Epidemics are kept up by these unsuspected cases, and their discovery is naturally of great importance for prophylaxis.

56. See abstract in THE JOURNAL, Dec. 10, 1910, p. 2099.

58. **Infantile Scorbutus.**—Lust remarks that he had encountered only seventeen cases of infantile scorbutus during eight years of practice when six came under observation in the course of three months. The cases were all in well-to-do families.

59. **Scarlet Fever in Nursing Mothers.**—Delmas' patient developed typical scarlet fever while nursing her month-old babe. The disease ran the usual course without complications and the infant continued to nurse and thrive without contracting the disease. Scarlet fever is rare in infants less than a year old, and it is possible, he thinks, that the mother's milk confers a passive immunity on the child.

60. **The Elbow Sign of Scarlet Fever.**—Pastia gives two illustrations of the stripe or stripes across the bend of the elbow to which he has called attention as an early sign of scarlet fever. The linear eruption is first pink, then dark red or dregs of wine color, or like an ecchymosis, and it leaves a pigmented stripe for a time after recovery.

Bulletin de l'Académie de Médecine, Paris

January 31, LXXV, No. 3, pp. 113-154

61 *Present Status of Cholera. (L'extension du choléra pendant l'année 1910 et le rôle de l'émigration.) A. Chantemesse.

62 Sterilization and Desiccation of Medicinal Plants. E. Bourquelot.

63 Vaccination Against Typhoid. E. Delorme and A. Netter.

61. **Cholera During 1910.**—Chantemesse regards emigration as the most important factor in the spread of cholera nowadays. Recent experiences have shown that infection was spread by individuals who had left the endemic focus twenty-five or thirty days before, and their goods had been disinfected several times, and they themselves inspected by physicians at two or three different times in the interval. Thus all the provisions of the present maritime sanitary police had been fulfilled to the letter, and yet cholera developed among them. Epidemics and poverty are driving people to emigrate, and the poverty pilgrimages are as dangerous to the health of the world

as the religious pilgrimages which have so long been the concern of the public health authorities, while the present international five-day supervision and other regulations are proving inadequate, he declares, to cope with present conditions.

Lyon Chirurgical, Lyons

February, V No. 2, pp. 109-208

64 *Adomino-Perineal Technic for Removal of Cancer of Uterus and Rectum in Women. (De l'ablation en un seul bloc de la masse recto-utéro-annexielle et du tissu cellulaire périphérique comme méthode opératoire dans le cancer du rectum chez la femme.) Albertin.

65 *Idem. (De l'amputation abdomino-périnéale du rectum, avec hystérectomie concomitante.) Goullioud.

66 *Abdominal Hysterectomy in Treatment of Cancer of Uterus, Rectum and Colon. L. Tixier.

67 *Sigmoiditis and Cancer. X. Delore and L. Lambert.

64. **Cancer of the Uterus and Rectum.**—Albertin advises removing the uterus with the cancer mass in the rectum, all in one piece. He first opens the abdomen and detaches the whole mass, preserving in the pelvis the ureters and the bladder. The abdomen is then sutured and the cancer mass and the adherent genitals are removed through the perineal incision. This technic is for the cases in which partial resection is inadequate and an iliac anus is necessary.

65. **Id.**—Goullioud has operated in five cases of rectal cancer in women by amputating the rectum with concomitant hysterectomy. Two women survived for fifteen and sixteen months and the others are in good health after two and four years to date.

66. **Id.**—Tixier advocates preliminary abdominal hysterectomy, which, he thinks, reduces the gravity of the operation. He describes two cases in which this technic was applied on women aged 33 and 58 and both are in good health at present, respectively six and nearly four years later.

67. **Sigmoiditis and Cancer.**—Delore and Lambert report three cases of apparent simple sigmoiditis in which operation showed a malignant tendency or a tuberculous stricture. The patients were a woman of 48 and two men, 60 and 69 years old. None survived the peritonitis for which the operation was done. Histologic examination alone permits the differentiation in dubious cases when there are suppurative complications. In one case there had been symptoms for nearly two years, in another for one year and in the third the syndrome of peritonitis and occlusion developed abruptly.

Lyon Médical, Lyons

January 29, CXVI, No. 5, pp. 133-212

68 Biting the Nails Cured by Device Covering the Teeth. (A propos d'un cas invétéré d'oncophagie.) A. Pont.

Obstétrique, Paris

January, IV, N. S., No. 1, pp. 1-120

69 Evolution of Obstetrics in France. P. Bar.

70 *Classic and Modified Cesarean Section. B. J. Kouwer.

71 *Momburg-Belt Constriction for Obstetric Hemostasis. P. Guéniot.

72 Congenital Absence of Peroneus Muscle. L. Dieulafoy.

70. **Cesarean Section.**—Kouwer states that in Holland obstetricians still prefer the classic technic and his own experience confirms its advantages. It has its drawbacks, but he is convinced that not one is suppressed by the extraperitoneal, suprasymphyseal technic while the latter exposes the woman to graver dangers than the classic method. He has done Cesarean section in sixty cases among 18,200 parturients, and he reviews this experience in detail, tabulating the various groups for comparison. The mortality for which he considers the operation responsible was only 1.72 per cent. although not all the patients were free from suspicion of infection. The chance of infection is increased by the longer duration of labor.

71. **Momburg-Belt Constriction to Arrest Obstetric Hemorrhage.**—Guéniot reviews eighteen articles that have been published on this subject and his own experience. In the majority of the cases the hemorrhage was arrested at once. The method produces disturbances in the circulation and arterial pressure but if the cardiovascular system is in good condition, he says, no harm results. It is better to refrain from this method in case of heart disease or arteriosclerosis, especially in surgical cases, but in obstetrics the method may prove a life-saving measure, especially in country practice and even

in well-equipped institutions. Some recommend that the Momburg tubing should be carried in every obstetrician's bag. The rubber tubing preferred is about the size of a finger, but ordinary gas tubing or the tube from a fountain syringe may be used. The technic was illustrated in *THE JOURNAL*, Oct. 30, 1909, p. 1519.

Presse Médicale, Paris

February 4, XIX, No. 10, pp. 89-96

- 73 Classification of Ptoxis of Liver. D. Chialditi.
74 Modified Cystoscopy. (Cystoscope pour les sondes urétérales à large diamètre.) E. Garceau.

February 8, No. 11, pp. 97-104

- 75 Arguments in Favor of Vaccination Against Typhoid. L. Landonzy.

Revue de Médecine, Paris

January, XXXI, No. 1, pp. 1-80

- 76 *Protracted Fever in Certain Infectious Diseases. H. Bernheim.
77 Metabolism of Ammonia Compounds. I. (Contribution à l'étude du métabolisme des composés ammoniacaux. Toxicité et élimination au cours du jeûne.) H. Labbé.
78 *Hemolytic Jaundice with Occasional Hemoglobinuria. A. A. H. van den Bergh.

76. **Protracted Fever in Infectious Diseases.**—Bernheim called attention in 1876 to cases in which the fever of an infectious disease persisted after subsidence of all other symptoms and, although apparently doing no harm, yet the temperature kept above normal for weeks, months or even years. The fever was generally noted in the evening, the temperature being normal the rest of the day. He has encountered the phenomenon with typhoid and paratyphoid, influenza, acute articular rheumatism, erysipelas, catarrhal pneumonia and pleurisy. The disease does not run itself out like the eruptive fevers and fibrinous pneumonia, but the fever-inducing microbes or their toxins evidently linger in the organism. The trouble is rather a tendency to relapses and recurrences than a steady febrile condition, as he shows by thirteen case-histories reported in detail. In one of bronchopneumonia all other symptoms had subsided by the forty-fifth day, but fever persisted to the eightieth day. In a case of right pleurisy all symptoms had disappeared by the twenty-seventh day, but the fever was evident until the one hundred and third day. The influence of influenza was evident in a few of the cases.

78. **Hemolytic Jaundice with Hemoglobinuric Crises.**—The patient in the case reported was a man of 47 who since 1899 has had recurring jaundice with occasional attacks of hemoglobinuria. Each attack is accompanied by more or less anemia, oppression in the cardiac region and pain in the hypogastrium, some of these symptoms persisting between the attacks to some extent. The blood findings are those of secondary anemia. The trouble seems to be an exceptional fragility of the man's blood-corpuscles in the presence of carbon dioxide at body temperature. This could be shown *in vitro*.

Archiv für Gynäkologie, Berlin

XCIII, No. 1, pp. 1-188. Last indexed January 28, p. 309

- 79 Causes and Importance of Phagocytosis in the Lochia. T. Heynemann.
80 Development of Placenta Prævia. R. Jolly.
81 Hemolysis in Relation to Jaundice in New-Born Infants. (Hämolyse in Beziehung zum Icterus neonatorum.) B. Slingenberg.
82 Interstitial Pregnancy. (Die interstitielle Tubargravidität.) E. Glaesmer.
83 Atresia and Torsion of One Fallopian Tube. E. von Graff.
84 *Treatment of Eclampsia. H. Heinze.

84. **Treatment of Eclampsia.**—Heinze's method is: (1) Rapid artificial delivery without the cooperation of uterine contractions; vaginal hysterectomy or abdominal Cesarean section if cervix and os are not dilated; forceps and version if sufficiently dilated; (2) enretting the uterus if eclampsia persists after delivery, even if the placenta has apparently been removed; (3) decapsulation of the kidneys if the eclampsia still persists and there are signs of serious injury of the kidneys; (4) general measures, including venesection, proctoeclysis, the Jaquet pack, diuretics, heart stimulants, artificial respiration and inhalation of oxygen. He gives the case-histories of three very severe cases in which treatment on these principles proved successful. In a fourth case this entire battery had not been brought to bear and the patient succumbed, which he thinks might have been prevented with a

little more energetic treatment. Hall, Tatzke and Fellner have reported cases in which puerperal psychosis or eclampsia subsided after enretting.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVIII, No. 3, pp. 393-421. Last indexed February 18, p. 545

- 85 Remarkable Case of Bronchiectasis. A. Bauer.
86 *Pseudo-Tuberculin Reaction. (Ueber Injectio vacua bei Tuberkulösen.) K. Weihrauch.
87 *Serodiagnosis of Pulmonary Tuberculosis. O. Roepke.
88 Estimation of Earning Capacity of the Tuberculous. (Beurteilung der Erwerbsfähigkeit bei der chronischen Lungentuberkulose.) T. C. Curschmann.
89 Tubercle Bacillus Emulsion in Treatment of Tuberculosis. (Spezifische Therapie der Tuberkulose.) Krause-Hannover.
90 Unfavorable Experience with Endotin. (Ueber Tuberculinum purum—Endotin.) F. Walterhöfer.
91 *Behavior of the Heart in Pulmonary Tuberculosis. (Verhalten des Herzens bei Lungentuberkulose.) J. Fürbringer.
92 Manometer Findings in Induced Pneumothorax. (Manometrische Beobachtungen bei der Ausübung der Therapie des künstlichen Pneumothorax.) L. v. Muralt.
93 Spengler's I. K. in 400 Cases of Tuberculosis. F. Lukin.
94 *Lung Findings in Scoliosis. (Der Lungenbefund bei Skoliose.) W. Neumann.
95 *Tables for Ready Reference with the "Tuberculin Titer" Test. (Tabelle für die Bestimmung des Tuberkulintiters nach Ellermann-Erlandsen.) A. Erlandsen.

86. **Sham Tuberculin Reaction in the Tuberculous.**—Weihrauch has tested the reaction in 212 tuberculous patients to a sham test injection of tuberculin. The instability of the heat center in the tuberculous was evidenced by the rise in temperature in 56, that is, in 26.4 per cent. after the slight trauma of the injection of mere water or the introduction of the needle without any injection; the reaction was more pronounced when aided by verbal suggestion by the physician. The rise in temperature was accompanied by general disturbances only in two cases, that is, in 0.9 per cent. The pseudoreaction may prove misleading in the clinic; the real criterion is the reaction in the tuberculous focus. There is no focal reaction after the sham injection and the temperature also drops more rapidly than after the real tuberculin injection. There did not seem to be any difference between the length of the interval before the temperature rose after the real and the sham injection except that a positive reaction was obtained between the twelfth and the twenty-fourth hours in eight patients with tuberculin and only in two so tardily with the sham tuberculin.

87. **The Serodiagnosis of Tuberculosis Not Practicable.**—This is the conclusion reached by Roepke after extensive experimental research on the possibility of transmitting to guinea-pigs the anaphylaxis possessed by tuberculous human beings.

91. **The Cardiovascular System in Pulmonary Tuberculosis.**—Fürbringer discusses the toxic influence on the heart and vessels of the tuberculous infection and the organic changes liable to result therefrom. Auscultation rarely shows normal conditions in the heart action. Accentuation of the second pulmonary sound is extremely frequent, he says, even with slight infiltration of the left, upper lobe, of which it may be the first sign in adults. The toxic influence of the tuberculous infection is felt mainly by the myocardium, and this permanent overirritability of the heart almost inevitably entails in time organic injury of the heart muscle and arteriosclerosis.

94. **Deceptive Lung Findings in Scoliosis.**—Neumann analyzes the percussion and auscultation findings liable to be encountered with curvature of the spine and mistaken for the results of tuberculous processes in the lungs. He cites some typical examples of various types of this scoliotic pseudotuberculosis and complications. In one case there was deformity of the chest plus acute bronchopneumonia. In another case the scoliosis was accompanied by a recent active tuberculous process in the lung, and in another with relics of an old healed process. Only a thorough knowledge of the findings to be expected in the chest with curvature of the spine will permit correct differentiation in such puzzling cases as these. He has found them comparatively frequent and, oftener than not, tuberculosis has been incorrectly diagnosed. In a typical case a high school graduate was rejected by a medical examiner on account of pronounced dullness over the back of the right apex, assumed to be a sign of a tuberculous process. The young man held himself straight, but closer examination

of the back showed that the left iliocostal muscle was abnormally prominent. A tendency to scoliosis was thus detected and the findings over the lungs proved to be those characteristic only of curvature of the spine. Such cases are frequently encountered, the patients passing through the hands of many physicians, none of them discovering the scoliosis responsible for the pseudotuberculosis findings. Many of the patients were regarded as holding themselves unusually straight; in some cases lordosis in the middle thoracic segment of the spine contributed to the stiffly erect posture. The scoliosis in these puzzling cases is too slight to attract attention unless especially sought for. One shoulder a little higher than the other, lordosis in the thoracic vertebrae or undue prominence of the sacrolumbal muscle on one side may be the only sign of the tendency to scoliosis. Neumann's experience has further shown, he asserts, that persons with kyphoscoliosis and mitral defects are exceptionally resistant to pulmonary tuberculosis. Among 1,767 cadavers only 59.5 per cent. were found free from tuberculosis, while of 120 cadavers with mitral defects, 77.6 per cent. were free from tuberculosis and 73.4 per cent. of 49 kyphoscoliotic cadavers. Among the typical findings with scoliosis Neumann mentions contralateral apical dullness, that is, on one side in front and on the other side in the back; dullness over the apex at the rear with dullness over the base on the other side. If dullness is noted over a lung corresponding to the extent of the scoliosis, this cannot be accepted as an indication of tuberculosis. Another sign of the pseudotuberculosis is the lesser movability of the base of the lung on the side opposite the convexity of the curvature of the upper thoracic vertebrae. This sign was constant in his cases. With light percussion the lung was found two or three finger-breadths above that of the other side and the margin of the lung did not share in the excursions of the other side.

95. The "Tuberculin Titer" Quantitative Test.—THE JOURNAL, May 15, 1909, page 1634, described the method devised by Ellermann and Erlandsen to test the hypersusceptibility of the organism to tuberculin by a graduated cutaneous tuberculin test with varying concentrations of the tuberculin. Erlandsen states that further experience has confirmed the simplicity and reliability of the method. He has worked out a set of tables for exact mathematical recording of the individual findings. All that is necessary to know is the average diameter of the four papules that follow inoculation with the four concentrations (0.5, 2, 8 and 32 per cent.), and the average of the differences between the diameters of the papules. The table shows at a glance the corresponding titer within a range of titers from 25 to 5,846, thus enabling instructive comparison of cases, and estimation of the individual conditions.

Berliner klinische Wochenschrift

February 6, XLVIII, No. 6, pp. 241-280

- 96 Tobacco Psychosis in Boy of Thirteen. P. K. Pel.
- 97 *The Wassermann and Cutaneous Tuberculin Reaction in Scrofulous Children. R. Hertz and O. Thomsen.
- 98 Chronic Tetany with Epileptiform Attacks and Psychosis. G. Saiz.
- 99 *Specific Differential Reactions with Vaccines According to Wright. (Vaccinediagnostik.) H. Reiter.
- 100 *Rachitis as Causal Factor in Curvature of the Spine. (Rachitis als ursächliches Moment für Rückgratsverkrümmungen.) M. Böhm.
- 101 *Couching for Cataract. (Reklination des grauen Stars.) G. Levinsohn.
- 102 Recurring Cutaneous Local Reaction During Pasteur Treatment of Rabies. (Eigentümliche Komplikation während der Pasteur'schen Schutzimpfung gegen Lyssa.) C. Frugoni and C. Gargiano.
- 103 Changes in Views Concerning Typhoid Epidemiology. G. Sticker.

97. Practically the same article was abstracted in THE JOURNAL, Jan. 28, 1911, page 314.

Vaccine Diagnosis.—Reiter reiterates that every infected organism for a certain period is in a condition of specific allergy, during which it reacts in a specific manner to renewed introduction of the substance inducing the allergy. If this premise is correct, administration of the allergy-inducing substance is a valuable means of differentiation of the infection in question by the specific reaction that follows. Vaccines prepared according to Wright's method answer the desired purpose, and he has found it possible to confirm by

this means the diagnosis of streptococcus, gonococcus, pneumococcus and other infections—the specific vaccine induced in every instance a strictly specific biologic reaction. Reiter would like to see this allergic reaction used in other diseases besides tuberculosis and anthrax to which now it is generally confined. It may render good service in other occult infections; the polyvalent vaccines are proving most useful. The serologic determination of the negative phase will further perfect our knowledge of differential biologic reactions in general and the vaccine diagnosis is liable to prove exceptionally valuable in differentiating extra-uterine pregnancy, appendicitis, oophoritis, cystitis, etc. The reaction should not be regarded as more than an adjuvant diagnostic measure; only a focal reaction, he adds, is positive proof of a specific affection. The vaccines are best tested on absolutely healthy individuals; no harm can result, he declares, with the minute dosage required.

100. Rachitis as a Causal Factor in Curvature of the Spine. Böhm gives illustrations of a number of cases of curvature of the spine to show that it can be traced in an unsuspectingly large proportion of cases to rachitis in early infancy. Treatment should begin earlier than has been the rule hitherto; physicians should search for the tendency to curvature of the spine in young children with signs of rachitis, and institute treatment in time to prevent irreparable injury. He decries the assumption that faulty postures and school work can induce curvature of a healthy spine. The Roentgen rays, etc., always reveal some anatomic basis for the deformity.

101. Couching of the Lens for Cataract.—Levinsohn thinks that under certain urgent indications this operation deserves reinstatement. Such indications are hemophilia and restless mania preventing a cutting operation on the eye. He has recently done reclamation in two elderly insane women, and the results, he reports, were highly gratifying; there has been no tendency to glaucoma or other complication during the four and six months to date.

Deutsches Archiv für klinische Medizin, Leipsic

CI, Nos. 5-6, pp. 421-630. Last indexed February 11, p. 463

- 104 The Pneumogastric Nerve. (Beiträge zur Anatomie, Histologie und Physiologie des Nervus vagus, zugleich ein Beitrag zur Neurologie des Herzens, der Bronchien und des Magens.) L. R. Müller.
- 105 The Specificity of the Wassermann Reaction and Study of Incomplete Reactions Sometimes Observed in Wasting Diseases. E. Scheidemandel.
- 106 Radical Treatment of Appendicitis: 611 Cases. A. Ebner.
- 107 Slight Clinical Value of Antitryptic Action of Pathologic Urine. J. C. Schippers.
- 108 Two Cases of Aortic Aneurysm Perforating Into the Pulmonary Artery. P. Geipel.
- 109 Increased Vibration of Chest Wall Always Sign of Infiltration of Lung. (Ueber den Pektoralfremitus.) H. Hochhaus.
- 110 The Sahli-Seiler Butyrometric Test Breakfast. (Zur Kritik des Sahli-Seiler'schen Probefrühstücks.) O. Prym.
- 111 Vascular Reflex Disturbances in Syringomyelia. H. Stursberg.

Deutsche medizinische Wochenschrift, Berlin

February 9, XXXVII, No. 6, pp. 241-288

- 112 *Secretory Disturbances in the Stomach. (Diagnose und Behandlung der Sekretionsstörungen des Magens.) D. v. Tabora.
- 113 *Blotting-Paper Test for Free Hydrochloric Acid in Stomach Content. (Eine neue Methode zur Bestimmung der freien Salzsäure im Magensaft.) I. Holmgren.
- 114 Functioning of Lung After Release from Induced Pneumothorax. C. Forlanini.
- 115 Salvarsan in Syphilis. W. Heuck and J. Jaffé.
- 116 Case of Verrucous Tuberculosis of the Skin and Lymphangitis Due to Bovine Tubercle Bacilli. K. Heuser.
- 117 Oponin Treatment of Skin Diseases. M. Bab.
- 118 Treatment of Detachment of the Retina. (Behandlung der Netzhautablösung.) R. Deutschmann.
- 119 Inflatable Pessary for Hemorrhoids, Etc. (Pneumopessar für Hämorrhoiden und Analprolapse.) E. Schlesinger.

112. Abnormal Gastric Secretion.—Tabora reviews recent progress in treatment of secretory stomach disturbances, especially hyperchlorhydria. It used to be supposed that sodium bicarbonate taken after a meal was the most effectual means of combating hyperacidity, but the laboratory has shown that secretion in the stomach is checked by taking the alkali fasting—checked both directly in the stomach and by reflex action from the passage of the alkali into the intestine. The more rapidly the alkali passes into the intestine, the sooner this inhibition occurs, and consequently the best results are obtained when the alkali is ingested fasting. Treatment of hyperacidity, therefore, is by having the patient take half

an hour before each meal a little alkali, and Tabora prefers for this a mixture of 20 parts magnesium usta, 10 parts sodium citrate and 5 parts sodium or magnesium sulphate. A four or six weeks' course of this generally suffices. He has abandoned the use of the bicarbonate as it is liable to induce discomfort and the carbonic acid evolved is a stimulant to further secretion. Sodium and magnesium sulphate have also an inhibiting action on gastric secretion in addition to their valuable laxative powers. The diet should be regulated to postpone as late as possible the production of free acid in the stomach, and this is best realized with an albumin-fat diet: he restricts the diet to albumin and fat more exclusively the severer the secretory disturbances but otherwise prefers a mixed diet. The articles of food should be in such a form as to expose the largest surface to the action of the gastric juice. It is better consequently to have the food in a soft mashed or finely chopped form than to have the patient chew it long, as mastication in itself induces by reflex action secretion in the stomach. Meat is less stimulating in this respect when boiled. The meals should be reduced in number, but copious. If the alkali treatment does not cure, a course of oil, 3 tablespoonfuls daily between meals, for several weeks, and eventually a little belladonna may be advisable. With chronic hypersecretion atropin is indicated in case the above measures fail, and the patients should be taught how to use the stomach tube themselves to siphon out the stomach content in case of much pain, especially before retiring at night. He adds that in this case as in all other affections the patient must not be forgotten in treating the stomach trouble, the blood, the mental poise, etc., must be considered. When the stomach trouble is an insufficiency of the secreting powers, rinsing out the fasting stomach with a dilute saline solution is useful, as also administration of hydrochloric acid. The latter not only aids in digestion but starts pancreas functioning, checks putrefaction in the intestines and by reflex action opens the pylorus.

113. Blotting-Paper Test for Free Acid in Stomach Content.—Holmgren has discovered that when a dilute solution of hydrochloric acid is dropped on blotting paper, as the fluid spreads by capillary attraction the water spreads farther and fastest while the acid only spreads to a limited distance around the center of the spot where it was deposited. The proportion between the percentage of acid and the proportional extent to which the acid spreads is a constant figure. From these premises he has worked out a simple quantitative test for determination of the free hydrochloric acid in the gastric juice. He applies with a pipette to a square of blotting paper a series of dots, 1 mm. apart, of a 1 per cent. aqueous solution of Congo red. He then deposits a small quantity of stomach content or solution of hydrochloric acid on one of the dots. The fluid spreads but the color reaction is obtained only with a certain number of the dots, those beyond not giving the reaction. By comparing the number of reacting dots with those beyond this zone but reached by the spreading moisture, we have the percentage of free acid in the fluid examined.

Deutsche Zeitschrift für Chirurgie, Leipsic

January, CVIII, Nos. 3-4, pp. 221-428

- 120 Advantages of Bismuth Paste in Fistulas. M. Brandes.
121 *Surgery of the Lungs. S. Solieri.
122 *Modified Technic for Gastrostomy. (Eine neues Gastrostomie-Verfahren.) P. Lofaro.
123 Diagnosis and Treatment of Acute Osteomyelitis and Purulent Spinal Meningitis. R. Goebell.
124 Ossifying Myositis or Callus About the Bone? P. Snideck.
125 Nail Extension in Treatment of Fracture. K. Heinemann.
126 Plastic Method for Mobilization of Stiff Elbow. (Interposition eines frei transplantierten Fascienstreifens bei knöcherner Ankylose des Ellenbogengelenks.) V. Thom.

121. Surgery of the Lungs.—Solieri, of Siena, Italy, reports six cases in which an operation was done on the lung for abscess or gangrene, with recovery in all but one case in which the lesions were multiple and the patient a feeble young child. One patient was a man of 54 with a large post-pneumonia gangrenous process in the right lower lobe. The cavity was the size of a man's fist and the man collapsed as it was evacuated under local anesthesia and hovered between life and death for several days; the lips of the wound became gangrenous. Cautious cleansing with potassium permanganate

and hydrogen dioxid gradually conquered this tendency and the patient left the hospital in good condition by the end of the month. The lung was entered from the rear in all the cases. Echinococcus cysts in the lungs promise better results after operative treatment, Solieri says, than any other surgical pulmonary affections.

122. Improved Technic for Gastrostomy.—Lofaro gives an illustrated description of his technic for making a permanent and continent opening into the stomach. [The main points were given in THE JOURNAL, Jan. 7, 1911, page 78.] He compares it with the various technics in vogue and extols its superior advantages. He has done the operation on eight large dogs and watched its ultimate outcome; complete and permanent continence was obtained in every case, the gastrostomy showing no change in any case during the months since, and his experiments on cadavers indicate that the same results can be counted on in human beings.

Jahrbuch für Kinderheilkunde, Berlin

February, LXXIII, No. 2, pp. 131-258

- 127 Hemoglobinuria After Chilling. (Paroxysmale Kältehä-moglobinurie.) M. Brückner.
128 Bacteriology of Respiratory Diseases in Children. I. H. Vogt.
129 *Casein Curds in Infants' Stools: Biologic Proofs of Their Casein Origin. (Kasein-Gerinnung in Kinderstuhl. Biologischer Beweis ihres Ursprungs aus Kasein.) F. B. Talbot.
130 *Early Mortality of Several Children in a Family. (Frühzeitiges Sterben zahlreicher Kinder in einer Familie.) K. Stolte.
131 Water Content of Infants' Blood in Health and Disease. (Wassergehalt des Blutes.) E. Lust.

129. Practically the same article appeared in *Archives of Pediatrics*, June, 1910.

130. Familial Mortality in Children.—Stolte gives the details in respect to 100 families in which from two to ten children died before reaching the age of six, or still larger numbers died under the age of fourteen. In one family five children died about the end of the third month with diarrhea, although breast-fed and well tended. They were all "nervous" children and a neuropathic tendency seemed to prevail in the children of most of these families. The children in each family succumbed with apparently the same syndrome. Knowledge of such occurrences suggests anti-syphilitic treatment of the parents in case of another pregnancy, if syphilis is suspected. When there is an unusual susceptibility to infections, general measures are useful in prophylaxis, but the physician is practically powerless in the cases where degeneracy is responsible for the lack of vitality.

Medizinische Klinik, Berlin

February 5, VII, No. 6, pp. 207-248

- 132 *Cystic Serous Meningitis of Posterior Cranial Fossa. (Meningitis cystica serosa der hinteren Schädelgrube.) R. Bing.
133 *Connection Between Civilization and Mental Disease. (Zusammenhang zwischen Zivilisation und Geisteskrankheiten.) A. Tamburini.
134 Zinc Ions in Local Treatment of Septic Corneal Ulcer. (Heilung des septischen Hornhautgeschwurs durch Zinkiontophorese.) Lubowski and P. W. Sachs-Mücke.
135 Antiperistalsis of Large Intestine in Man. W. Bloch.
136 Salvarsan in Office Practice. R. Lenzmann.
137 Treatment of Developmental Defects of the Brain with Pituitary Extract. (Erfolgreiche Anwendung von Hypophysispräparaten.) Bahrmann.
138 Physical Measures in Treatment of Asthma. Pescatore.
139 *Injection of Gelatin for Functional Test of Bone Marrow. (Funktionsprüfung des Knochenmarks am Menschen mittels Gelatininjektionen.) A. v. Decastello and A. Krjukoff.

132. Serous Meningitis of Posterior Cranial Fossa.—The patient in Bing's case was a man of 27, previously healthy, who developed symptoms suggesting compression of the cerebellum and adjacent organs, commencing with weakness of the legs, and gradually increasing during the year until the patient was in constant dread of falling. He also felt dizzy in walking, sitting and reclining except when he reclined on the left side. Occasionally he vomited without preceding nausea. There was no actual headache but a sensation of oppression at the base of the skull. Numbness in the left hand was another symptom, and during the last few weeks there had been some impairment of vision and hearing. The appetite was good, sleep restless, bowel functioning defective, and there was left facial paralysis, but the eye reflexes were unmodified. On the diagnosis of tumor in the left cranial fossa—possibly serous meningitis—the focus was exposed and a cystic ac-

cumulation of fluid found in the posterior fossa, adhesions walling it in perfectly. As the adhesions were divided the fluid escaped and all trouble was at an end, the patient promptly recovering and the symptoms gradually subsiding. Six months later some of the symptoms returned to a slight extent but under potassium iodid they partially subsided anew and the cure was finally completed by substituting for the iodid, tincture of nux vomica, and pushing the dose rapidly to 40 drops a day. Improvement kept pace with it, the patient soon being freed from all symptoms. There was no history of trauma or syphilis in this case but the patient had had at one time a bilateral middle ear affection which might have been responsible for the development of the adhesions. The experience with this case testifies, Bing thinks, in favor of operative treatment at once without wasting time on lumbar puncture which could not possibly have done any good as there was no apparent communication between the cyst and the spinal fluid, while there is always a possibility of serious damage from lumbar puncture with any tumor in the brain. The case further teaches, he declares, the inadvisability of wasting precious time with antisyphilitic measures; an old syphilitic may have a non-specific tumor in his brain. In a case recently reported by Oppenheim he had diagnosed a tumor in the cerebellopontine angle and advised immediate operation, but as the Wassermann reaction was positive, although there was no history or sign of syphilis, a course of mercurial treatment was instituted and transient benefit was realized; soon, however, recurring severe symptoms brought the patient to the operating table and a fibroma as large as a hen's egg was easily shelled out of the angle. The patient died five days later of cardiac paralysis.

133. Relation Between Civilization and Mental Disease.—Tamburini cites historical data to show that mental disease was common among ancient and historical peoples and is common among the less civilized at the present day. The progress of civilization has eradicated the epidemic forms of mental disease, while the greater attention and care now paid to the insane has apparently increased the proportion of the mentally unsound, but he is convinced that this increase is only apparent. Civilization is now confronted with the task of eradicating the causes which breed mental disease, and he pleads for concerted international action, collecting and comparing data and teaching physical and moral hygiene—science, practical pedagogics and legislation all working toward this end.

139. Gelatin Test of Bone-Marrow Functioning.—Subcutaneous injection of a little gelatin is followed by marked hyperleukocytosis if the bone marrow is capable of responding to stimuli, as Decastello and Krjukoff found in tests of forty-two patients. The findings are important both for diagnosis and prognosis in certain circumstances.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

February, XXXIII, No. 2, pp. 125-264

- 140 The Ovaries with Constitutional Anomalies. (Die weibliche Keimdrüse bei Anomalie der Konstitution.) J. Bartel and E. Herrmann.
- 141 Absence of One Ovary with Rudimentary Tube and Normally Developed Uterus. E. Sachs.
- 142 *Puerperal Inversion of the Uterus. F. Pachner.
- 143 Vaginal Cesarean Section in Abortion and Premature Delivery. (Sectio caesarea vaginalis als Methode der künstlichen Fehl- und Frühgeburt.) G. Klein.
- 144 Bacteriologic Study of the Blood in Puerperal Fever. M. Semon.
- 145 Case of Fatal Staphylococcus Aureus Hemolyticus Sepsis After Abortion. A. J. M. Lamers.
- 146 *Variations in Weight of New-Born Infants. (Ueber Gewichtsschwankungen Neugeborener mit besonderer Berücksichtigung der Resultate bei vierstündlichem Anlegen.) M. Heidemann.
- 147 Intra-Uterine Fracture of the Humerus. (Intrauterine in Pseudarthrose geheilte Humerusfraktur und Anencephalus.) T. Rosenthal.
- 148 Pyelitis in Pregnancy. S. Mirabeau.
- 149 Tuberculosis of the Female Urinary Apparatus. S. Mirabeau.
- 150 Chronic Intermittent Hydronephrosis in Women. S. Mirabeau.

142. Puerperal Inversion of the Uterus.—Pachner ascribes the inversion to relaxation of the muscular wall of the uterus, or of its lower segment. This view is sustained by the recurrence of the inversion at different deliveries, the peculiar thinness of the uterine wall in such cases, and the fact among others that inversion occurs more frequently at the first delivery and with younger women.

146. Variations in Weight of New-Born Infants.—In this communication from the Heidelberg Maternity, Heidemann states that he has made a practice during the last four years of having the infants nursed at intervals of four hours, that is, allowing only five feedings in twenty-four hours. This gives both mother and infant a chance to rest better, and systematic weighing of the children showed that they thrived unusually well under this arrangement. The nipples were less liable to crack with these long intervals, and working women found them much more convenient as the infant grew older.

Monatsschrift für Kinderheilkunde, Leipsic

IX, No. 10, pp. 549-592

- 151 *Influenzal Meningitis. G. Simon.
- 152 *Cardiospasm in Infants. C. Beck.
- 153 *Scarlatinal Thyroiditis. J. Bauer.

151. Influenzal Meningitis.—Simon reports two cases in previously healthy infants about eight months old. After a week of cough and fever, suppurative meningitis developed and influenza bacilli were found in the spinal fluid and pus in the cerebral ventricles, joints or middle ear. The primary focus was in the lung in one case and in a joint in another. He tabulates the details of forty-one somewhat similar cases he has found in the literature; thirty-three of the patients were under the age of 2 and 90 per cent. under 9. Only 10 per cent. recovered, including one woman of 33, two children about 8, and two infants, 9 and 14 months old respectively.

152. Cardiospasm in Infants.—Beck reports two cases in young infants causing uncontrollable vomiting; at first milk poured into the stomach through a tube was not vomited in one case. Later the cardia became impassible in both and the children were fed by the rectum for a time. Then under a little tincture of opium, feeding by the mouth was gradually resumed and there was no further trouble, the infants rapidly recuperating.

153. Scarlatinal Thyroiditis.—In Bauer's three cases there had been no tendency to goiter but the thyroid increased in size during the course of scarlet fever. It returned completely to normal size in one boy of 13 by the thirtieth day, but in another boy, traces of the swelling were still perceptible on the sixty-sixth day, as also in the third patient, a young woman, on the forty-third day. The thyroiditis in this case was evidently one of the primary manifestations. The scarlet fever had been of a mild type, with no other complications, in all.

Münchener medizinische Wochenschrift

February 7, LVIII, No. 6, pp. 289-336

- 154 Oxidation Processes in the Cells. O. Warburg.
- 155 Plastic Operation for Femoral Hernia. (Radikale Operationen des Schenkelbruches durch Faszienplastik.) M. Wilms.
- 156 *Artificially Induced Petechiae as Sign of Scarlet Fever. (Hautblutungen durch Stauung hervorgerufen als diagnostisches Hilfsmittel beim Scharlach.) C. Leede.
- 157 Acute Pustulous Exanthem in Brazil: White-Pox. (Weisse Pocken.) M. Rudolph.
- 158 Cutaneous Aphthae. (Dermatitis fibrinosa faciei.) E. Moro.
- 159 *Gastric Fever. A. Scheglmann.
- 160 Salvarsan in Syphilis. (Ueber 60 mit Salvarsan ambulatorisch behandelte Fälle.) E. Freund. (Klinische Prüfung des Dioxydiamidoarsenobenzol.) G. Treupel and A. Levi. Commenced in No. 5.
- 161 Glycerin as Part Vehicle for Salvarsan. (Zur Technik der Zubereitung der Salvarsanlösung zu Zwecken der intramuskulären Injektion.) B. Kozlowski.
- 162 Testing Vision in Examining Chauffeurs. (Das Sehorgan des Automobilführers.) G. Freytag.

156. The Tourniquet Sign of Scarlet Fever.—Leede has found that a slightly constricting band applied to the upper arm causes petechial bleedings below in case of the existence of scarlet fever. He has been applying this tourniquet sign in cases of suspected scarlet fever and obtained a positive response in all but 1 of the 200 patients tested; the single exception being a very fat girl, while a positive response was obtained only in one of the control cases—a syphilitic woman who proved to be free from scarlet fever. Nothing like the specific petechial spots in the bend of the elbow could be obtained in any other disease except that there was a slight tendency in this line in measles. In some cases the sign was positive the first day and the findings grew gradually less pronounced as the disease subsided, but it was still evident by the end of six weeks in some, and with hemorrhagic nephritis the sign was still positive by the fifteenth week.

The most convenient method of applying the constriction was with the Riva-Rocci cuff; the petechiae developed in from five to twenty minutes. [Compare with Abstract 47 in THE JOURNAL, Feb. 18, 1911, page 545.]

159. **Gastric Fever.**—Scheglmann during the last two summers in his rural practice has encountered a number of cases of what can only be styled gastric fever. The last epidemic embraced 140 cases; after three days of fever at 39.5 or 40 C. (about 103 and 104 F.) the fever gradually declined and by the end of two weeks the patients had entirely recovered. The onset was stormy, with a chill and intense persisting frontal headache, with vomiting during the first two or three days; the patients also complained of oppression in the chest, pain in the stomach and all the limbs and extreme prostration. When they were able to get up they staggered, and the digestive organs were extremely sensitive so that the slightest indiscretion in diet during the second week brought on the whole syndrome again. No complications were observed, the kidneys appearing to be intact. He regards influenza as excluded on account of the total absence of catarrhal symptoms, the upper air passages persisting normal throughout, and there being no sacral pain. But the main argument against the diagnosis of influenza is the fact that other members of the family were not affected. An epidemic of influenza in the summer is also a rarity. No one seemed to be affected except harvest workers. The agglutination test for typhoid and paratyphoid was always negative.

Wiener klinische Wochenschrift, Vienna

February 9, XXIV, No. 6, pp. 191-226

- 163 *Non-Destructive Action of Placenta Serum and Serum of Pregnant Women on Human Cancer Cells. R. Kraus and E. v. Graff.
164 Reciprocal Relations Between Inflammatory Processes in Appendix and Tubes. (Zur Frage der Wechselbeziehungen zwischen entzündlichen Erkrankungen des Processus vermiformis der Tuba Fallopi mit besonderer Berücksichtigung der Perforation des Wurmfortsatzes in die Tube.) I. I. Grekow.
165 Corporal Proportions of Cretins. A. Flinker.
166 Streptothrix Disease in Man. G. Gyorjevic.
167 Quarantine Studies. E. Wiener.

163. **Non-Destructive Action of Placenta Serum on Human Cancer Cells.**—The results of the research reported by Kraus and von Graff supplement the recent findings by others that under certain circumstances the human blood-serum loses the property of destroying carcinoma cells. Normal serum dissolves human and mouse cancer cells, while the serum of persons with cancer has lost this property, and Kraus and von Graff announce that the serum from the umbilical cord behaves in this respect like the serum from cancer patients. The blood-serum of pregnant women nearing term has the same property in a lesser degree. These facts seem to indicate that it must be the placenta which is responsible for the abnormal behavior of the pregnancy serum in respect to cancer cells and that the chemistry of metabolism is evidently involved in the phenomenon.

Zeitschrift für Urologie, Berlin

January, V, No. 1, pp. 1-80

- 168 *Atony of Bladder Without Obstruction or Signs of Organic Nervous Disturbances. J. W. Thomson Walker.
169 Simple Pyonephrosis. (Zur Kasuistik der geschlossenen Pyonephrosen.) E. Meyer.
170 Case of Addison's Disease in Connection with Urogenital Tuberculosis. A. Werner.

168. **Atony of the Bladder Without Obstruction or Organic Nervous Disease.**—Walker reports nine cases in which nothing could be found to explain the insufficient expulsive power of the bladder. The age of the patients ranged from 22 to 59; two had had syphilis, four gonorrhea. The disturbance had come on slowly and gradually in all the cases, and in only one had there been acute retention at any time. The bladder was chronically dilated in four cases, but evacuation was finally complete, while in the others there was from 100 to 300 gm. of residual urine. In every case the bladder showed pronounced trabeculae, but they were distributed differently from those observed in cases of obstruction, the side walls and apex being mostly involved. He regards the trabeculae as secondary to the atrophy, and cites two additional cases in which the atony had progressed until the catheter had to be used constantly.

He has been able to find only a few similar cases on record; he cites the details of Albarran and Nogues' cases in men of 27 and 28.

Zentralblatt für Chirurgie, Leipsic

February 11, XXXVIII, No. 6, pp. 185-224

- 171 *Modified Vein Anesthesia. A. Brüning.
172 *Plastic Closure of Fistulas Opening Out of Internal Organs. Abrashanoff.
173 *Chronic Catarrh of Breast. (Chronischer Katarrh der weiblichen Brustdrüse.) W. Mintz.

171. **Modified Technic for Vein Anesthesia.**—Brüning avoids the drawbacks of expulsion of blood from the entire limb—bloodlessness is an imperative condition for the success of vein anesthesia—by restricting the induced anemia to a comparatively narrow segment of the limb. This is accomplished by raising the limb for a time to expel the blood by force of gravity; then a constricting band is applied between the lesion and the trunk. Commencing at this band, the blood is expelled toward the trunk as by the ordinary technic, and then a second constricting band is applied above. By this means it is possible to obtain a bloodless zone of from 10 to 15 cm. wide between the lesion and the trunk, and here the anesthetic is injected to deaden the nerve trunks innervating the field of operation below. By the modification described, both constricting bands are applied above the field of operation leaving the lesion undisturbed until ready to operate. [The technic for vein anesthesia was described in THE JOURNAL, May 1, 1909, page 1466.]

172. **Fascia Plug for Fistulas.**—Abrashanoff cuts a strip of fascia, twists it around and pushes it down to the bottom of the fistula, holding it in place with a few sutures. It speedily grows to the freshened walls of the fistula and the spaces left are soon filled with regenerating tissues. He has applied the method in three cases with ideal results to date, over nine months in one case. The theoretical objections that might be made to the procedure do not seem to materialize in practice.

173. **Chronic Catarrh of Mammary Gland.**—Mintz applies this term for want of a better to a chronic secretion of yellow serum from one breast, persisting for from months up to several years, in the eight cases of the kind which he has encountered in the last six years at Moscow in women 30 years old and upward. The interval since the last pregnancy was nine or more years. Some had nursed and others had not nursed their last child. No subjective symptoms or appreciable changes in the breast could be discovered in six cases. In the seventh a carcinoma developed finally in the breast affected. In the eighth case an adenoma developed as the abnormal secretion became apparent, but the secretion persisted after removal of the tumor, and a superficial mastitis developed the sixth year. In the fifth year another adenoma developed in the other breast. He declares that the anomaly has nothing to do with Paget's disease of the nipple. In one case the secretion had persisted for two years, when it ceased after a course of potassium iodid, and there has been no recurrence during the three years to date. The secretion did not seem to have any connection with menstruation or the menopause. In the woman with carcinoma the secretion became hemorrhagic after three years as the tumor developed. He is inclined to explain the trouble as transudation from connective tissue accompanying a desquamating process in the acini, but he has not been able to examine a specimen anatomically. The affection has certain points in common with chronic cystic mastitis, of which he has encountered a special form, the mammary gland being studded with cysts with connective tissue walls, as he found in an operative case. He described this type in 1899, the subepithelial proliferation of connective tissue causing the casting off of the acinus epithelium, the latter forming, with the secretion from the granulations, the contents of the cysts.

Zentralblatt für Gynäkologie, Leipsic

February 11, XXXV, No. 6, pp. 225-256

- 174 *Allowing Patients to Get Up Early After Operations and Delivery. (Das Frühaufstehen der Wöchnerinnen und Operierten und die hierbei beobachteten Todesfälle.) O. Aichel.
175 Technic of Suprasymphysal Cesarean Section. E. Frank.
176 Rubber Cap to Draw Over Cancerous Uterus During Hysterectomy. (Vorschlag zur Verhütung von Impfmastasen im Paravaginalschnitt.) K. Czerwenka.
177 Hypnosis. ("Suggestionstnarkose und Hypnose.") A. Rieck.

174. **Allowing Patients to Get Up Early After Laparotomies and Deliveries.**—Aichel reviews the cases on record in which thrombosis developed in patients allowed to get up on the second or third day and analyzes the circumstances to determine whether this was responsible for the fatal outcome which has been reported in six cases. His conclusions are that this is possible only for two of the cases. Fromme's and Scherer's, and closer analysis of these fails to demonstrate that thrombosis and embolism are more liable to occur when patients are allowed to leave the bed earlier. The method has the great advantage that when patients are allowed to get up earlier they are kept under closer supervision than formerly, and this goes a long way, he remarks, toward prevention of sudden fatalities in parturients and patients after operations. Scherer has stated in regard to his case that it was his impression that the outcome of the thrombosis might have been more favorable if the patient had stayed quietly in bed, but Aichel comments that although this may be true, it is impossible to prove it.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 31, XXXII, No. 14, pp. 147-154

178 Operative Treatment of Relics of Inflammation in Peritoneal Cavity. (Laparotomia per placche adhesive infiammatorie nella cavità peritoneale.) N. Federici.

February 2, No. 15, pp. 155-162

179 Varices in Round Ligament During Pregnancy Simulating Inguinal Hernia. I. Brnchi.

February 5, No. 16, pp. 163-178

180 *Relations Between the Kidneys and Suprarenals in Chronic Nephritis. F. d'Alessandro.

180. **The Suprarenals in Chronic Nephritis.**—D'Alessandro analyzes the clinical syndrome in eleven cases with necropsy findings in five, in which chronic nephritis was accompanied by lesions in the suprarenals. The latter, however, proved to be only such as are found with ordinary infectious diseases or in the aged, there being nothing to sustain the assumption that chronic nephritis induces a compensating hyperfunctioning of the suprarenals.

Policlinico, Rome

January, XVIII, Surgical Section No. 1, pp. 1-48

181 Surgery of Blood-Vessels. (Suture, anastomosi artero-venose e trapianti vasali. Studio sperimentale.) A. Curcio.

182 Frambesia in Brazil. (Nota sopra alcune affezioni framboesiche osservate in Brasile.) A. Splendore.

Riforma Medica, Naples

January 30, XXVII, No. 5, pp. 113-140

183 *Wassermann Reaction in Malaria. (La prova della deviazione del complemento della malaria.) F. Valerio.

184 Diabetes Insipidus. T. Silvestri. Commenced in No. 4.

185 Blood Findings in Malta Fever. (Ricerche ematologiche nelle snppnrazioni da micrococco di Brnce.) F. Addari.

February 6, No. 6, pp. 141-168

186 Insufficiency of Several Ductless Glands. (Caso di insufficienza plnriglandolare.) A. Murri. Commenced in No. 4.

187 *Simplified Technic for the Wassermann Reaction. (Una notevole semplificazione di tecnica per la prova della fissazione del complemento.) L. Ferrannini.

188 Study of Coagulation of Blood. (Il tempo di coagulazione del sangue: Sostanze coagnanti e decoagnanti.) C. Mantelli.

183. **Wassermann Reaction in Malaria.**—Valerio found a positive reaction in 40 per cent. of a number of cases of recent malaria, free from syphilis. In advanced malaria and in old cases in which no parasites could be found in the blood the reaction was negative.

187. **Improved Technic for the Wassermann Reaction.**—Ferrannini writes from the medical clinic of the university of Naples, in charge of Professor Rummo, to state that it is possible to use in fixation of complement the blood of eels. Eel serum has long been known to have remarkable hemolytic powers. It was with the serum of eels that the well-known work on hemolysins and antihemolysins was done by Camus, Gley and Kossel in 1898 and Tchistowitch in 1899. The eel serum thus provides the hemolytic amboceptor for the fixation of complement test. From an eel weighing 200 gm., by cutting off its tail, enough blood can be obtained to yield 2 or 3 c.c. of serum after centrifugation or spontaneous clotting. This serum is especially hemolytic for rabbit red corpuscles. He has been making extensive comparative tests with the original Wassermann technic and with the eel serum used in place

of the prepared hemolytic serum from rabbits—which it takes three or four weeks to obtain by repeated treatment of the rabbit. The findings were parallel in the long series of parallel tests and he thinks that as eels are readily procured and the serum does not lose its hemolytic property for some time after death, this modification of the technic will prove a welcome simplification.

Hygiea, Stockholm

January, LXXIII, No. 1, pp. 1-128

189 *Spondylarthritis. (Studier öfver reumatiska och renmatoida sjukdomar. I.) I. Hedenius.

190 Elimination of Mercury Through the Kidneys. (Om kvicksilfvereliminationen genom njurarna vid intramuskulära injektioner af merkuriololja.) M. Möller and A. Blomquist.

189. **Spondylarthritis.**—Hedenius gives the details of seventeen cases of spondylarthritis, his analysis convincing him that there are two well-defined forms of arthritis of the spine which have frequently been confused in the past. The first is of an infectious-toxic nature generally but it can be likewise induced by trauma, severe or slight but often repeated. This form, which he calls ankylopoetic or adhesive spondylarthritis, usually attacks individuals in early middle age. The primary lesion is the ankylosis of the vertebræ as described by Bechterew, Strümpell, Marie and others. The other form, deforming spondylarthritis, has been described for centuries. It is not of infectious origin, so far as known to date is not accompanied by fever, and in most cases is localized in the lower segments of the spine. The trouble is generally stationary and displays little tendency to spread upward. Ankylosis of the spinal articulations is not the primary but a secondary phenomenon in this type; the pathologic process is often symptomless. Of course transitional forms may be frequently observed.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

CESAREAN SECTION IN GREAT BRITAIN AND IRELAND. With Tables of 1,282 Cases of Cesarean Section by over 100 Living Obstetricians and Gynecologists in Great Britain and Ireland. By Amand Routh, M.D. (Lond.), F.R.C.P. (Lond), Obstetric Physician to Charing Cross Hospital, London. Being a Report on the Subject read at the V-me Congrès International d'Obstétrique et de Gynécologie at St. Petersburg in September, 1910. Cloth. Price, 5 shillings net. Pp. 233. London: Sherratt & Hughes, 34 Cross Street, Manchester, 1911.

CROWN-GALL OF PLANTS: ITS CAUSE AND REMEDY. By Erwin F. Smith, Pathologist in Charge of Laboratory of Plant Pathology. Nellie A. Brown, Scientific Assistant, and C. O. Townsend, Formerly Pathologist in Charge of Sugar-Beet Investigations. Bull. 213, Bureau of Plant Industry. U. S. Dept. Agric. issued Feb. 28, 1911. Paper. Pp. 215, with illustrations. Washington: Government Printing Office, 1911.

MANUAL OF CYSTOSCOPY. By J. Bentley Squier, M.D., Professor of Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital, and Henry G. Bugbee, M.D., Instructor in Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital. Morocco. Price, \$3 net. Pp. 117, with illustrations. New York: Paul B. Hoeber, 1911.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume XXVIII. Edited by Archibald MacLaren, M.D., Recorder of the Association. Printed for the Association. Robert G. LeConte, M.D., Secretary, 1530 Locust St., Philadelphia. Paper. Pp. 664, with illustrations. For sale by William J. Dornan, Philadelphia, 1910.

A MANUAL OF GYNECOLOGY. By Thomas Watts Eden, M.D., C.M., Edin., F.R.C.P., Lond., Obstetric Physician with Charge of Out-Patients, and Lecturer on Midwifery and Gynecology, Charing Cross Hospital. Cloth. Price, \$5 net. Pp. 632, with 272 illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

BIENNIAL REPORT OF THE NEBRASKA ORTHOPEDIC HOSPITAL, LINCOLN, NEB. For Period Ending Nov. 30, 1910. To Hon Ashton C. Shallenberger, Governor, and Honorable Board of Public Lands and Buildings. Paper. Pp. 40, with illustrations. J. P. Lord, Superintendent.

DIE ERWEITERTE ABDOMINALE OPERATION BEI CARCINOMA COLLI UTERI. (Auf Grund von 500 Fällen.) Von Dr. E. Wertheim in Vienna. Paper. Price, \$3.65. Pp. 203, with illustrations. Vienna: Urban & Schwarzenberg, 1911.

TEXT-BOOK OF MASSAGE. By L. L. Despard, Member and Examiner Incorporated Society of Trained Masseuses. Cloth. Price, \$4 net. Pp. 290, with 204 illustrations. New York: Oxford University Press, 1911.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVI, No. 12

CHICAGO, ILLINOIS

MARCH 25, 1911

THE AUTONOMIC MANIFESTATION AND PERIPHERAL CONTROL OF PAIN ORIGINATING IN THE UTERUS AND ADNEXA*

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CINCINNATI

GENERALITIES RELATIVE TO THE AUTONOMIC NERVOUS PHENOMENA

The word "autonomic" as applied to the manifestations of pain of visceral origin, signifies the expression of that pain in some superficial muscle or muscles rather than in the viscus in which it has its initial causation. The phenomena clearly imply the existence and coöperation of three distinct factors, namely:

1. Some more or less profound disturbances, functional or organic, of certain of the viscera.
2. The transmission of a painful impulse, thus originated, over or through what Head¹ has designated as the autonomic nervous system.
3. The registration of that impulse and its expression as pain in the muscle or muscles to which the respective external or peripheral autonomic filaments (muscle nerves) are distributed.

It is through this mechanism and by the coöperation of these factors, according not only to Head,¹ but to Ross² and Mackenzie³ that the phenomenon of muscular rigidity occurs autonomically, for example, over an inflamed appendix vermiformis or over an impacted gall-bladder, or over the seat of an intususception.

Through this same mechanism in each of the instances given, and for manifest reasons, the intensity of the pain and of the muscular rigidity are relative each to the other, while both are relative to the intensity of the causative change in the viscera.

The peripheral control of pain thus originating and thus manifesting itself implies either one of two hypotheses. The first is that if an algetic impulse can be telegraphed, as it were, from viscus to muscle, it would seem possible to telegraph an analgetic impulse back over the same wires, i. e., from muscle to viscus. The second hypothesis is that if the functions of the external autonomic filaments can be inhibited the algetic impulse cannot reach the muscles and must consequently fail of expression as pain.

Whether an algetic impulse originating in a given viscus *per se*, or whether, after transmission through the

autonomic nerve filaments, it is expressed exclusively in or through its corresponding muscles, is a theoretical problem, the solution of which is quite apart from my present purpose.

AUTONOMIC AND OTHER NERVOUS RELATIONS OF THE UTERUS AND ADNEXA

The application of these general principles to conditions originating within the pelvis necessarily involves at least a brief consideration of the autonomic relations of the intrapelvic organs.

I find that the more convenient way to present this subject is to divide the genital organs into three zones, viz.:

1. The first or upper genital zone, consisting of the fundus of the uterus, the Fallopian tubes and the ovaries. To this zone are supplied:
 - A. Sympathetic branches from the plexus hypogastricus through the plexus arteriæ ovaricæ in the broad ligaments.
 - B. Sensory branches from the twelfth dorsal and from the first and second lumbar nerves.
 - C. Autonomic filaments afferent from the zone indicated to the spinal centers.

These filaments occur coincidently with the sympathetic and reach the spinal cord through the communicating branches in the lower dorsal and upper lumbar regions. Their terminal distributions are to the intertransversæ and to the quadratus lumborum and to the two psoas muscles.

2. The second or middle genital zone, consisting of the cervix uteri, to which are supplied:

- A. Sympathetic branches from the lower ganglia.
- B. Sensory branches from the second, third and fourth sacral nerves.
- C. Autonomic filaments efferent from the cervix to the spinal centers through (a), the communicating branches of the sympathetic, (b), the second, third and fourth sacral, distributed to the two glutei muscles, to the quadratus femoris, the coccygeus, and the levator ani muscles.

3. The third or lower genital zone, consisting of the external genitalia including the vagina, is not considered in this connection.

THE RELATION OF AUTONOMIC NERVOUS PHENOMENA TO THE DIAGNOSIS OF INTRAPELVIC CONDITIONS

The nervous connections of the uterus and adnexa just given, taken in connection with the autonomic function as outlined by Head,¹ have an obviously important relation to diagnosis. Familiar phenomena of pain have a more definite meaning when interpreted in the light of these facts

* Read before the Fifth International Periodical Congress of Obstetrics and Gynecology, St. Petersburg, Russia, Sept. 22-28, 1910.

1. Head, Henry: Brain, 1893, Part 1, p. 1.
2. Ross, James: Brain, 1888, x, 333.
3. Mackenzie, James: Brain, 1893, xxi, 321.

I have been able in this way to associate pain in the costo-iliac interval and in areas representing the distribution of the posterior ramus of the twelfth dorsal nerve with conditions in the upper genital zone as follows, viz., (a) a small submucous nodule in the fundus of the uterus, (b) adhesions of the fundus uteri in the cul-de-sac of Douglas, (c) fixation (hysteropexy) of the fundus uteri to the abdominal wall (an operation never done by myself), (d) premenstrual engorgement of the uterus and ovaries, (e) cirrhosis with follicular degeneration of the ovaries, (f) distention of occluded Fallopian tubes, and (g) ectopic pregnancy.

I have likewise been able to demonstrate the relationship of pain in the ileogluteal area, supplied by the posterior rami of the second, third and fourth sacral nerves, with conditions in the middle genital zone, chief among which are the following, viz., (a) painful cicatrix of the cervix, (b) cervical erosion, (c) intramural myomata of the cervix and (d) cystic Nabothian follicles.

INTRAPELVIC CONDITIONS CAUSING AUTONOMIC MANIFESTATIONS OF PAIN

From the observations just recorded and from a general survey of the subject I am impressed with the probability that, in the majority of instances, more or less definite autonomic manifestations of pain will be found in conditions as follows, viz.:

1. In the uterus: malformations; certain new growths, both hyperplastic and inflammatory; certain premenstrual congestions; mechanical occlusions; displacements; infections.

2. In the Fallopian tubes: infections; occlusions with distensions; ectopic pregnancy.

3. In the ovaries: displacements; pressure from superimposed viscera; infections; tunicae adventitiæ; adhesions; follicular degenerations; dermoids.

4. In the cervix: cicatrices; erosions; infections; distortions; neoplasms.

5. In pregnancy, complicated with neoplasms or neurasthenia or both.

6. In parturition, in which, ordinarily, the autonomic manifestations of pain shift from the upper to the lower (superficial autonomic) zones coincidently with the progress of the labor.

THE PERIPHERAL CONTROL OF AUTONOMIC PAIN OF INTRAPELVIC ORIGIN

If, from what I have already presented, we are to assume that pain originating in the uterus or adnexa is not pain until it is registered in the form of tonic contraction of the autonomically associated muscle or muscles, it would seem that inhibition of the autonomic function of the respective muscle or muscles would inhibit the manifestation of the pain. I have, in fact, successfully reduced this postulate to practice in a sufficient number of instances to convince me of its general tenability. It is accomplished, in brief, by deep analgetic injections into the substance of the affected muscles themselves. Whether the results depend on the analgetic agent or agents used in these injections, or on the water used, or whether both elements are of importance may will be taken up by the experimental pharmacologist.

I wish here to record, however, that, something like forty years ago the late Prof. C. G. Comegys of Cincinnati successfully inaugurated the practice of treating lumbago by injections of distilled water into the substance of the quadratus lumborum muscle. The prac-

tice is yet kept up with uniform success by my colleague, Prof. F. W. Langdon⁴ of the University of Cincinnati with whom, in these cases, aquapuncture is a matter of routine in his wards. In later years, following the introduction of cocain and its congeries of analgetic agents, and especially since the excellent work of Schleich⁵ some fifteen years ago, there has been a tendency to rely on the injection of these agents rather than on the infiltration of water for the inhibition of nervous and muscular irritability.

It would seem, however, that in such conditions as lumbago, as shown by Langdon,⁴ and in sciatica, as shown by Lange,⁶ Sicard,⁷ Hecht⁸ and other neurologists, there is an increasing tendency to recognize the water as the relatively more important analgetic element of the solution. The three last-named authors are inclined to the use of water in the form of normal salt solution because of its assumed greater isotonicity. Then, too, we must recognize that another and a chief object that they have in using perineural infiltration of large quantities of water in sciatica is mechanically to break up inflammatory connections between the nerve and adjacent structures. Langdon insists, however, that it seems plausible to him "that distilled water would be effective and probably in smaller quantity since the 'affinity' of the nerve tissues (containing salts) would be greater, perhaps, for pure water"—a consideration which offers a rational explanation of his success in the treatment of lumbago by aquapuncture. But without going into this aspect of the subject, and without assuming for a moment that either lumbago or sciatica is autonomic in cause or character—although the former may be—both of these conditions present the phenomenon of muscular irritability and, in that particular, become important criteria for the control of muscular irritability from whatever cause it may occur.

THE RÔLE OF THE AUTONOMIC NERVES IN THE TREATMENT OF VISCERAL PAIN

It seemed to me,⁹ after some study of this question, that if the autonomic nerves conveyed an irritating impulse from affected viscera to the surface, those nerves might be employed for telegraphing a corrective impulse back from the surface to the affected viscera. In other words, if, as Nothnagel and Lennander¹⁰ insist, visceral pain is really pain manifested chiefly in the phenomenon of muscular hyperalgesia, why would not the inhibition of the muscular hyperalgesia inhibit in turn the visceral pain? Acting on this theory I promptly had an opportunity to put it to test. I had done a gastro-enterostomy to control pain and rigidity—epigastric hyperalgesia—following which I had applied heat to relax the muscles and given morphin with which to benumb the sensorium. Thirty-six hours of this treatment had failed to bring relief and the patient was crying to be reanesthetized. I therefore injected into the belly of the rectus abdominis muscles at several points on either side of the incision a solution of cocain and morphin in the form of a Schleich solution. Within twenty minutes the patient dropped into a comfortable sleep

4. Langdon: Personal letter to the author.

5. Schleich: *Schmerzlose Operationen*, 1895.

6. Lange (Leipsic): *Deutsch. med. Wehnsehr.*, 1908, No. 6.

7. Sicard: Quoted by Hecht: *The Treatment of Sciatica by Deep Perineural Infiltrating Injections of Salt Solution*, *THE JOURNAL A. M. A.*, Feb. 6, 1909, p. 444.

8. Hecht, D'Orsay: *THE JOURNAL A. M. A.*, Feb. 6, 1909, p. 444.

9. Reed: *New York Med. Jour.*, March 5, 1910.

10. Lennander, K. G.: *Abdominal Pain, Especially Pain in Connection with Ileus*, *THE JOURNAL A. M. A.*, Sept. 7, 1907, p. 836.

and from that time on had no recurrence of epigastric hyperalgesia. The pain following hysterectomies, oophorectomies, and other uncomfortable operations on the uterus and adnexa have been similarly relieved by deep muscular injections into the hyperalgetic areas. In a number of cases I have had entirely satisfactory results from the use of the cocain alone, and latterly with novocain, thus showing that it is sufficient to overcome what I look on as entirely normal but none the less painful muscular irritability, and to do so without hypnotics addressed to the general consciousness. Even in some instances, as in a case of a firm intra-uterine pack following a curettage, in which the superficial hyperalgesias were also present, the inhibition of the muscular irritability within the involved superficial areas was followed also by cessation of the pain referred by the patient to the uterine. From this experience, interpreted in the light of the facts which I have presented, I arrive at the object that I had in preparing this paper, and that was to emphasize, by brief summary, the treatment of various pains of visceral origin.

TREATMENT OF POST-OPERATIVE, PARTURIENT AND OTHER PAIN OF VISCERAL ORIGIN

1. Visceral pain, so far as the abdomen, pelvis and thorax are concerned, is expressed chiefly but not exclusively in the autonomic algetic areas of the protective walls covering the respective viscera, such algetic areas corresponding in extent with the peripheral distribution of the autonomic nerves coincidently with the peripheral distribution of the respective spinal nerves in the muscles and subserous connective tissue.

2. These distributions can generally be determined clinically by determining the area of partial hyperalgesia.

3. The pain itself, consisting chiefly of hyperexcitation of muscle irritability, can be partially and, as a rule, entirely, inhibited by inhibiting the muscle sensibility in the hyperalgetic areas.

4. The same principle applies to the peripheral control of pain originating in the parturient uterus, with the difference that the infiltration of succeeding muscle zones must be practiced with the corresponding advance of the delivery.

METHOD OF TREATMENT

My method of treatment, briefly stated, is as follows:

1. Have prepared a standard analgetic and local anesthetic mixture as follows:

	gm. or c.c.
Morphin hydrochlorid	0|01
Novocain	0|04
Scopolamin	0|015
Normal salt solution	1|

This represents a single dose which, before administration, is further diluted with physiologic salt solution to permit of its distribution by numerous deep punctures with an ordinary hypodermic needle into the hyperalgetic areas.

2. For analgesia, after thoroughly cleansing the integument, all of the mixture is injected into the muscular layer, several punctures being employed and care being taken to make them at points that approximately define the circumference of the hyperalgetic area. The analgetic effects will be realized within from five to ten minutes, and in consequence of the presence of the scopolamin, will be continued often from six to eight hours, while in some instances they will be permanent.

3. For local anesthesia, the same solution is used in the same way, with the exception that it is discharged into the subcutaneous connective tissue at points that approximately define the circumference of the area that it is desired to anesthetize. The sensibility will disappear in from five to

eight minutes and will remain absent for a period varying from an hour to three hours.

4. The infiltration treatment practiced by Schleisinger, Hecht and others in sciatica involves the injection of large volumes of the solution, thus, (a) 10 to 20 c.c. of the normal salt solution reduced to zero (Centigrade); (b) 80 to 100 c.c. of normal salt solution at the temperature of the body; (c) 60 to 120 c.c. of beta-eucain solution at the temperature of the body. Langdon's method of treatment by pure aqueous infiltration involves the use of smaller volumes of fluid.

DISCLAIMER

Now that I have presented briefly this phase of the manifestation and control of visceral pain, and in view of the tendency to give a wider scope than is intended to a single idea, I wish, in conclusion, to make a few points clear. In the first place (1) the details of the autonomic phenomena are only beginning to be understood; (2) while I believe that these phenomena when once understood may be classed among the clinical constants, I do not believe that they can have a significance that will justify failure to consider all other diagnostic factors; (3) and I recognize the possibility and, under certain obvious circumstances, the desirability of temporary control of pain by the method I have indicated. I do not recognize the possibility that it can ever supplant the rational curative method which always implies the removal of the cause for the cure of the effect.

THE OPEN TREATMENT OF FRACTURES

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It is admitted that a large proportion of fractures can be successfully treated by manual reduction and by the ordinary external appliances, designed to retain the fragments in place; but we are all familiar with the difficulty of securing and maintaining perfect reduction by these methods. Further, we know now that in many cases in which we have felt sure of having secured a satisfactory reduction, a subsequent radiograph has too frequently proved the error of our conclusions, and shaken our confidence in the time-honored tests of mensuration and palpation. Particularly is this true in fractures of the femur and humerus, in which we have to contend with a large amount of surrounding soft tissues, and especially when the fracture is oblique or comminuted. It is safe to venture the statement that in such cases an anatomic reduction is seldom, if ever, accomplished by the closed method; and if accomplished, it is next to the impossible to retain the fragments in position.

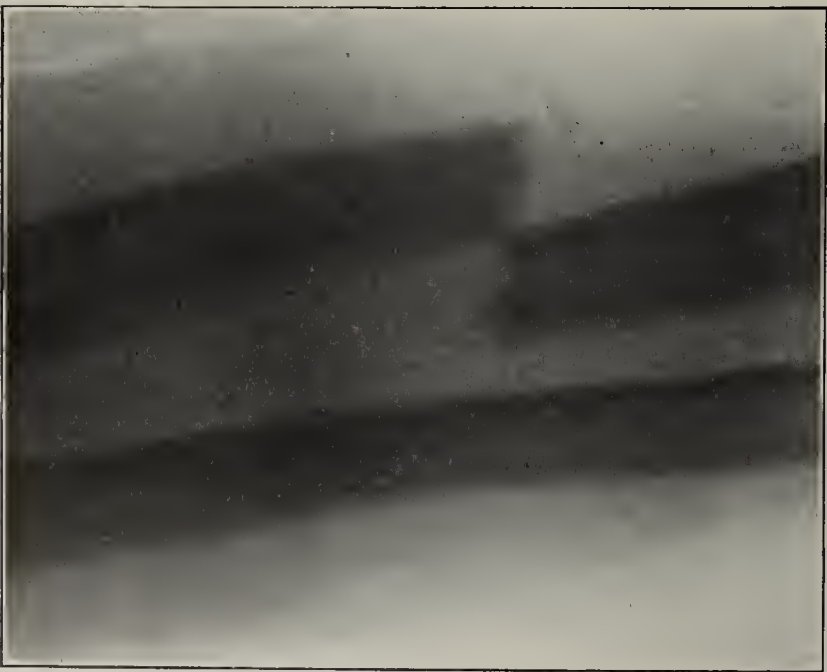
The recognition of these facts has led surgeons to resort to the apparently more radical procedure of the open treatment, which renders reduction comparatively simple and makes it possible to apply one of the many mechanical devices intended to retain the fragments in position. These devices are numerous, as the archives of surgery give evidence; but they may for practical consideration be divided into two classes, viz., those to be removed after repair of the fracture, and those to be left *in situ*.

The former have the apparent advantage of leaving no foreign body permanently imbedded in the tissues. The danger of trouble from leaving an aseptic metallic substance at the seat of the fracture has been greatly overestimated, however, and is not to be compared with

the increased danger of infection common to all devices designed for removal after union has been established. Further, it is a physical impossibility to secure perfect immobility with any of this class of appliances, on account of the necessary distance of the fixation bar from points of application to the fragments. Their external portion makes dressings more difficult, and, if the limb is accidentally harshly touched, causes the patient pain with more or less disturbance of the fragments.

Of the latter class, devices designed to be left *in situ*, none is to be compared with the steel plate devised by Mr. Arbuthnot Lane in ease of application, the imme-

until the tissues have recovered somewhat from the devitalizing effect of the traumatism and attained a certain degree of resistance to infection. The selection of the proper drill for the size of the screw is important. A drill which will make a hole just large enough to allow the screw to be driven without splitting the bone gives the best results. It is not necessary, however, to have the hole so small as to make it difficult to drive the screw "home" with the ordinary screw-driver. By experimenting on a fresh beef-bone one can easily select



Figs. 1 and 2.—Compound infected fracture of radius and ulna, with displacement of the lower fragment of the radius; the bones are shown from two different positions (Case 1).

diate perfect immobilization of the fragments and their satisfactory retention in position. They seldom cause any irritation, and, if it becomes necessary to remove them, this is not difficult.

In using these plates there are several points which are worthy of consideration. Those of scrupulous asepsis and careful handling of the soft tissues are so well recognized as hardly necessary to be mentioned. Nothing but the judgment of the operator and the special features of the individual case can determine the best time to operate. It is generally better to wait, however,



Figs. 3 and 4.—Two views of fractures shown in Figure 1 after treatment by Lane's plates, showing perfect adjustment and alignment of the fractures. The dimness of the plates is due to their having been made of aluminum.

the drill adapted to the screws to be used, which should have a "wood" thread with medium chamfer. The retention of the fragments in position while the operator is drilling the first two holes is not always an easy task for the assistant, and the special forceps designed by Mr. Lane for holding the fragments is undoubtedly superior to the ordinary forceps, although one can get along very well with the latter. In my judgment, a fair trial of the open treatment of properly selected cases of fracture will verify the following conclusions:



Fig. 5.—Fracture of left femur at middle of lower third with the usual backward displacement of the upper end of the lower fragment (Case 2). Reduction was thought to have been accomplished, but this conclusion was erroneous, as is shown by the radiograph.



Fig. 6.—Reduction, by open operation and the use of the plate, of fracture shown in Figure 5.



Fig. 7.—Fracture of the left humerus five inches above elbow involving the musculospiral groove, with marked forward displacement of the lower fragment (Case 3).

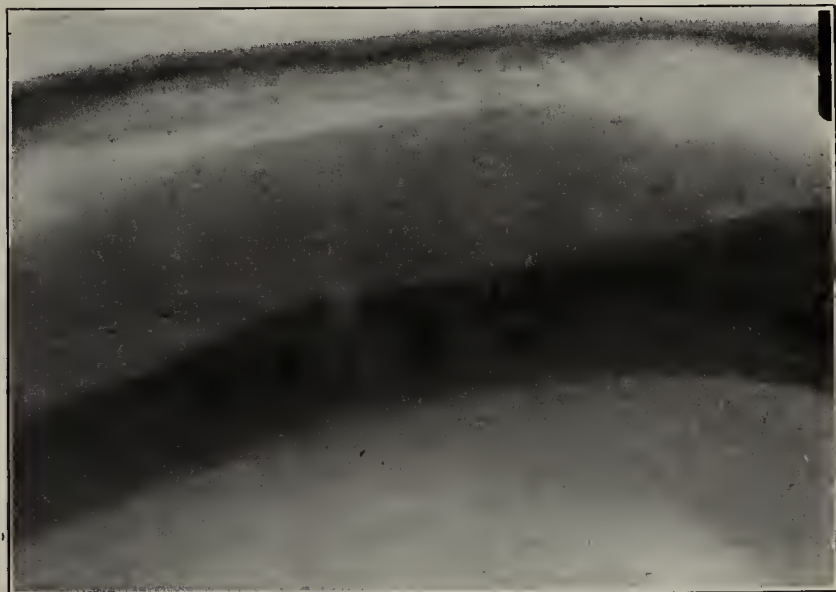


Fig. 8.—Reduction of the fracture shown in Figure 7, by the open method; alignment not perfect, but improved by splints and compresses.



Fig. 9.—Fracture of upper third of left femur. Three unsuccessful attempts were made to reduce this fracture by the closed method (Case 4).



Fig. 10.—Reduction, by open method, of fracture shown in Figure 9, showing perfect alignment.

1. The open treatment of fractures insures practically anatomic reduction.
2. We have overestimated the danger of making a compound out of a simple fracture.
3. The Lane plate is the simplest and most efficient fixation device yet designed.
4. It insures immediate immobilization, which in turn means rapid repair and reduction of pain to a minimum.



Fig. 11.—Comminuted fracture of left humerus with marked displacement and hematoma in axilla and on chest (Case 5).



Fig. 12.—Reduction, by open method, in case shown in Figure 11, some fragments of bone being removed, as shown in the radiograph.

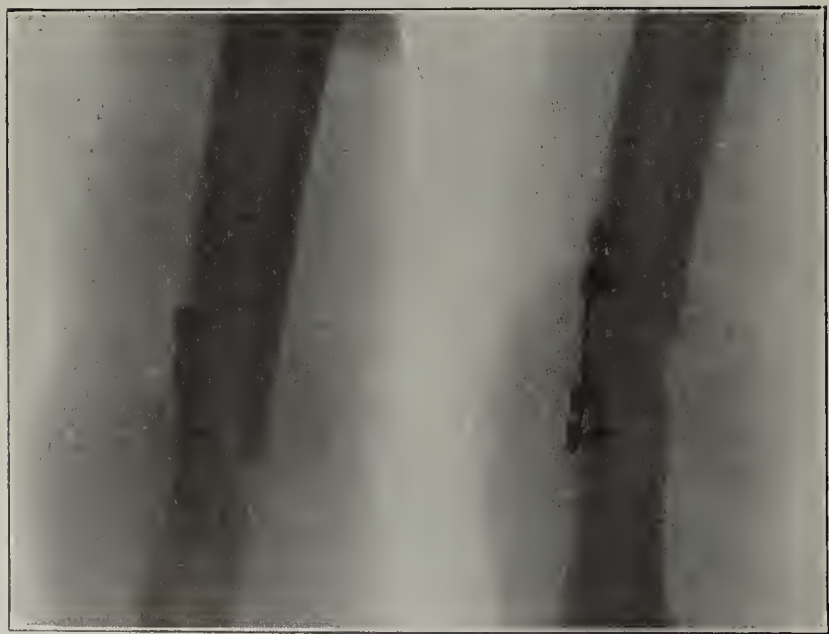


Fig. 13.—Compound, comminuted fracture of the left humerus with crushing of the soft parts, caused by being run over by a loaded wagon (Case 6). Fragments of bone were removed and the fracture reduced and held in place by the bone plates. The wound healed without infection.

5. Its application is easier and requires less mutilation and smaller incision than the use of wire.
6. It is a great aid in the management of compound infected fractures.
7. Direct mechanical fixation of fractures greatly simplifies after-treatment.

8. The *x*-ray has shaken our confidence in manual reduction, and will force us to more accurate methods. In support of these conclusions I wish to report six cases in which operation was done this year:

CASE 1.—Man, aged 34. Compound infected fracture of left radius, with inward displacement of lower fragment and fracture of ulna without displacement (Figs. 1 and 2). Arm, forearm and hand were greatly swollen from infection of a lacerated wound over the seat of the fracture, which prevented

any splinting. The limb was bound in pillows for ten days and the wound infection treated with moist antiseptic dressings. Three or four days prior to operation a 10 per cent. balsam of Peru ointment was used. At time of operation the granulating wound was scrubbed with gauze and Harrington's solution until all granulations were removed. The wound was closed entirely, except the space occupied by a small cigarette drain, which was removed two days afterward. Union by first intention was obtained. The result as to reduction is shown in the radiographs (Figs. 3 and 4).

CASE 2.—Woman, aged 49. Fracture of left femur at middle of lower third, with the usual backward displacement of upper end of lower fragment (Fig. 5). Reduction was attempted and thought to be satisfactory. Radiograph proved this conclusion to be erroneous, or there was subsequent displacement. Considerable difficulty was experienced at the operation to accomplish reduction. After application of plate convalescence was uneventful. The incision healed by first intention. The patient walked on the limb nine weeks after operation, and measurement shows no shortening (Fig. 6).

CASE 3.—Man, aged 44. Fracture of left humerus about five inches above the elbow, involving the musculospiral groove. Several attempts were made at reduction, with and without anesthesia. Radiographs revealed marked forward displacement of the upper end of the lower fragment (Fig. 7). At operation the musculospiral nerve was fixed in the soft tissues by catgut sutures. Convalescence was uneventful. Union of operation wound took place by first intention. Alignment in this case was not as good as it should have been, but was improved by splints and compresses (Fig. 8).

CASE 4.—Boy, aged 13. Fracture of upper third of left femur (Fig. 9). Three unsuccessful attempts were made at

reduction. Reduction and alignment are shown by radiograph to be almost anatomic (Fig. 10). Convalescence was uneventful. Union occurred by first intention. There was no shortening.

CASE 5.—Man, aged 32. Comminuted fracture of left humerus, with marked displacement (Fig. 11). There was a large hematoma extending into the axilla and on the chest anteriorly and posteriorly. Operation was done nine days after the injury. I considered it safe to wait until the tissues had gained some resistance. Several fragments of bone were removed at the operation. Their absence is well shown in the radiograph (Fig. 12). Convalescence was uneventful. Union by first intention took place. The patient undressed and dressed himself without assistance thirty-two days after the operation.

CASE 6.—Boy, aged 18. Compound comminuted fracture of the left humerus, caused by passage of two wheels of a loaded coal wagon (7,450 pounds) over the member. Operation was performed two days after the injury. The patient traveled 150 miles from an inaccessible part of the state. The comminuted fragments were removed. The extensor muscles of the arm were severed by the crushing force of the wheels. The musculospiral nerve was tucked into the lower segment of the triceps. There was no infection of wound, which healed kindly as soon as the devitalized soft parts separated. Alignment is well shown in the radiograph (Fig. 13). There was some paresis of the flexors and extensors of the forearm, but at the time of the last report (nine weeks after the injury) power was rapidly returning.

1723 Tremont Place.

A METHOD OF TONSILLECTOMY BY MEANS OF A GUILLOTINE AND THE ALVEOLAR EMINENCE OF THE MANDIBLE

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ST. LOUIS

I wish to describe a method of tonsillectomy which, so far as I can learn, has not heretofore been described or used. The essential and distinctive feature of this method is the fact that it moves the tonsil completely out of its normal bed in the forward and upward direction and then utilizes one of the anatomic markings of the lower jaw as a vantage-point in putting it through the aperture of the guillotine. This anatomic marking is the well-defined eminence just above the mylohyoid line, produced by the last-formed molar tooth in its socket (Fig. 1, a, Fig. 2, I, a, Fig. 2, II, a), which is rendered even more prominent in the mouth by the tissues of the gum. In childhood the posterior, unformed molar as it lies imbedded in the alveolus helps to make the eminence (Fig. 2, II, a). This marking has not been given a name in any of the treatises on anatomy. I have taken the liberty of naming it "the alveolar eminence of the mandible," in order to facilitate the description of this procedure.

The instrument used (Fig. 3, I and 3, II) is a modification of what I have nearly always heard called the "Mackenzie guillotine"; but it occasionally has been called the "English guillotine" to distinguish it from the "Mathieu" or "French guillotine." Sir Morell Mackenzie,¹ however, relates that the instrument which nowadays bears his name is a modification of the one described by Dr. Physick² of Philadelphia in 1827, the difference being that he (Mackenzie) made the handle

reversible, so that it could be applied to either side of the shaft. In this way he facilitated its use by surgeons who used the one hand for removing both tonsils. He also narrates that Dr. W. B. Fahnestock³ of Lancaster, Pa., in 1832, first described the modification which consists of a circular aperture and a transfixing needle, with a ring knife to cut on the pull (the

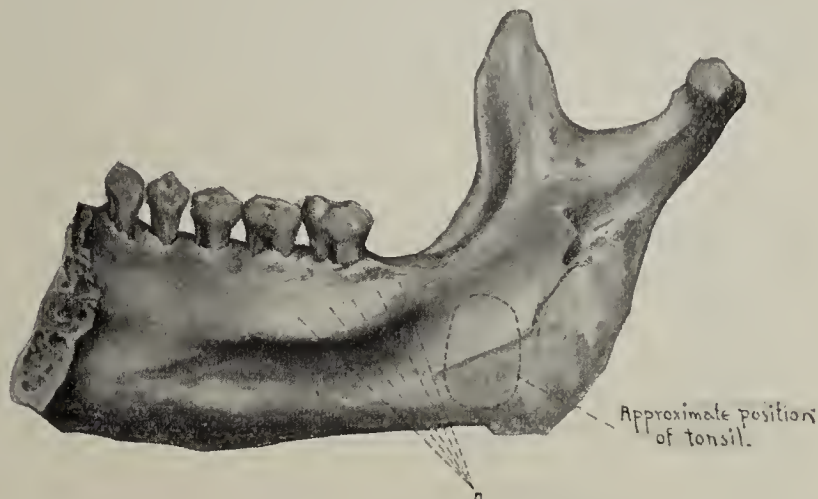


Fig. 1.—Inner surface of the right half of the mandible, showing the alveolar eminence, A, and its relation to the usual position of the tonsil.

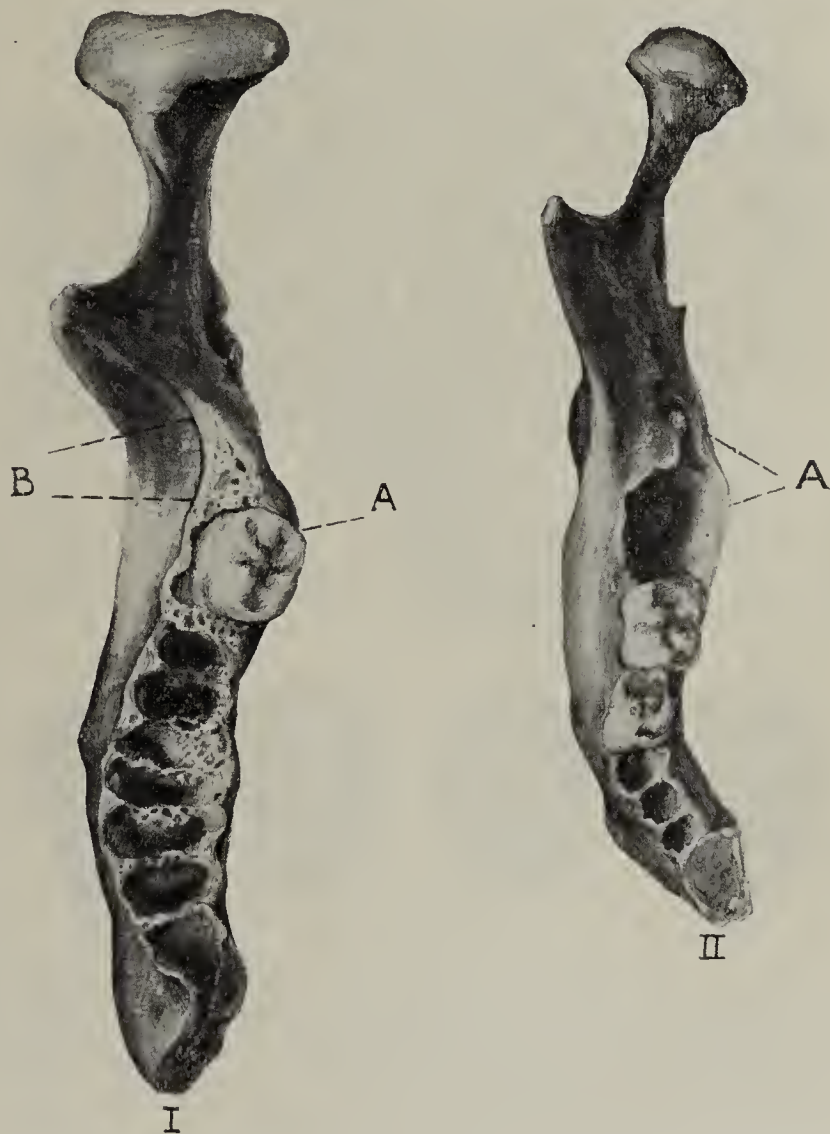


Fig. 2.—I. Right half of a mature mandible seen from above, showing alveolar eminence, A, with fully cut third molar and buccinator ridge B. II. Right half of young mandible seen from above, showing uncut third molar and the part it takes in the formation of the alveolar eminence A.

"French guillotine") and that Guersant⁴ in 1864 changed the shape to an ellipse and at the suggestion of Velpeau added the elevating prongs. He furthermore states that the guillotine idea was first published

1. Mackenzie, Morell: *Diseases of the Pharynx, Larynx and Trachea*, New York, Wm. Wood & Co., 1880.

2. Physick: *Am. Jour. Med. Sc.*, i, 262. Quoted by Mackenzie.

3. Fahnestock, W. B.: *Am. Jour. Med. Sc.*, xi, 248. Quoted by Mackenzie.

4. Guersant: *Hypertrophie des amygdales*, Paris, 1864. Quoted by Mackenzie.

by Dr. Benjamin Bell⁵ in 1783 in his description of the uvulatomes used in England in the latter part of the eighteenth century.

The guillotine which I use (Fig. 3, I and II) is therefore a modification of that of Dr. Physick, which consisted of a shaft of metal with a circular aperture at its distal end through which the tonsil was inserted, and cut through by a blade pushed across the aperture. I have altered the original model in order to accomplish two definite objects: (1) to get greater strength

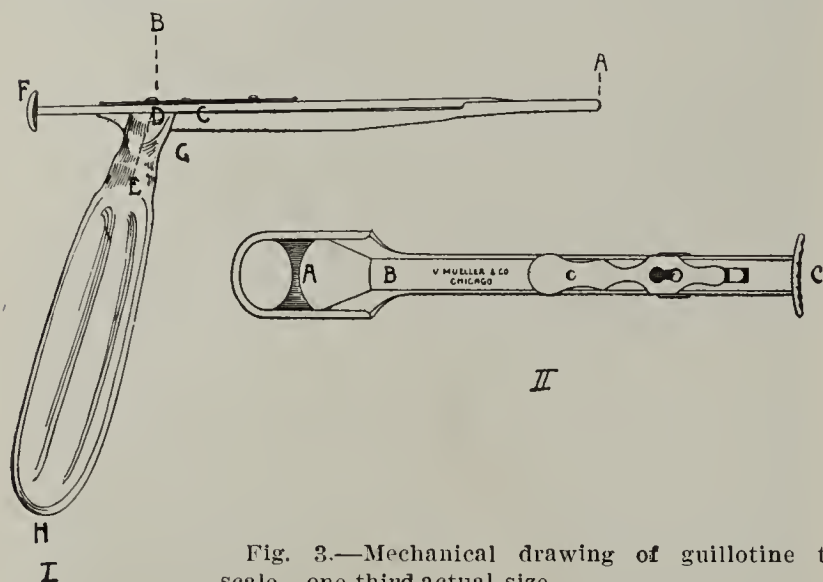


Fig. 3.—Mechanical drawing of guillotine to scale, one-third actual size.

in the instrument; and (2), to increase the leverage employed in its use. These are attained (1), by doubling the thickness of the shaft; and (2), by shortening its length, and making the handle longer. I greatly prefer an elliptical aperture. The usual model of Dr. Physick's guillotine at present to be found in the instrument shops is the Mackenzie modification, which has a round aperture. In a few shops in the United States it has been made with an elliptical aperture the long axis of which is transverse to that of the shaft.

In this operation a correct instrument is of very great importance. I believe it to be of far greater importance than is usually the case in surgical procedures. For this reason I feel that an accurate description ought to accompany its pictures.



Fig. 4.—Tonsil removed from young adult: I, internal surface as it appears while still in the grasp of the guillotine, having the appearance of being turned inside out; II, same tonsil, external surface, with the capsule invaginated; III, internal surface after its parts have been replaced; IV, external surface after capsule has been replaced.

DESCRIPTION OF THE GUILLOTINE

(In the following use of terms I assume that the surgeon is holding the instrument, with its aperture from him). It is made entirely of metal. It measures 13. cm. from A to B (Fig. 3, I) which is from 2 to 4 cm. shorter than the models usually found for sale. The angle at which the shaft and handle join, C, D, E, is 115°. This is the most comfortable position for the handle in the surgeon's hand; and sacrifices almost

none of its leverage. The handle should be large and rough, measuring 11.5 cm. from its free end H to its junction with the shaft G, and should be of a shape that is comfortable in the grasp, thus facilitating the use of strength. The shaft is thin, 3 mm., at its distal end where the aperture is cut; but is reinforced on the handle side, proximal to the aperture, by another piece of steel of the same or greater thickness, they being welded together and the handle attached to these. Special attention should be paid to details in order to make the instrument as strong as possible, such as putting a bolt through the full length of the handle in addition to its being welded to the shaft. Its strength should be so great that the shaft cannot be bent or the handle broken off by the power of an ordinary man. The blade is 2.5 mm. thick. Its proximal end, F, when closed (Fig. 3, I, is drawn with the blade open) should extend 2.5 cm. beyond the distal side of the handle at its attachment to the shaft G. Its cutting edge should be made dull for the reason that it will then readily follow in the connective tissue between the capsule of the tonsil and the constrictor of the pharynx on which it lies, whereas a sharp edge easily cuts through the tonsil or the constrictor. Less bleeding follows from the wound of a dull blade, which is an additional advantage. The edge should be made by grinding the blade 2.25 cm. back (Fig. 3, II, A, B), because by so thinning the cutting end of the blade the field of operation is



Fig. 5.—A young jaw showing guillotine in position. The dotted lines show the usual position of guillotine for mature jaws.

made wider, as will be shown later. The proximal end of the blade is provided with a cross-bar F, which should be comfortable under the thumb so as to permit of great pressure without hurting the surgeon's hand. A ring may be substituted for the cross-bar and the surgeon's thumb inserted through it. The assumed advantage in this is that, in case he should not apply the instrument perfectly, he could readily withdraw the blade by means of his thumb without removing the instrument from its position, and immediately push it down again. This might be repeated until he had the tonsil properly through the aperture, with small loss of time; but he soon learns to do this with the cross-bar too, so at present my feeling is that this must be a matter of individual choice.

The blade must slide to and fro with the least possible friction. The aperture is elliptical, with its long axis transverse to that of the shaft. Its distal arc should be lined around with a soft metal into which the dull blade may be forced in the act of cutting through the tissues. The surgeon should have two guillotines, one with an aperture 2.5 cm. by 1.8 cm., the other 1.75 cm. by 1.5 cm. The two instruments should be alike in every measurement except the distal part of the shaft

5. Bell, Benjamin: System of Surgery, 1783, iv, 144, Plate 52, Fig. 1. Quoted by Mackenzie.

which bears the aperture; the two should be of the same great strength. If the shaft is not strong enough it will be bent slightly in the act of operating and then the blade will not slide with the ease that is required of this instrument. If the handle is not securely attached to the shaft it will be broken off during the operation.

ANATOMIC RELATIONS

In the following use of terms indicating direction I assume the body of the patient to be erect and facing the surgeon. I have already mentioned that one of the essential and distinctive features of this method is the utilization of the alveolar eminence of the mandible in manipulating the tonsil. I have also stated that this eminence is made by the internal ending of the alveolus, with the gum covering it.

It should be remembered that the tonsil lies posterior to and for the most part below the eminence, in childhood appearing much further back and much lower than in maturity. This arises from the fact that an uncut tooth is in the alveolus posterior to the one showing through the gum membrane, causing a greater elevation at this site and making it seem that the teeth are much further forward, and the tonsil lower. In cases of great enlargement of the tonsil more of it will lie even with or a part may possibly lie above the eminence. It will also extend forward, approaching the eminence from behind.

The surface of the jaw-bone posterior to and below the eminence slants downward, backward and outward at an angle that may vary considerably, but is approximately 45° —that is 45° downward and outward from the transverse, and at the same time 45° outward and backward from the anteroposterior axis. This slant arises in large part from the fact that the alveolar arch as it proceeds backward tilts more and more inward from the body of the jaw. Its posterior end faces inward as well as upward (Fig. 2, I A). Looking backward or downward it is seen that the ending of the alveolus lies completely internal to the line of the buccinator ridge were it prolonged as it descends on the coronoid process (Fig. 2, I B); and the impression thus given is that this line when carried downward represents the jaw proper and that the end of the alveolus lies internal to it. This is shown better on mature jaws. This slant is crossed by the mylohyoid line, which is well marked in maturity. On young jaws this surface is more nearly smooth, although that marking is always to be seen.

The angle of this slant is subject to considerable variation because the relation of the breadth of the alveolus to the height of the horizontal portion of the jaw (alveolus and body together) varies very much according to age. The breadth of the alveolus in the young is actually wider (3 mm. sometimes) than that of the adult. This is true for two reasons; (1) that in the young, these alveolar dimensions are made by the crown of the molar, whereas in maturity they are made by its neck; (2) that although the tooth may be through, the bone surrounding it has not yet been absorbed to the extent that it is in maturity. On the other hand the height of the horizontal portion in maturity is twice that of early life, for the reasons that the young jaw consists largely of alveolus, and that the body is added to it only by development with the years. For these reasons the angle of the slant in young jaws may rise to even more than 60° outward and backward from the anteroposterior axis (Fig. 5), and to even more than 60° downward and outward from the transverse; while in maturity these angles may be less than 45° in

one or both directions. The alveolar eminence is therefore very much more prominent in the young, despite the fact that the inward tilting of the alveolus is greater in maturity than in early life. The edentulous jaw need scarce be considered in this connection, because the operation in question is rarely needed by the aged. Anatomically, however, it is usually marked by a very heavy mylohyoid line which, since the absorption of the alveolus, lies near the upper margin of the body which alone remains. There is usually a trace of the alveolar eminence still to be observed.

These differences may be accurately estimated in the living by introducing the index-finger into the patient's mouth, downward, outward and backward from the alveolar eminence pushing the soft tissues aside as far as may be necessary. It is distinctly advantageous to make this estimate just before operating in order that the direction of the guillotine may be varied to suit that individual's requirements. The buccinator ridge is frequently helpful in making this estimate.



Fig. 6.—The guillotine in position, showing its general relationship to the bones.

THE OPERATION

In order to use the alveolar eminence of the mandible as a vantage-point from which to manipulate the tonsil—that is, to use this prominence to put or help to put the tonsil through the aperture of the guillotine—it is necessary to move it completely from its normal position which is posterior to and below the eminence (see above). It must be moved forward and upward. The elasticity of the soft parts of the throat readily allow the necessary movement. In this way the tonsil will be moved out of a hollow, soft, moving bed and be brought up on to a motionless, hard hump—a solid, fixed, somewhat hemispherical convexity.

Under these altered conditions it is not difficult to place the blade of the guillotine at its base. The eminence is then sometimes found to be all that is required to hold it for a perfect adjustment of the instrument, which is done by pressing it against the bone. The prominence of the eminence then stuffs the tonsil through the aperture. Often, however, in operating, especially with a large, flat (thin) imbedded tonsil, it is

necessary to use the tip of the index-finger of the other hand to put the final bit through. If it be soft in addition to these qualities, the difficulty is increased to the fullest possibility. A firm tonsil is manipulated without difficulty, regardless of size or imbedding, provided it be not too thin (flat). Should it be soft, large, flat (thin) and imbedded, great care and some dexterity must be exercised in order to secure it entire.

Under these conditions the surgeon will find sometimes that he has removed only the central portion of the capsule with tonsil tissue surrounding it. A little more familiarity with the method and possibly a little greater dexterity in managing the instrument will usually permit him to secure it entire. (I can, however, picture to myself a tonsil that is so soft, thin and spread out that it could not be removed entire with one stroke, despite all the care and dexterity that might be exercised; but it must needs be rare.)

Under conditions presenting difficulties a perfectly satisfactory guillotine is indispensable. Precise knowledge of the topography and all the variations is necessary at all times.

THE OPERATIVE PROCEDURE

The use of this type of instrument, so far as I am able to learn, has always been by preference with the smooth (proximal) side of the blade applied to the tonsil. Mackenzie¹ made his modification with its detachable and reversible handle that this might be done more readily (see above). Its method of use was, that it was inserted into the mouth in an anteroposterior direction and the aperture put over that part of the tonsil which protruded beyond its surroundings into the cavity of the throat. The blade was then pushed across, cutting off that portion.

With my method one must approach the tonsil at an angle, approximately 45° , which requires the shaft of the instrument to cross the mouth entirely from the opposite side. This necessitates the distal side of the shaft being applied to the tonsil. It at the same time has the great advantage of leaving the lateral portion of field of operation wide open for view and the use of the fingers of the other hand. Having the blade ground far back widens it further. (The use of the proximal side will be found exceedingly awkward or even impossible as the surgeon's hands are interfered with and the lateral portion of the field of operation covered from view.)

It is a very great advantage to operate on the right tonsil by holding the guillotine in the right hand and on the left tonsil by holding it in the left hand. If the surgeon can use only one hand, the position of the patient should be recumbent. Assuming that he uses his right hand for both tonsils and stands on the patient's right: for the right one he faces the patient's head; but for the left one he must turn around so that he faces the patient's feet, and stand somewhat beyond (above) his head. (These relations might be sustained in the erect posture also.) The head should be held firmly by an assistant to prevent rotation, and the mouth kept fully open by a gag.

Regardless of what may be the position of the patient's head, the surgeon takes his bearings from the lower jaw. The guillotine, with the transverse axis of the aperture vertical, is introduced into the mouth at an angle of 45° outward and backward, passing back until the distal arc of the aperture is completely behind the tonsil. The direction of the shaft is then changed to point downward in order to get the ring of the aperture under the lower-

most part of the tonsil. The instrument at this moment may sometimes to advantage be rotated slightly by turning the handle downward (toward the feet). This tends to enlarge the field of vision. It is then pressed outward until the distal arc of the aperture has been pressed against the ramus of the jaw, or, in case the patient is not anesthetized, against the firmly contracted internal pterygoid muscle which is inserted here. It is now brought slightly forward and upward, but held firmly against the bone and muscle, when it will be seen that the lower distal arc of the aperture has acted very much like a scoop, having secured the lower part of the tonsil and brought it forward and upward into the neighborhood of the alveolar eminence. In case the shaft has been rotated to secure its lower part, it is now put back into its original position by turning the handle upward. The upper portion of the tonsil is usually put into the grasp of the distal arc of the aperture by this rotation. If the tonsil is not too large and flat (thin) it is usually secured, both lower and upper portions, in the first setting of the guillotine and no rotation is needed. The distal arc of the aperture is now firmly held behind the posterior border of the tonsil and the instrument drawn forward and upward at an angle approximately 45° , which will be found to have pulled it upward and forward onto the eminence of the alveolus. The blade is now pushed down with the gentlest possible pressure until the surgeon sees that it is in contact with the tissues. It should not be pressed forcibly until the parts are engaged satisfactorily in the aperture. The blade, being in contact with the tissues, prevents the portion of tonsil which has gone through from slipping out again.

At this moment the surgeon may perceive that although the distal arc of the aperture is entirely behind and external to the tonsil, a part of its anterior portion has still not gone through. This is usually readily seen, but may be more definitely determined by feeling with the tip of the index-finger of the other hand; and at the same time it may be pushed through. This is done by the gentlest massage—simply stroking it in the direction of the aperture with the ball of the index-finger and, at the same time, pushing the blade very gently across the remaining portion of the aperture. When the last of the anterior portion has gone through it may be readily seen as a rule; but may be determined with great accuracy by feeling with the ball of the index-finger—passing it up and down over the end of the blade as it closes the aperture. If all of the tonsil has gone through, the distal arc will be felt smooth and firm and to be covered by what seems to be a thick mucous membrane. (It is of course two layers of membrane.) If a part of the tonsil has not gone through, it can easily be felt and recognized as a mass of tissue harder than membrane and usually irregular.

All of the tonsil having gone through, the blade is now pushed across with all the power of the surgeon's hands. Great pressure is usually required because the blade has been made dull. If it be too dull or if it does not fit perfectly into the soft metal lining of the distal arc of the aperture, it will not cut altogether through. The instrument must then be pulled forward a little and its end be stripped off with the finger of the other hand. This does not delay the operation. It may possibly make a little more subsequent pain; but I am by no means sure that it does.

On examination of the extirpated tonsil while it is still held in the grasp of the instrument—that is, just as it comes from the patient's mouth—it will be seen

that its surface which was exposed in the throat has the appearance of having been turned inside out (Fig. 4, I). On loosening it from the instrument it is seen that its capsule side—its lateral surface—bears further proof of this fact. The capsule appears completely invaginated (Fig. 4, II); but it can be readily replaced—that is, turned over into its original relations, thereby restoring the tonsil to its customary appearance, as it is in the throat (Fig. 4, III), covered on its lateral, convex aspect by the capsule (Fig. 4, IV). This phenomenon is readily explicable when one remembers that it was brought up on to the eminence to have the ring of the guillotine, as it were, stuffed down over it, converting its convex bed into a concave one at the time of cutting. Further examination of the specimen reveals that a little of the free edge of the anterior pillar, including a few fibers of the palatoglossus muscle, is attached to it. I always remove this bit of the anterior pillar with the tonsil because it leaves a more open wound and a more open fossa when healed. There seems to be no surgical reason against it; on the contrary, it makes the tension of the suture begin at a point anterior to and below what would otherwise be the case, which tends to draw the palate forward and downward. In cases in which the tonsil is to be removed because of Eustachian tube irritation this seems to me to be advantageous. In operating under general anesthesia I prefer to have the pharyngeal reflex present. I much prefer to have the aperture fit rather snugly over the tonsil.

This method will be found to be satisfactory under all usual conditions, provided the variations in the jaws of different ages are borne in mind. For the young jaw the angle of the instrument must sometimes be increased to even more than 60° outward and backward and to even more than 60° downward and outward. It does not require grasping the tonsil in a vulsellum and pulling it out. The imbedded tonsil is usually removed as easily and as quickly as the protruding one (see above). No loosening of the pillars is required, because I prefer to take a little of the anterior one. Familiarity with the method will enable the surgeon to remove a tonsil in its capsule complete in from five to eight seconds. I think that the shock from this method is less than from the longer operations.

Stumps of tonsils left from previous operations are usually as easily removed as the original tonsils.

3542 Washington Avenue.

Intestinal Sutures.—The evolution of the intestinal suture has brought us to the point where we are certain of good results when the sutures are properly applied and are of the right material. Non-absorbable suture material should be cast off into the lumen of the intestine after serving its period of usefulness. This is best accomplished when used for the inner layer. There is also less destruction of tissue. When placed externally it promotes unnecessary adhesions, plastic exudate and fibrous bands, and may interfere with the proper bowel function because of its prolonged irritation. Absorbable suture material used for the outer layer is soon taken care of, and does not cripple the action of the intestine. The suture in intestinal work must control hemorrhage, secure proper coaptation of the tissues, prevent leakage, avoid pursing, be quickly introduced and must not strangulate the tissue. The back lockstitch of Pagenstecher's thread serves all these purposes. Experimental work has demonstrated that chromic catgut when employed as the outer suture lasts sufficiently long for positive and firm union to occur.—A. E. Benjamin, in the *Lancet-Clinic*

LIPOMATOSIS OF THE LOWER EXTREMITIES WITH REPORT OF A CASE

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This case of lipomatosis of the lower extremities is reported on account of its rarity. Its steady progression suggested a malignant process. No literature is found bearing on this subject.

Patient.—R. R., a girl aged 10, was seen in consultation with Dr. B. L. Dwinell of Taunton, Mass., Dec. 8, 1907. She had suffered since birth with slowly progressing deformity of feet. The family history was negative. "Both feet at birth were shaped like animals' feet, and much larger than normal in pro-



Fig. 1.—Lipomatosis of feet and legs; front view.

portion to the body; weight at birth, $4\frac{1}{2}$ pounds. Patient had on left side a peculiar mark which looked like an old burn; otherwise had been normal and healthy. The patient's mother was not as well as usual when carrying the child, and had a great deal of pain at night. At the age of 6 months, the child's toes were amputated. At this age the feet were noted to be growing faster than the rest of the body. At the age of 10, patient weighed 70 pounds. From this time on the left leg, especially, grew very fast. The mental development of the child had been excellent. She walked and ran like the other children, but tired very easily. Feet sounded not unlike elephant's feet when walking." Double amputation had been advised.

Examination.—General condition fair. Patient was thin and had a peaked expression; seemed active and well; pulse slightly rapid at the time of examination. Running down the left arm and leg was a crusty, eczematous lesion, not progressive. The left foot was larger than the right, but both feet were markedly enlarged and lobular in character, the swelling involving the whole of both feet. The same lobulation extended up to the

knee, but was there less marked than in the feet. Masses the size of two fists stood out on the left calf. These were not adherent, and could be easily picked up. There was a pad of fat about 4 inches thick on the left foot. The dorsum of the foot was probably five or six times the normal in circumference. Examination of heart, lungs, and abdomen were negative. Urinalysis was negative.

The patient had not been seen for about two months prior to this date, Feb. 16, 1908, during which time the legs rapidly

muscles, were dissected out. Some were easily taken out by blunt dissection, while others seemed a part of the muscle substance. The muscle was pale and there was considerable fatty tissue between the fibers. The operation lasted three hours. The wound was closed with silkworm gut and a slight drain left. Recovery from the ether was poor. Patient had an elevation of temperature for three days, and then became normal. There was considerable shock. The convalescence was otherwise uneventful.

April 20, 1908: Under ether a similar operation was done on the right leg. As much of the fatty tissue as possible was dissected out. The wound was drained. There was some sloughing of the skin flaps. Convalescence was otherwise uneventful.

May 17, 1908: Results from previous operations were good; still there was a large amount of fat on the feet; patient was gaining in weight.

Oct. 11, 1908: A second operation was done on the right foot. A large amount of fat was dissected from plantar surface of the foot. Patient made a very poor recovery from the ether. On the second day she had a pulse of 160 and temperature of 103 F., but under treatment recovered.

The skin flaps in these operations even under hot towels grew cold. Sloughing of the flaps occurred after each operation. Following each of these three operations the patient suffered shock, although the last operation lasted only about



Fig. 2.—Lipomatosis of feet and legs; lateral view.



Fig. 3.—Cross-section of amputated left foot.

increased in size. A consultation was held with Dr. E. G. Brackett, and we advised conservative operative treatment before amputation was done.

Feb. 29, 1908: Radiograph of left foot, and also photographs were taken (Figs. 1 and 2).

Operations.—March 30, 1908, ether was given and operation performed. An incision running from the tibial tubercle on the outer side of the left leg was made down to the ankle-joint. Masses of fat, encapsulated and running between and into the



Fig. 4.—Longitudinal section of amputated left foot and leg. Note the lobular fatty deposits and fatty infiltration and degeneration of muscular tissue.

one and one-fourth hours. The patient's general condition seemed poorer each time, and there was a very marked increase in weight throughout the whole body, but especially in the abdomen.

The patient now weighed 137 pounds at the age of 12. It seemed as though she would not be able to withstand more operations. The confinement to the house told on her general condition. The right leg, while not normal, was about one-half the size that it was previous to the operations. The left leg, not having been controlled by operation, had continued to grow. Amputation of the left leg was therefore advised. Dr. Dwinell of Taunton was seen in consultation.

March, 1910, under ether, a regular amputation of the left leg was done at the point of election; silkworm gut sutures were used. There was a good recovery from the ether.

The general condition of patient has been materially better since this operation. She now walks about well with crutches, while awaiting an artificial limb. The right foot has ceased to grow.

Vertical and cross sections of the amputated foot, natural size, are shown in Figures 3 and 4.

411 Marlborough Street.

ANGIOSARCOMA OF THE LIVER IN AN
INFANT

JULIUS BONDY, M.D.

NEW YORK

CASE.—Baby N., born April 10, 1910; male, second child.

Family History.—The history of the father and mother, as well as that of the grandparents on either side, showed absolutely no record of malignant growths. The mother's age was 28; that of the father 32.

Past History.—The child was delivered instrumentally, due to *inertia uteri*. It had no deformities and seemed to grow normally until the third week.

Present History.—Three weeks after the birth of the child, while the mother was bathing it, she noticed that the child's abdomen was somewhat protuberant. One week later the child was brought to me for this reason alone. No other symptoms of disease had been noticed; the local condition was evidently as yet causing the child no inconvenience. The stools were normal and digestion good. The child was breast-fed.

Examination.—The child was somewhat pale and languid. The head and neck were normal; there was no glandular enlargement. The apex of the heart was in the fourth intercostal space, in the nipple line; no murmurs were heard. Lungs were normal. No deformities of either extremities.

The abdomen was markedly protuberant, especially in the upper right hand quadrant, and dilated veins were perceptible over the liver region. The circumference of the abdomen was



Enlargement of abdomen from angio-sarcoma of liver in an infant aged 3½ months.

eighteen inches at a point one and a half inches below the costal border. Percussion gave a flat sound over the upper three-quarters of the abdomen. On palpation, an indistinct mass was felt filling both sides of the upper abdomen. The surface of the mass was smooth and the edge was distinctly palpable below the umbilicus. This mass could not be definitely connected with any organ.

Exploratory Operation and Findings.—The case was referred to Dr. Henry Roth, attending surgeon to Lebanon Hospital, and he performed an exploratory laparotomy over the mass in the median line, which showed the tumor to be an enormously enlarged liver, filling three-quarters of the abdominal cavity. The liver was dark brown in color and mottled with small blue areas averaging one centimeter in diameter. Its surface was smooth. The spleen and kidneys were not enlarged, nor was there any apparent invasion of any other abdominal organ.

A small section of the liver was removed from the upper surface for microscopical examination and the abdomen closed. The child made an uneventful recovery from the operation. Following the operation, the child's girth progressively increased, until, just before its death, at the age of 3½ months, it measured twenty-nine inches at the umbilicus.

The extremities became edematous, but at no time was there ascites or jaundice. Diarrhea finally set in and the child died of exhaustion. No autopsy was permitted, although strenuous efforts were made to obtain it.

The section of liver removed at the time of operation was sent to Dr. Eugene P. Bernstein, pathologist to Lebanon Hospital, who reported it to be angiosarcoma.

This case is reported because of its extreme rarity and the difficulty of making an accurate diagnosis. On reviewing the literature, I find that Arnold¹ reports two cases. The first of these was in a boy of 15 years, and the second in a man of 53 years. Both died in a short space of time, and the diagnosis was apparently made at autopsy. Arnold, after reviewing several cases of malignant disease of the liver, comes to the conclusion that several of these cases strongly resemble angiosarcoma of the liver. Dervaux² reports a case of angiosarcoma of the liver, secondary to sarcoma of the testis.

The chief features in my case are, first, the early period of life at which the tumor started (possibly during gestation); second, the rapid increase in abdominal girth; third, the early death of the infant; and last, the paucity of symptoms noticeable until just before death.

1266 Boston Road.

A SIMPLE APPARATUS FOR PROCTOCLYSIS

PERCIVAL NICHOLSON, M.D.

ARDMORE, PA.

Not knowing whether any one has been using a similar apparatus, but not having seen anything like it mentioned in the medical journals, I wish to describe a simple apparatus which I put into use in the Presbyterian Hospital in Philadelphia in 1910, which fulfils all the requirements for carrying out the drop method of proctoclysis.³

It is simplicity itself, the requisites being a glass cylinder of 4 oz. capacity, drawn out at the end to carry rubber tubing; a No. 7 rubber stopper with a hole in the middle to carry a pipette, and another hole in the side for an air vent; a Moore pinch-cock, and a proctoclysis nozzle.

To apply the apparatus simply take an ordinary fountain syringe, found in any household, cut the tubing about three inches below the bag, put the pinch-cock on the short tube thus formed and shut it off tight about 1½ inches from the bag. Now run the short end of the tube over the pipette, securing it with a ligature. To the lower end of the glass cylinder attach the remaining rubber tubing, and in place of the ordinary irrigation nozzle apply a hard rubber proctoclysis nozzle. Then fill the bag with normal salt solution and run the lower end of the tubing between two hot water bags. The illustration shows the entire apparatus assembled and the bag filled with salt solution (which is well to have warm, though that is not of great importance). A short distance from the nozzle the rubber tubing is carried between two hot water bags partially filled with water at about 150 to 175 F. Clinically it has been found that the salt solution, passing, as it does, a drop at a time between the two hot water bags, is thus heated to the proper temperature before entering the rectum. The temperature of the solution in the douche bag is not of much importance, as it will be cooled in dropping into the cylinder. Both hot water bags are surrounded by a blanket which acts both in retaining the heat and in protecting the patient's skin from burning.

1. Beitr. z. path. anat., 1890, viii, 123.

2. Journal de sc. méd. de Lille, 1902, xxv, 131.

3. Since the above was written there has appeared in Surgery, Gynecology and Obstetrics an article by Dr. W. A. Dewitt of Philadelphia describing the same apparatus, with a slight modification, leaving it to be inferred that it was original with him. Dr. W. A. Dewitt was a resident in the Presbyterian Hospital in Philadelphia at the time I introduced and first put in operation the apparatus described above, with the origination of which he had nothing whatever to do.

Having set up the apparatus, loosen the pinch-cock until the solution drops from the pipette at the rate desired; then introduce the nozzle just within the sphincter. It will be noticed that an important feature of this apparatus is that its operation is always capable of inspection.

Should the nozzle become blocked, a rise of fluid in the cylinder will be noticed, and by shutting the pinch-cock and removing the rubber tube from the lower end of the glass cylinder a small quantity of salt solution can be forced by means of any syringe through the lower tube and thus clear the opening in the nozzle without removing it from the rectum; then by reattaching the tube to the glass cylinder and opening pinch-cock the flow is reestablished.



Illustrating parts of proctoclysis apparatus assembled ready for use.

As only the contents of the small glass cylinder and the small column of water in the tube press on the bowel, the bag can be raised to almost any height desired without causing expulsion of fluid alongside the nozzle; but the best results are attained when a moderate elevation of from two to three feet is maintained.

This apparatus has been in use for over one year with marked success, and its simplicity admits of its use in general practice as well as in hospitals, as it is inexpensive, efficient and cleanly, all parts being capable of sterilization.

Attractive Diet in Neurasthenia.—In order that a diet may be available, it must be palatable, and especially is this the case in dealing with neurasthenics.—D. N. Paton in the *Practitioner*.

A NEW METHOD FOR APPLYING PLASTER JACKETS IN HYPEREXTENSION *

PERCY WILLARD ROBERTS, M.D.

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NEW YORK

There seems to be little diversity of opinion as to the theoretically simple mechanical problem involved in treatment of Pott's disease. The object is to support an upright column which has become weakened at one point and either bends or threatens to bend, and at the same time to abolish or minimize friction on the articular surfaces of the diseased vertebral body, thereby lessening the likelihood of deformity and giving Nature opportunity to limit the lesion and to effect a cure. In dealing with the flexible spine there is but one way to accomplish this, and that is by throwing the burden of weight-bearing on the articular processes—in other words, to put the spine in a position of hyperextension. This

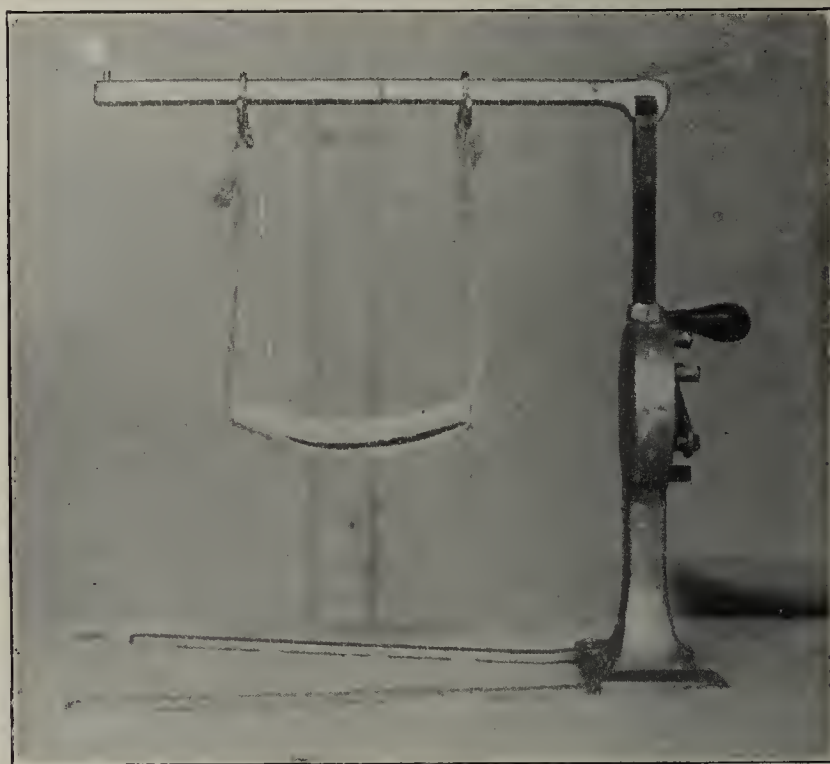


Fig. 1.—Roberts' jacket and sling.

would seem simple enough, and yet the study of a large number of hospital cases forces the conviction that it is seldom achieved by present methods. There are various roads to the end sought. One may choose the spinal brace, the gas-pipe frame or the plaster jacket, but it is the last of the three that will here be considered, for the jacket has many advantages in hospital and dispensary practice.

Except in certain localities, notably Boston and Baltimore, it is the custom to apply plaster by the Sayre suspension apparatus or some modification of it, and this of itself is eloquent testimony of the value of a method which has undergone so little change in nearly forty years. But no one ever asserted that the Sayre method produced hyperextension. It does not. It is, nevertheless, a simple and effective way of securing immobilization, and the results obtained by it have warranted its continued use over a long period of time. Realizing its one shortcoming, a number of men have produced devices for applying plaster-of-Paris jackets in hyperextension. These have been effective, but fail

* Read before the Orthopedic Section of the New York Academy of Medicine, Nov. 18, 1910.

either in the element of simplicity or in accuracy, or both, and consequently have not been widely accepted in routine work. To overcome such objections I have evolved an apparatus which utilizes the bandage sling in combination with an ordinary jack, the simplicity and efficiency of which are shown in the illustrations.

To determine just what is accomplished in the way of position by the use of the familiar head-sling, tracings have been made in about fifty cases with the patients prone on a hard table and strung up ready for a jacket. Most of these showed some correction of deformity, but only a little, as will be observed on referring to lines 1

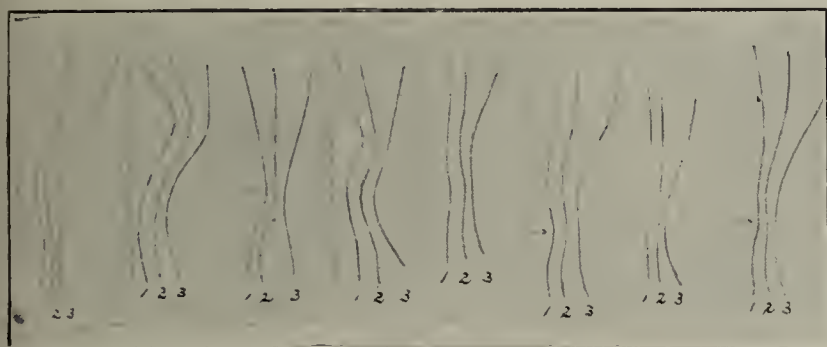


Fig. 2.—Tracings showing correction of deformity obtained by "jack and sling." 1, contour of spine with patient prone on a hard table; 2, contour of spine with patient in upright suspension; 3, contour of spine with patient suspended by "jack and sling."



Fig. 3.—Patient suspended by "jack and sling" ready for jacket. Note extent and thickness of padding.



Fig. 4.—Jacket finished but not trimmed.

and 2 (Fig. 2) of the tracings presented herewith, which are typical of the entire number. In contrast with line 2, traced by a lead tape with the patient in upright suspension, is the third of each set, which gives the contour of the same spine suspended by the jack and sling.

The apparatus illustrated in Figure 1 consists of an automobile jack, to the movable upright of which is attached a horizontal bar, and to the base two foot-pieces to insure lateral stability. On the bar are two shaped wire loops, over which are pinned the ends of a muslin bandage. Its simplicity is evident.

It is used as follows: The patient lies on the back and a two-inch muslin bandage is passed under the body, bearing exactly on the kyphos; the bandage is padded generously the whole breadth of the body. This

form of padding, which is a departure from ordinary practice, is absolutely essential to avoid excoriations. Felting at least one-quarter of an inch in thickness is the best material for the purpose. The ends of the bandage are pinned over loops on the horizontal bar and the jack is set in motion, a hip-rest and shoulder-rest being placed in position as the patient rises. The desired degree of hyperextension having been obtained, the usual pads to protect the spinous processes and iliac prominences are placed in position. The plaster bandage is started at the pelvis. When the suspending sling is reached, the bandage is crossed over the body from the lower border of one upright to the upper border of the other. To give strength to the front of the jacket several folds of plaster bandage are passed longitudinally between the muslin supports, being carried down on either side of the sling as it leaves the body. When the cast has hardened the sling is cut away close to the jacket. It is unnecessary to close the remaining slits except for appearance, as they in no way interfere with the strength of the jacket.

In simplicity, the jack and sling compares favorably with the usual method of upright suspension. By allowing the terminal parts of the spine to fall automatically and abruptly away from a narrow point of support it secures the greatest degree of hyperextension obtainable in any given case within the limits of safety. Further advantages over the upright method are greater steadiness of the patient, greater comfort of the patient, an easier attitude for the operator, less splashing of plaster, greater convenience in the application of jackets away from the plaster room—that is, in the home or hospital wards—the requirement of fewer assistants, and, of greater import than all the rest, the natural assumption of a better mechanical position for the diseased spine.

With this apparatus, I have applied jackets on patients ranging in age from 3 to 40 years, and in weight from 30 to 140 pounds, and all have been apparently comfortable. By the use of two slings, Calot jackets and jackets with jury-masts may be applied. While it is too early to report a convincing series of cases, there is reason to believe that persistent use of the jack and sling method, with frequent changing of jackets, will show a real correction of deformity in a large percentage of long-standing cases.

134 West Forty-Eighth Street.

PRIMARY SUTURE OF SUBPARIETAL RUPTURE OF KIDNEY

WITH REPORT OF CASE *

F. GREGORY CONNELL, M.D.
OSHKOSH, WIS.

CASE OF SIMPLE SUBPARIETAL RUPTURE OF LEFT KIDNEY,
LUMBAR INCISION AND SUTURE OF KIDNEY FORTY-
TWO HOURS AFTER ACCIDENT, RECOVERY

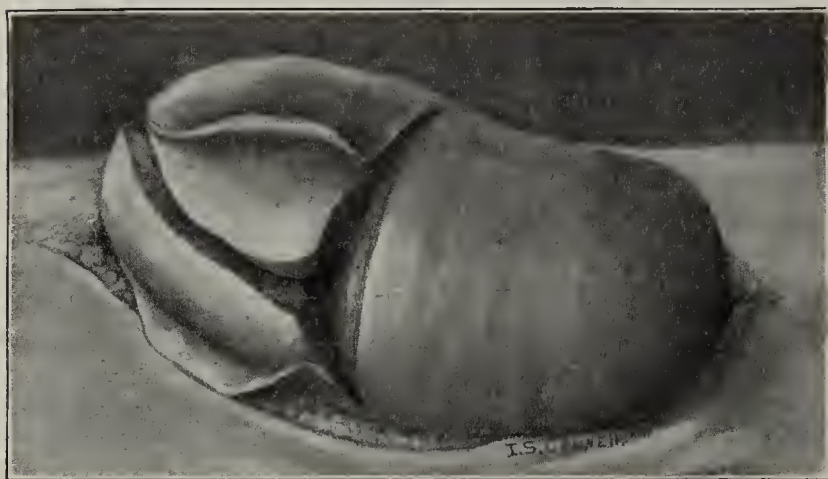
History.—M. M., a schoolboy, aged 11, about 8:30 a. m., Oct. 26, 1910, in attempting to alight from a moving bicycle, slipped and fell, striking his right lumbar region against the edge of the street curb. There was very severe pain in the right loin, but no collapse, shock, or vomiting; but for a period of about five minutes he was unable to walk because of general weakness, with dizziness and nausea. After a short rest, in a sitting, doubled-over posture, he was able to walk a distance of about half a mile to his home, and as he still complained of very severe pain he was put to bed.

* Read at the meeting of the Western Surgical Association, December, 1910.

Dr. F. W. A. Brown was called and examined the boy very carefully. There was no fractured rib or evidence of serious injury, the tenderness and rigidity in the lumbar region being the only apparent result of the tumble the boy had taken. The severe pain persisted until about 1:30 p. m., when about 8 ounces of bloody urine were passed, after which the pain was markedly lessened; half an hour later vomiting occurred, after which there was a still greater sense of relief.

Examination.—About 2:30 p. m. I saw the patient in consultation with Dr. Brown, at which time the boy did not complain of much pain, other than a severe and constant ache in the left lumbar region. One was impressed at once, by the "bad appearance" of the patient. The skin was sallow or yellowish and the face had a drawn, anxious expression, despite the fact that the boy was making light of his injury and was asking for some chewing-gum. Pulse, temperature and respirations were normal; there was no dyspnea but deep inspiration caused pain under the left lower ribs. Abdominal palpation revealed marked rigidity and tenderness in the region of the kidney, more marked posteriorly. Deep palpation was impossible, and a tumor mass could not be made out, either by palpation or percussion. There was no free fluid demonstrable in the peritoneal cavity, nor was there any external evidence of the injury.

Diagnosis.—Because of the nature of the trauma, hematuria and rigidity of muscles in the region of the kidney, rupture of that organ was diagnosed, and exploratory incision advised. This advice was refused.



Illustrating the author's case of a stellate, traumatic rupture of the kidney, extending into the pelvis, in a boy aged 11.

Course of Injury.—During the following afternoon and evening the boy was better, in that the pain was not so severe, but he was unable to rest because of the constant dull ache at the site of the injury, and the passage of bloody urine about every hour. The act of micturition was without pain or tenesmus. The next morning there was an attack of vomiting, the bloody urination continued, and the patient became drowsy and weaker. The parents then became alarmed, realized the seriousness of the boy's condition, and sent him to the hospital for operation. On admission the patient was very weak, unable to sit up, the face was drawn and pinched, and there was a distinct yellowish tinge to the skin. His only complaint was a dull ache in the lumbar region, with a more severe pain on moving. Examination revealed a distinct fulness in the left ilio-costal space, with marked tenderness on pressure; there was rigidity of the lumbar and abdominal muscles, and on bimanual palpation a mass could be detected, which was dull on percussion, but there was no free fluid in the peritoneal cavity. The temperature was subnormal, pulse 130, small and collapsible, and the respirations 24 and superficial.

Operation.—This was performed at St. Mary's Hospital, Oct. 27, 1910, at 2 p. m. Ether anesthesia administered by Dr. W. P. Wheeler, and Dr. F. W. A. Brown assisting, the kidney was approached through the usual lumbar incision. Division of the transversalis fascia revealed the fatty capsule of the kidney, through which blood was apparent, similar to the appearance of the peritoneum in cases of intra-abdominal

hemorrhage. Division of this capsule was followed by the escape of considerable blood and many clots. The kidney was promptly delivered through the wound, and examination revealed a stellate tear extending into the pelvis of the organ in the upper pole of the kidney as shown in the illustration. A transverse tear was situated at about the junction of the upper and middle thirds, extending from side to side, practically separating the upper pole from the remainder of the organ. This upper fragment was divided into two unequal parts by a longitudinal tear extending from the transverse rupture to the upper extremity of the organ. This longitudinal tear was not located in the mid-line of the convex surface, but was situated about a quarter of an inch behind the mid-line at its lower part, and about half an inch behind at its upper extremity, on a line probably analogous to the avascular line of Broedel. After cleansing the wound margins of blood-clot by salt sponges that passed into the pelvis, the wounds of the kidney were sutured with chromic catgut mattress stitches, which were inserted deeply into the parenchyma of the organ. Ordinary round curved needles were employed, and there was no tearing out of the stitches. After these deep mattress stitches were inserted and tied loosely, there was absolute control of the bleeding, and a layer of superficial circular or over-and-over stitches were inserted to effect accurate coaptation of the wound edges. An effort was made to close the fibrous capsule but this was found to be impossible. A cigarette drain was inserted to the lower pole of the kidney and the lumbar wound closed except at the passage of the drain.

Outcome.—Recovery was uneventful; there was very little discharge from the wound, no urine; and the drain was removed October 30. The patient was discharged with the wound healed, a perfect recovery, November 13.

REVIEW OF SUBJECT

That subparietal rupture of the kidney is not common is shown by the fact that in 1903 Watson¹ was able to collect reports of only 660 cases from the literature. Neilson² in 1908 added reports of thirty-four cases in which operation had been done, making a total of 694. In the same year Lardennais³ collected reports of 771 cases (this, an inaugural thesis, has not been available in the original).

Since Neilson's report in 1908, I have been able to find either mere mention, or a more or less complete report, of 147 additional cases, in seventy-nine of which operation was not done and in sixty-eight operation was done. This rapid recent increase in the number of reported cases would tend to show that the above figures fall far short of the actual number of cases.⁴

1. Watson: Boston Med. and Surg. Jour., 1903, cxlix, 29.
 2. Neilson: Am. Jour. Med. Sc., 1908, cxxxv, 54.
 3. Lardennais: Thèse de Paris, March, 1908; Zentralbl. f. Chir., 1908, No. 45, p. 1328; Jour. de Chir., May, 1908.
 4. The collected cases are set out below.
- Operations:
- Tilton (1 case): Ann. Surg., 1909, 1, 812.
 - Nassau (1 case): Ann. Surg., xlv, 792.
 - Eisendrath and Herzog (1 case): Ann. Surg., 1908, xlviii, 709.
 - Bauman and Lower (1 case): THE JOURNAL A. M. A., May 1, 1909, lii, 1401.
 - Fredet (1 case): Rev. de gynéc. et de chir. abd., 1909, No. 2, Surg., Gynec. and Obst., 1909, ix, 696.
 - Bugbee (1 case): Med. Rec., Nov. 5, 1910.
 - Connell (1 case): Report herewith.
 - Griffith (2 cases): Brit. Med. Jour., April 25, 1908, p. 979.
 - Kaarsberger, H. (2 cases): Ugesk. f. Laeger, 1909, lxxi, 557. Abstracted in THE JOURNAL A. M. A., Aug. 21, 1909, p. 663.
 - Fischer (2 cases): Zentralbl. f. Chir., 1909, No. 33, p. 1156.
 - Martin (2 cases): Old Dom. Jour. Med. and Chir., 1910, x.
 - Rossi (3 cases): Zentralbl. f. Chir., 1908, No. 16, p. 510.
 - Ponomarew (3 cases): Zentralbl. f. Chir., 1909, No. 13, p. 477.
 - Gibson: In a personal communication reports four cases.
 - Yoshikawa (5 cases): Zentralbl. f. Chir., 1909, No. 18, p. 655.
 - Frank (5 cases): Arch. f. klin. Chir., 1907, No. 2; Year Book of Surg. (Murphy), 1908, p. 535.
 - Brewer (6 cases): Am. Jour. Med. Sc., May, 1908, cxxxv, 635.
 - Johnson (7 cases): Ann. Surg., 1909, 1, 715.
 - Tromifow (20 cases from the Russian literature): Zentralbl. f. Chir., 1908, No. 10, p. 312.

The non-operative cases were reported by Frank, 34; Ponomarew, 29; Trofinow, 13; and Rossi, 3.

The kidney seems to be as well protected from injury as other of the abdominal viscera, if not better, yet the kidneys are the most frequently injured in case of abdominal contusion. The fact that there are two kidneys, one on each side, of course, accounts in a large measure for this frequency.

ETIOLOGY

The theory as to the cause that may explain a majority of the cases is that of Küster, in which the rupture is supposed to be due to hydraulic pressure acting through the full vessels and the pelvis and causing the organ to burst along lines radiating from the hilum toward the point of maximum impact against the lower ribs, the opposing resistance being supplied by the vertebral column.

Abdominal contusion most liable to cause damage to viscera, is that in which there is a sudden, strong impact against the anterior or lateral abdominal wall, often when the patient is taken unawares, and the abdominal muscles do not have time to contract in self-defense; such contusions are inflicted by a fall against a sharp object or blows from a hoof, a fist, a thrown ball, a carriage-pole, or a piece of wood from a circular saw. A simple fall on the feet, or muscular action alone, may produce rupture of the kidney; a dozen of the latter variety of cases are on record.

Another type of injury, such as being run over by a wheel, or crushed between car-bumpers, more often results in a complicated rupture. There is usually very little or no external evidence of injury in the former class of cases.

CLASSIFICATION

Ruptures of the kidney must be divided into complicated and simple. In the former there are additional injuries to other organs or structure; in the latter the kidney is the only organ damaged. A classification has been based on the extent of the damage to the kidney, but this is of very little clinical or practical value.

Simple rupture of the kidney is much more common than are the complicated injuries. In Watson's and Neilson's cases 512 were simple, and 125 complicated. This approximate proportion is maintained in the report of Frank, in which there were thirty simple and nine complicated.

SYMPTOMATOLOGY

A most important element in the recognition of these cases is attention to the history of the accident and the nature of the traumatism.

Shock and collapse are often absent or but transitory, and the lack of recognition of this fact has been the cause of mistaken diagnoses and delay in proper treatment in a great many cases.

Pain is usually very severe at the time of the injury. It may be diffused or localized in the kidney region. Its duration varies greatly, but it is usually present and is followed by tenderness and a dull ache in the region of the ruptured organ.

Rigidity of the muscles over the kidney, with tenderness on palpation, is practically constant, and is of great importance.

Hematuria is generally present; it may be delayed in onset, or may occur with the first urination. In cases in which the ureter is blocked with a blood-clot, with a

transverse tear of the pelvis or ureter, or with complete pulpification of the organ, hematuria may be absent. It must be remembered that hematuria following trauma in the region of the kidney is not pathognomonic of injury to that organ, as the bleeding may originate in the bladder or urethra, or there may be a hemorrhagic nephritis, or idiopathic or other types of bleeding from the kidney.

Tumor in the kidney region, may be absent, may develop within a short time, when it is usually due to a perirenal hematoma, or it may be of late development. In such cases it is probably caused by infection, or more rarely, secondary hemorrhage.

DIAGNOSIS

The diagnosis of kidney lesion demanding an exploratory incision, may generally be based on a history of a particular abdominal contusion, with rigidity, tenderness or tumor and hematuria.

TREATMENT

Treatment may be expectant or operative. A most important feature of the treatment, and of great influence on the result, is a recognition of the indications for treatment, and the selection of the proper line of treatment for the individual case. The results are important from this point of view, and Watson's series shows, that with expectant treatment 27 per cent. of the simple ruptures resulted fatally; and in the complicated injuries that the death-rate was 91 per cent. Radical operative treatment, i. e., nephrectomy, resulted as follows in Watson's and Neilson's series:

Complicated, 51 with 21 deaths (41 per cent.).

Simple, 132 with 30 deaths (22.5 per cent.).

Conservative operative treatment, i. e., gauze packing, drainage or suture, had the following results:

Complicated, 18 with 7 deaths (38 per cent.).

Simple, 107 with 9 deaths (8.5 per cent.).

Of the 125 cases in which conservative treatment was employed, gauze pack or drainage was done 115 times, with sixteen deaths; suture of the renal wound or wounds was done ten times, with no fatality.

The decision between expectant and operative treatment is a momentous one, as the fate of the patient often rests on this decision. Concerning the former Neilson says:

So-called expectant treatment is permissible only in cases in which the local symptoms are insignificant, constitutional symptoms absent, and slight hematuria alone directs attention to the probability of renal injury.

Yet there are many severely damaged kidneys which if left alone, will cause death or prolonged illness, and in which the local symptoms are insignificant, the constitutional symptoms absent, and with but slight hematuria. There may be no differential sign or symptom between slight injury and complete rupture; therefore it would seem advisable to expose the kidney and arrive at a positive determination as to the extent of the injury in every case in which we can arrive at a probable diagnosis of injury of the kidney, and not guess at the seriousness or the triviality of the injury. By so doing a certain number of unnecessary exposures of the kidney will be made, but, on the other hand, a certain number of deaths will be prevented, and many prolonged illnesses and unsatisfactory results will be substituted by prompt and satisfactory recovery. As it is, in certain cases,

impossible to separate the slight from the extensive injury it behooves one to treat all cases as though they were serious until they have been proved to be otherwise.

All operations for rupture must be exploratory at the onset, and may then be either radical or conservative. Nephrectomy has, in the past, been employed quite extensively; but, from a theoretical point of view, from the experiments of Dolgoff,⁵ who found that severe laceration, even tearing the organ in halves, in dogs, did not result fatally; and from the clinical evidence, in the frequent, satisfactory recovery after conservative measures, it would seem that packing, draining or suture might be more frequently substituted for nephrectomy. Gauze packing or drainage is the most common method of conserving damaged kidney, being employed 115 times in 125 cases in which conservation was attempted. Primary suture has been performed on but few occasions, though it is the ideal method of dealing with such injuries. Watson was able to collect reports of eight cases, and Neilson added two that were treated in this manner. Since the report of the latter I have been able to find reports of three additional cases in the literature, which, with the case reported in this contribution, makes a total of fourteen. In these fourteen cases there was no death, and only two unsatisfactory results. In one (Delbet) a secondary nephrectomy was necessary, and in the second (Watson) a pseudo-hydronephrosis and fistula resulted.

In every case the sutures, when placed, caused satisfactory hemostasis. In one of Griffith's cases, that of a man aged 48, the mattress sutures pulled through the very friable organ, and the fibrofatty capsule was sutured enclosing the kidney as in a bag, with a satisfactory outcome. Dolgoff found that wounds of the kidney healed much more rapidly if the capsule was preserved, and especially if its cut edges were united. In my own case the capsule of the upper third of the organ could not be united, yet the result was entirely satisfactory. In this case the wound was closed with interrupted mattress stitches that passed deeply into the parenchyma, and the wound margins were then accurately coapted by over-and-over superficial stitches.

In Fredet's case the patient had a nephritis, and it was for this reason that nephrectomy was not done. As a consequence of the most encouraging result in this case Fredet, in his enthusiasm, says: "Nephrectomy is indicated as a late operation only where there is widespread infection."

REPORTS OF OTHER CASES

A synopsis of cases collected from the literature since Neilson's article is given below:

GRIFFITH: A man aged 22, while running, slipped and fell, striking the left side below the ribs against the sharp edge of a piece of coal. He was able to walk some distance and climb two ladders, felt generally bad, but had no particular pain in the side. Five minutes after the injury he urinated what seemed to be pure blood, after which he felt much worse and nearly fainted. On admission to hospital he complained of pain all over the abdomen but more especially in the left lumbar region. One and three quarter hours after admission, the kidney was delivered through an oblique lumbar incision and was found to be torn on its posterior aspect at about the middle, extending from the convex surface to the hilum. Suture of the wound with catgut was done, which controlled the hemorrhage; a gauze wick was inserted to the kidney and the lumbar wound closed. The patient was discharged, well, on the eighteenth day.

GRIFFITH: A man aged 48, was struck on the left loin by one end of a heavy timber. On admission to the hospital shortly after the injury the patient was in a kneeling posture, being unable to either sit or lie down because of the intense pain. The pulse was good, but there was vomiting of bile, tenderness and dulness in the region of the kidney, with hematuria. Exploration revealed the lower third of the kidney nearly detached, with a longitudinal tear extending along the mid-line of the convex surface of the upper portion. Mattress sutures were inserted to close the wounds, but many of them cut through the abnormally friable organ. The fibrofatty capsule was then sutured, enclosing the kidney as in a bag. The lumbar wound was closed with a tube drain reaching to the capsule. The patient was discharged, well, on the twenty-third day.

FREDET: A male was struck in the left flank by a heavy falling body; there was brief loss of consciousness, followed by severe pain in left side with a hematoma but no free fluid in the peritoneal cavity. Catheterization revealed hematuria. Exploration revealed lesions on the anterior and posterior surfaces of the kidney. Nephrectomy was thought to be indicated, but because of a nephritis, it was deemed safer to suture the tears in the organ. Recovery ensued.

CONCLUSIONS

1. Owing to the rapid recent increase in the number of reported cases, there is reason to believe that sub-parietal rupture of the kidney is more frequent than the literature would lead one to believe.

2. Shock, injury to other organs, and external evidence of trauma are frequently absent.

3. A history of an abdominal contusion, followed by rigidity and hematuria, is sufficient data to lead to an exposure of the organ.

4. Slight lesions, and complete rupture of the kidney, can not be differentiated by clinical signs or symptoms.

5. Proof that there is an absence of serious rupture is called for before instituting the so-called expectant treatment.

6. Nephrectomy should be reserved for very extensive disintegration of the organ.

7. Conservative treatment, preferably by suture, is indicated in the majority of cases.

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THE ADENOID AND TONSIL OPERATION*

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The general practitioner first comes in contact with the child, and on him must largely rest the responsibility of recognizing the symptoms of these conditions as they appear in extreme cases. He should, moreover, appreciate the fact that there are remote and often less-pronounced symptoms connected with the adenoid and tonsil question that are as much a menace to the health as the others. It is not difficult to decide that a child who presents very large tonsils and adenoids and who breathes with open mouth, vacant expression, etc., should have an operation that removes the mechanical obstruction to a normal breath-way. But there are many cases in which the mere mechanical obstruction is the least important of the considerations involved, and the decision must often be based on symptoms not directly connected with the nose and throat, and which we are coming to recognize more and more fully as proper subjects for the operation, involving as much for the

5. Dolgoff: New York Med. Jour., 1900, lxxii, 871.

* Read at a meeting of the Southside Branch of the Chicago Medical Society, Dec. 13, 1910.

child's future as the other. In adults, too, we are now removing the tonsils frequently for far more important reasons than that they are large, and at times in cases in which, though very little tonsillar structure is visible on casual inspection, much is found to be imbedded in the tonsillar triangle.

I shall not attempt to speak extensively of the anatomic features of this subject. It must be recognized that tonsils when they are diseased form a culture medium for bacteria, and the pathogenic germs often enter the system. Rheumatic fever, myocarditis, endocarditis, nephritis, arthritis and arthritis deformans, adenitis and other conditions and infections are thus traced to the tonsil as the primary focus in many cases. The cicatrized tonsil, the result of chronic inflammation, often giving rise to peritonsillar abscess, should be mentioned in this connection.

The faucial tonsils and the pharyngeal tonsil are a part of the so-called Waldeyer's ring, draining into the secondary lymphatic ring; the faucial tonsil drains into those glands situate at the angle of the jaw, in front of the sternocleidomastoid muscle, and the hyoid; the pharyngeal tonsil drains directly into the retropharyngeal glands. These connections will explain very definitely the close relationship and frequent involvement of these glands in diseases of the lymphoid structures. It should be a routine practice to examine the glands at the angle of the jaw and along the border of the sternocleidomastoid in every case brought to us for treatment of the tonsils. It is surprising in what a large number of cases the infection has traveled that far, with a resulting enlargement of the glands. The manifest treatment should then be directed, of course, not to the gland primarily, but to the infecting tonsil, and yet in many cases the latter have not been the subject of concern by patient or friends. In these cases until the tonsils are removed other treatment is practically useless.

The pharyngeal tonsil is a mass of lymphoid tissue lying in the vault of the nasopharynx, and its upper, posterior wall; a mass somewhat lobulated longitudinally with a marked median recess, when markedly enlarged, and extending laterally into the fossæ of Rosenmüller. In addition to this there is sometimes found a mass of lymphoid tissue called the tubal tonsil on the posterior upper lip of the Eustachian cushion, and very often bands of tissue extend from this across the fossa. Scattered masses of lymphoid tissue are often seen also over the pharyngeal wall, extending down over the oropharynx. This condition of the pharynx is often indicative of the presence of adenoids, especially if the faucial tonsils are also enlarged. In some extreme cases, I have found masses of the lymphoid tissue extending down from the Eustachian eminence over the upper surface of the veil of the palate for a considerable distance. In such cases, manifestly, the curette could not complete an operation.

Rarely is it possible to make a satisfactory examination of the child's nasopharynx with the rhinoscope mirror. Occasionally a child, tractable and unafraid, will allow the tongue to be depressed and the small mirror to be carried to the pharyngeal wall, when a complete view of the nasopharynx is sometimes possible. Ordinarily, however, palpation is necessary and will give the information needed.

I prefer to have the child held on the lap of the nurse, arms and feet confined by the nurse, the head of the child against the shoulder and steadied by an assistant

standing behind. The examiner then seats himself in front of the child. A gag is inserted in the left side of the child's mouth and held by the examiner's right hand while the clean index-finger of the left, previously oiled, is carried up behind the palate into the vault.

The nasopharynx of very young children can be examined in this way, and one sometimes finds adenoids in children as young as three or six months which need an operation when interfering with the nourishment of the child.

Another method equally good is to have the child on the left side of the examiner sitting in the lap of the nurse, or in a chair; then the head, grasped with the open left hand, is held firmly against the left side of the examiner, the fingers are placed under the ramus of the jaw, the thumb pressed against the cheek, carrying it between the teeth, thus forcing open the mouth, and preventing the child from closing it on the examiner's fingers. The first finger of the right hand is then easily slipped behind the uvula and up into the nasopharynx. This can be done gently and quickly, but seldom without causing the child fright and some bleeding, as the lymphoid mass in young children is friable, soft, and easily injured. Cocainization of the nasopharynx is sometimes desirable, but usually unnecessary. In very young children it is better to use the little finger for palpation.

Hypertrophied faucial tonsils are easily recognized. Lying between the anterior pillar (the palatoglossus muscle) and the much thicker posterior pillar (the palatopharyngeus muscle) is the triangular tonsillar area. It is divided by the plica triangularis, a thin sheet of mucous membrane passing from the upper third of the anterior pillar downward and backward to the posterior pillar. This plica is the usual antero-inferior limitation of the lymphoid tissue of the tonsil and is adherent to the surface of the tonsil. In simple hypertrophy, in children especially, it is often fused in the tonsillar mass in which the enlarged tonsil occupies not only the space inclosed by the plica, and anterior and posterior pillar, but that below the plica—an inferior lobe—reaching at times the border of the base of the tongue. In projecting tonsils the enlargement may be inward, a large mass extending quite to the median line of either side, or the mass may be broadened from before backward and above downward but projecting very little.

Another variety, often encountered in practice, is the imbedded form. The tonsil is generally confined to the supratonsillar fossa, or it may include almost the entire triangular area. Such tonsils do not project into the throat on casual examination, but have enlarged outward, tonsils of considerable size being sometimes completely imbedded in the tissues of the lateral wall and soft palate. By palpation, a method that should always be employed, it is often found as a distinct mass as large as a filbert, or larger, entirely hidden in these tissues. Such tonsils can be recognized often by causing the patient to retch, when the muscular action projects them into the fauces. At other times a blunt hook can be used to pull forward and press outward the anterior pillar, when they are brought plainly into view. This is the variety that is frequently found in the toxic conditions spoken of, and when they are removed there may often be expressed from the crypts numerous masses of white, cheesy exudate.

These are the tonsils also overlooked by the practitioner until the infective results of their diseased condition have already been brought about. These are the

tonsils, too, on which so many inadequate operations are done, leaving much of the lymphoid masses still in the fossæ to continue their ravages on distant structures through systemic absorption. This may be partly explained by the fact that the tonsils are considered an operative field by the most inexperienced, and to this fact nothing has contributed more than that remarkably ingenious instrument, the tonsillotome, so easily manipulated that it appeals at once to every tyro.

The tonsillotome is not an instrument for every case, and indeed a very limited number only are suitable for its use. In the somewhat pedunculated tonsils, projecting into the fauces and easily engaged in the fenestrum of the instrument, a good operation can sometimes be done easily and swiftly. In other cases the instrument is an excellent one to cut off an enucleated tonsil which has been grasped and drawn inward by suitable vulsellum forceps. The ease of manipulation of the instrument and the idea once prevalent that a tonsillotomy was an all-sufficient operation in any case, has led to the universal use of the instrument. Our ideas, as specialists, have changed, and the instrument has been relegated to its proper position, for carefully selected cases only. It is not possible where the major portion of an imbedded tonsil lies submerged in the triangular fossa to do a proper enucleation with a tonsillotome alone, and to attempt to do it with this instrument is poor surgery, and not for the best interest of our patients. I condemn the practice because of these facts, and because it is possible to do an operation, in nearly every case, that is adequate and surgically right.

Let me preface my remarks on the method I follow with the statement that I have no particular instrumentarium to recommend for the use of others. Every operator has one to which he is accustomed. Every man should work with the tools he likes best, but I should insist that, if the operation is indicated, one should be satisfied with nothing less than the complete excision of the tonsil with its underlying capsule and the removal of every vestige of the adenoids in the nasopharynx, as far as possible. However, the matter of whether tonsillotomy is or is not advisable in some cases is one on which there has been, and is now, much debate, and one in which I should not care to be arbiter. It seems to me, however, that if the removal of the tonsils is indicated for any other reason than that they are a mechanical obstruction, the operation should include the crypts of the mass, which usually reach the underlying capsule, and therefore there should be a complete enucleation.

TECHNIC

The child should be in the hospital, if possible, the night before the operation, in order that it may become accustomed to the surroundings, and have the advantage of a night's rest.

I think it is not essential to precede the operation with any local treatments by antiseptics, although a mouth-wash and a nasal douche in the morning may be used.

Ether is the anesthetic for which no adequate substitute has been found. Since the investigation of Dr. Hinkle, given in a paper before the American Laryngological Association a few years ago, and of other writers, many specialists in this country have given up the use of chloroform and rely entirely on ether. I have used some of the shorter anesthetics, but have not been pleased with them, and prefer ether, as a rule.

Nitrous oxid with oxygen is safe, and can be prolonged almost indefinitely, but, since administration is so much interfered with by the operation itself and the profuse bleeding, it cannot be satisfactorily administered continuously and in these cases the period of unconsciousness is of too short duration, while relaxation is not as complete as with ether. The final stages of the operation, therefore, are apt to be performed on a struggling, semiconscious child, even when employed for adenoids alone. The same may be said of ethyl chlorid and ethyl bromid, although the effects of these are rather more prolonged. The child should be quite profoundly anesthetized, so that the subsequent operation need not be too much delayed by further use of the anesthetic.

There is no better point than this at which to insist that an adequate tonsil operation is often by no means an easy task. It should be done under a general anesthetic, in children up to 15 years of age, certainly; and in certain circumstances in adults. In adults, however, I prefer local anesthesia—of which I shall speak presently—if the patient has a little courage and can control the reflexes of the tongue and pharynx sufficiently not to interfere with the necessary surgical manipulation.

For illumination I use the Jansen photophore (an electric head-lamp), and therefore prefer to operate in a darkened room. I have the child placed in a partially prone position on the operating table, the left arm drawn backward under the body, the right shoulder being pulled backward by the assistant, to whom is entrusted the holding of the gag, which is placed in the right side of the mouth. I prefer the Allingham gag. The child's face is brought to the edge of the table, and underneath the head a Kelly pad may be placed, all pillows being removed. The gag is very apt to slip out of position unless held firmly, and the assistant should be cautioned regarding it. In this position there is no danger of blood reaching the larynx and trachea, and there need be no change of position in removing both tonsils and adenoids.

It seems to me that one of the most important steps in the operation is the adequate enucleation of the tonsil. To accomplish this a sharp knife, bent on the flat, is placed behind the anterior pillar, cutting from above downward, through the mucous membrane reflected from the tonsil to the posterior surface of the pillar or severing adhesions when they exist. In children, always, and sometimes in adults, as a rule I cut through the plica triangularis, severing it from the attachment to the pillar. In adults it is sometimes possible to save this sheet of mucous membrane by passing the knife from above downward and backward between it and the tonsil, the under surface of which it covers. Then the velar lobe may be freed from its attachment to the posterior pillar in the upper angle, in the same way. The latter is not often necessary in a child. A hook knife may be necessary, too, for freeing the very upper angle, the tonsil being seized with a vulsellum forceps and drawn inward. This is seldom needed. After these attachments have been properly freed, a surgically clean finger is passed around the tonsillar mass, firmly, enucleating it still more from before backwards by lifting the mass with its underlying capsule from its bed on the superior constrictor muscle, as far as possible. Some force is sometimes needed in passing the finger between the anterior pillar and the tonsil and underneath the tonsil. I believe that this complete enucleation is a most important part of the operation, as was

well emphasized by Shurly in the last meeting of the A. M. A. at St. Louis.

The tonsil is then seized with an Ingals tonsil forceps and drawn inward with slight force. It is often seen almost completely everted. Over the handles of the forceps a wire loop is then carried, and over the head of the instrument to its base, and the loop is then tightened. Great care should be taken here not to include the uvula in the loop of the snare. I cut the tonsil off rapidly with this cold wire snare in children, as it is quite friable. In older children and adults the loop is closed slowly as it crushes through the tonsil. In adults it is so fibrous that the milled wheel of the snare will have to be used to sever it. Indeed, a larger wire than a No. 5 piano wire, which I ordinarily use, may be needed and a more powerful instrument than the one I generally employ (the Bosworth snare, modified).

The lower tonsil, the left, is removed first, then the right. The Rhodes punch forceps may be needed, if small masses of lymphoid tissue remain in the triangle, and these are easily recognized and can be carefully picked out. The space can be well exposed with a small, long-stem double tenaculum and thorough examination made.

Bleeding should always be controlled before the adenoids are removed. Usually pressure with small sponges attached to uterine hemostatic forceps is all that is necessary. I always have ready a pair of Jackson hemostatic forceps and a Mikulicz clamp. In some cases a ligature may be passed over the Jackson forceps and the bleeding vessel ligated. Seldom is this necessary.

In the removal of the adenoids I find the Lowenberg forceps the most satisfactory, as the finger of the left hand may be held in the nasopharynx and the tissue removed can be controlled absolutely. I usually reinforce this by passing a Gottstein curette to remove small vestiges of lymphoid tissue on the upper and posterior wall. I have at hand also Freer's pernasal forceps to remove small masses in the fossæ of Rosenmüller or other portions of the vault. Bleeding is of course very free at this time, but ceases in a very short time. Sometimes it may be necessary to carry a sponge into the vault with a finger of the left hand and use pressure for a brief time.

The child is then placed in bed for a few hours, a light diet is recommended for four days, and the patient kept in the house for a week. Twenty-four hours in the hospital is usually sufficient. A gargle of 1 per cent. solution of phenol may be used every hour for two or three days, and less frequently for a week. Iodole may be insufflated through the nose three or four times a day.

I have found the method described one that is adequate for every kind and size of tonsil, and is radical. I believe, too, that there is much less danger of hemorrhage in the snare operation, although bleeding sometimes takes place, whatever method is used, and one must always be prepared for such an emergency.

Local anesthesia may be used for adults, but one cannot promise absolute freedom from pain and discomfort, although I have sometimes removed the tonsils with scarcely any. If it were perfectly safe to use injections of cocain and adrenalin this would be quite ideal. I have used the method a good many times. Reports of cases of death following such injections were made at the last session of the American Medical Association at St. Louis, and I should hesitate to recom-

mend it as a routine practice. On the other hand, the use of adrenalin (1/1000) swabbed over the surface of the tonsil and pillars, followed by the local application of a 10 per cent. solution of cocain freely, or the powdered crystals of cocain have had no fatalities so far as I know. When injections are made, a 1 or 2 per cent. solution of cocain is made, to a dram of which 5 to 10 minims of a 1/1000 solution of epinephrin, adrenalin or suprarenalin (fresh) may be added. The injection should be carried deeply into the base of the tonsil along the line of the anterior pillar, about 1/2 inch from the border of the pillar, using 10 to 15 minims of the solution for each tonsil. I now use local applications, usually of cocain crystals alone.

The instruments employed are a tonsil separator, curved tonsil knives, for each tonsil, a hook-shaped knife for the disengaging of the velar lobe, vulsellum forceps (Casselberry's), tongue depressor, sponges, etc. I favor seizing the tonsil with the vulsellum forceps first and then dissecting. A Freer right-angle knife is passed deeply into the tissues between the anterior pillar and the tonsil and brought down along the posterior edge of the upper posterior surface of the plica triangularis, saving this intact, which can be done in many instances. I believe, however, we will get better results usually if this plica is removed also. The same procedure is carried through with the separation of the posterior pillar and the tonsil, care being taken not to cut into either pillar. While the assistant depresses the tongue, traction is made on the partially separated tonsil and the hook-knife is carried over the top of the tonsil, almost at right-angles to it at first and separation of the tonsil from above downward, with the underlying portion of the capsule, is begun. As soon as the velar lobe is free, the remainder of the separation can be done with the Freer flat knives, care and discretion being used so as not to remove any of the underlying muscular tissue of the superior constrictor, on which the tonsil lies. The cutting should then be done downward and inward toward the fauces. The operation is often comparatively painless, with moderate hemorrhage. This same operation may be done equally satisfactorily under ether.

In this article I have given the details, as briefly as possible, of a method that has proved very satisfactory in a large number of cases. While the technic is rather difficult, at first, it can be acquired, and the results are usually so good that the painstaking care is justified. It enables one to deal with every form of tonsil, and leaves the throat in a surgically satisfactory condition.

Peoples Gas Building.

Elbow Sign of Scarlet Fever.—C. Pastia, in the *Tribune Médicale*, states that he found the characteristic sign he describes in 94 out of 100 scarlet fever patients in Groszovici's service at Bucharest and in all of twenty-three scarlet fever children examined in Paris. The sign is an exanthematous, linear, continuous eruption, localized in the bend of the elbow and very intense. At first the eruption is pink, then it turns a deep red or "dregs-of-wine" color or may resemble ecchymosis. The linear eruption is generally single but there may be several lines in some cases; between them the eruption resembles that of the ordinary scarlatinal exanthem. This linear exanthem develops early, he says, and persists to the end of the general eruption, leaving a pigmented line as it subsides. It is often useful for differentiation of the disease when the general exanthem is too faint to be positively recognized or is already past. He has never found it in any other eruptive diseases.

THE PRESERVATION OF ANATOMIC DISSECTIONS WITH PERMANENT COLOR OF MUSCLES, VESSELS AND ORGANS

A SUPPLEMENTARY NOTE

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This supplementary note is to record the changes and improvements in the method described in the preliminary note published in *THE JOURNAL* (Aug. 22, 1908, p. 642).

Certain subjects only will secure the color by the embalming solution and the method. They are cadavers whose muscles are of a dark color before being embalmed. This is determined before the embalming by making a long and deep incision (3 inches by 1) into the deltoid or the femoral vastus externus. If the muscles show a black cherry color, the preparations will present a satisfactory color. If the muscles show a deep red cherry color, they may make good preparations, but not so surely. If the muscles show a light red cherry the color of the muscles in the preparation will not be satisfactory and no ultimate treatment or procedure will improve it. The embalming solution and the method preserve the color that the muscles present in the subject, but will not give a dark color to muscles which present a light color in the subject before embalming. As a rule, negroes present blacker muscles than white subjects. It took a great deal of time and labor to find out these important facts.

I have finally reached the conclusion that the following steps are the best to produce satisfactory results. They are somewhat different from the ones described previously.

1. Use only lean male subjects. Fat, however small in quantity, makes bad preparations.

2. Embalm the subjects with the following formula:

A: Arsenious acid (saturated solution) 2.5 gallons; nitrate of potash, 1 pound; liquor formaldehydi 6 ounces. B: Alcohol, 16 ounces; liquefied phenol (carbolic acid), 6 ounces; glycerin, 16 ounces; creosote (beechwood), 2 ounces. The two solutions, B and A, must be mixed and strained. The proper color may show only a few days after the embalming. Articulations and visceral preparations should be dissected without delay.

3. The arteries and the veins may now be injected, if desired.

4. Now partition the subject off, that is, divide it into a number of pieces according to the preparations that it is desired to make.

5. Place each piece in a glass jar with a solution of 1 ounce of liquefied phenol to the gallon of water (C 1; see previous article).

6. Then place the specimen in an empty jar with a lid, and leave it to drain. Hang with hands and feet up. The draining requires about ten to fifteen days. Visceral preparations should not be allowed to drain more than two or three days.

7. When the dissection is completed the preparation should be placed in a jar containing a solution of 1 ounce of liquefied phenol to 1 gallon of filtered water (C 1).

8. When the dissection has ceased to purge it is placed in an empty glass jar with a lid on and is left to cure. Visceral preparations should not be cured.

9. The arteries must be painted with a vermilion red, and the veins with cobalt blue. The moist (gouache) colors are good. They should be allowed to dry thoroughly before the dissection is placed in the first solution. This drying requires fifteen to twenty hours. Experiments seem to indicate that the ordinary house-paints prepared ready for use have the

advantage of doing away with these long hours of drying. The vessels to be painted with oil paints should be well mopped with cheese-cloth or absorbent gauze, and left exposed to the air for about two hours. They are then dry enough for the oil paint to take or stick. Two thin coats are better than a single thick coat. After the painting is done, leave the vessels exposed to the air for about two hours; then place them in the permanent solution.

10. Finally, the preparation is placed in a glass jar filled with a solution of 20 ounces of alcohol to every gallon of filtered or distilled water (A 20; see previous article). Visceral preparations, brains, and articulations and ligaments seem to do better in a solution composed of 20 ounces of alcohol and 1 ounce of liquor formaldehydi to the gallon of water (A 20 F 1; see previous article). The alcohol seems to prevent the snow-white bleaching action of the formaldehyd and the formaldehyd the ivory bleaching action of the alcohol.

11. The solutions should be changed as soon and as often as they become slightly cloudy or discolored. The refraction of the water has often a very marked effect in reducing the intensity of the dark brown color which the muscles present when they are out of the solution. If this could be remedied, it would be a great improvement.

I have experimented extensively with solutions of glycerin by immersing in them preparations without proper color to improve their color. It did have that result, but as soon as the preparations were placed in A 20 or any other solution the improved color disappeared and the original unsatisfactory color returned. Instead of placing these preparations in A 20 I placed them, after the curing, in paraffin oil or ordinary white petroleum oil and the improved color remained, but after awhile the oil became cloudy.

Attempts were made to paint muscles with bad color. Moist colors (brown madder) gave a good result, but in course of time the color fades. Oil paints stand better, but at close range they do not look natural.

On being removed the brain should be placed in a solution composed of 1 ounce of liquor formaldehydi and 20 ounces of alcohol to 1 gallon of water (A 20, F1). The solution must be changed as soon and as often as it becomes discolored by the blood. Preparations of the brain which require dissections should be made before the brain hardens too much. Those preparations which require only sections should be done when the brain has hardened.

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TYPHOID MENINGITIS

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Clinically and pathologically typhoid meningitis is of especial interest, because of the common occurrence of nervous symptoms during the course of a severe typhoid, and because of the several types of meningitis that occasionally occur. R. Cole¹ has critically reviewed the subject of typhoid meningitis, adding a number of new cases to a list based on bacteriologic findings. He divides the cases into three groups:

1. Meningism. Symptoms of meningitis are present but there are no meningeal lesions and no direct relation between the bacteria and the symptoms. This condition is produced by the toxins in other specific fevers.

2. Serous meningitis of Quinke, in which there are symptoms of meningitis; the brain shows, microscopically, edema and round-cell infiltration, and a serous

1. Johns Hopkins Hosp. Rep., 1904, v, 12.

exudate is present, in which is found the typhoid organism.

3: Suppurative or purulent typhoid meningitis.

For purposes of more definite classification we prefer to subdivide Class 3 into purulent typhoid meningitis with and without intestinal lesions.

The difference in symptoms between a severe typhoid with marked nervous symptoms and meningism is very slight in many cases, and of degree only. Muscular twitchings, severe headache, delirium, carphologia, stiff neck and occasional presence of Kernig's sign are seen in many typhoids, without special features. A step further and the presence of palsies, convulsions, eye lesions and vomiting makes the diagnosis of meningism or meningitis, depending on the cellular and bacterial content of the cerebrospinal fluid. A differential diagnosis between meningism and serous meningitis is made by the presence of the typhoid bacillus in the cerebrospinal fluid of the latter. Is this sufficient evidence? Is it not possible that the typhoid bacillus occurs in the cerebrospinal fluid during the course of a fair proportion of typhoids, just as it is found in the urine, gall-bladder and blood in many cases? If the typhoid bacillus is present in the cerebrospinal fluid as part of a general distribution of the organism, we must assume that in many cases it produces very few, if any, symptoms and no pathologic changes; and in other cases that

Rocaz and Carles² report eight cases of typhoid fever in children from 4 to 12 years old, in all of whom the classical symptoms of meningitis, including Kernig's sign, strabismus and irregular pupils, were present. Lumbar puncture showed an increase in tension of the cerebrospinal fluid in all of the cases. In two cases there were a number of lymphocytes in the fluid, but in the remaining six cellular elements were lacking. Cultures from the fluid were all sterile. A marked improvement followed spinal puncture in all of the cases. The authors divide the contents of the cerebrospinal fluid of meningeal typhoids into four classes: A. Containing pus, typhoid bacilli alone, or, at times, other organisms. B. Colorless fluid containing the typhoid bacilli. C. Clear fluid with abnormal cell content, as excess of lymphocytes. D. Normal fluid but under high tension. R. Stein³ also reports three cases with symptoms of meningitis in the course of typhoid fever in which lumbar puncture revealed a sterile fluid. Improvement followed the withdrawal of the fluid.

Under the head of serous typhoid meningitis Cole reported eight cases from the literature and added five more of his own. The interesting points are brought out that in one case recovery occurred and in several others the meningeal symptoms cleared up, the fatal issue being due to other causes. The time of the onset of the meningeal symptoms was variable and in severe

FINDINGS IN CEREBROSPINAL FLUID OF TWELVE PATIENTS WITH TYPHOID FEVER

Severity of Case.	Drops per Minute.	Color of Fluid.	Therapeutic Effect.	Culture.
1. Average	118	Clear.....	None.....	Negative.
2. Average	32	Clear.....	None.....	Negative.
3. Average .....Increased pressure.....		Clear.....	None.....	Negative.
4. Average .....Increased pressure.....		Clear.....	None.....	Negative.
5. Mildly nervous.....	104	Clear.....	None.....	Negative.
6. Mildly nervous.....Increased pressure.....		Clear.....	None.....	Negative.
7. Nervous	80	Clear.....	None.....	Negative.
8. Nervous	?	Clear.....	None.....	Negative.
9. Nervous	190	Clear.....	None.....	Negative.
10. Nervous .....Stream		Clear.....	None.....	Negative.
11. Nervous .....Stream		Clear.....	None.....	Negative.
12. Nervous .....Stream		Clear.....	None.....	Negative.

it produces marked symptoms and no pathologic changes; and again, marked symptoms and definite lesions of meningitis. We have studied the cerebrospinal fluid from twelve patients with typhoid fever of varying severity with a view of determining the bacteriologic content and the possible therapeutic benefit to be derived from lumbar puncture in cases with marked nervous symptoms.

Cultures were made from the cerebrospinal fluid on bouillon and slant agar. To a large tube of bouillon about 7 or 8 c.c. of cerebrospinal fluid were added and about 1 c.c. on slant agar. The cultures gave no typhoid growth in any of the twelve cases. Two tubes showed a growth of staphylococcus, which was probably a contamination, as the cases were complicated by furunculosis, and by a bed-sore in one instance. In the six nervous cases, delirium, carphologia, involuntary discharges, and, in one case, stiff neck were present, and in none of them was positive improvement noted after lumbar puncture. In all cases, after the fluid necessary for cultures was withdrawn, the fluid was allowed to escape until it came to about twenty drops a minute. None of the cases showed any unfavorable symptoms after the lumbar puncture. The pressure under which the fluid escaped was almost uniformly increased in the very nervous cases. The cases were all typhoid fever as determined by the presence of a positive agglutination test, or a positive blood-culture. They were in the second to the fourth week of the disease.

cases the symptoms differed only in degree from those of a severe typhoid. In other cases the symptoms of meningitis were classical. Since Cole's paper cases of serous typhoid meningitis have been reported by Nieter,⁴ A. Schutse,⁵ Sicard,⁶ and E. H. M. Milligan.⁷

We wish to report a case of serous meningitis occurring in a typhoid patient during the fourth to fifth week of the disease, from whose cerebrospinal fluid a motile bacillus was recovered which was agglutinated by the patient's serum, which previously had agglutinated known typhoid bacilli.

CASE 1.—History.—P. Y., a middle-aged Austrian laborer, entered Cook County Hospital, September 29, 1909, on the service of Drs. Kerr and Elliot, with a diagnosis of typhoid fever. He gave a history of the usual prodromes of typhoid.

Examination.—On admittance the patient had rapid respirations and flushed face. His spleen was palpable and some abdominal tenderness was elicited; lungs, heart and reflexes seemed normal; temperature was 104, pulse 112, and respirations 28. The urine was acid, specific gravity 1.020, negative for sugar but positive for albumin, and microscopically hyalin and granular casts were found. The white blood-count was 3,500 and agglutination of typhoid bacilli was positive in fifteen minutes in dilution of 1 to 50.

Course of Disease.—From September 30 to October 10 the patient had involuntary discharges, was drowsy and stupid

2. Gaz. hebdomadaire de la Société de Médecine de Bordeaux, 1908, xxxiv, 39.
3. Am. Jour. Med. Sc., 1910, i, 542.
4. München. med. Wochenschr., May, 1908, iv, 1009.
5. Berl. klin. Wochenschr., 1905, xlv, 1465.
6. Semaine médicale, 1905, xlvii, 559.
7. Brit. Med. Jour., 1908, i, 1295.

and occasionally irrational. The temperature ranged from 103 to 105.2 F. per rectum. October 5, examination revealed typical findings of consolidation in the right lower lobe. The respirations became 40. On October 11 the patient had a severe chill and complained of pain in the head and abdomen. On October 13 he had another chill, and examination showed his neck to be rigid and extended. The eyes and reflexes were normal. The Kernig sign was present on the next day, and rigidity of the neck and opisthotonos were marked. Lumbar puncture was made and a clear fluid escaped at a scant 6 drops a minute. Cellular elements in the fluid were few. Cultures from the fluid showed next day a motile bacillus, morphologically like *Bacillus typhosus*, which was agglutinated by the patient's serum in fifteen minutes in a dilution of 1 to 40. From this period the patient grew constantly worse and developed twitchings of the muscles and stupor, and died October 18. Unfortunately no autopsy was obtained.

In reviewing the literature on purulent typhoid meningitis Cole found many cases reported, but few bacteriologically proved. He cites fifteen authentic cases, all showing intestinal lesions. In these cases the onset was acute, beginning in the second or third week of the typhoid and lasting from two to seven days. They were all fatal. Kernig's sign was absent in two out of three cases. Netter has reported 313 uncomplicated typhoid cases with the Kernig sign present forty-four times. Since Cole's communication no other cases of purulent typhoid meningitis with intestinal lesions have been reported.

We wish to report a case in a 4-year-old girl, in whose cerebrospinal fluid typhoid bacilli were present during life, and at the autopsy, were isolated from the meninges, lateral ventricles and cord. Characteristic intestinal lesions were found at autopsy.

CASE 2.—History.—Annie S., 4 years old, Belgian, entered Cook County Hospital, June 20, 1908, on the service of Drs. Abt and Butler. The history of her illness was unsatisfactory, but her parents had noticed that she had had fever, no appetite and had been extremely restless during the week previous to admission.

Examination.—The patient was a well-nourished but restless child with flushed face and sordes on the lips. The neck was not rigid, no herpes were visible and the tongue was dry and coated. The pupils were equal and reacted normally; heart beat 180, and lungs normal. The abdomen showed no rose spots, was not tympanitic, tender nor rigid; spleen was not palpated; knee-jerks were not elicited, neither was there any Kernig sign, ankle-clonus or Babinski sign. Temperature on entrance was 104 F, pulse 136, respirations 36. The white cells were 6,000 per cu. mm.

Course of Disease.—The next day the general symptoms improved. There was no agglutination in a dilution of 1 to 40. On June 24 the spleen was palpable and there was a positive diazo reaction in the urine, which was otherwise normal. The patient was very sick at this time and extremely restless, tossing about continuously. Leukocytes on June 29 were 9,500. On June 30 the patient's condition was very poor. She lay in a stupor with divergent strabismus and stertorous breathing. Heart and lungs were normal. There was still no rigidity in the neck and Kernig's sign and ankle-clonus were absent. The feet were in marked plantar flexion and a suggestion of a Babinski sign was present. Agglutination still was negative. In the evening there was a positive Kernig, rigid neck, opisthotonos, and the respirations were Cheyne-Stokes in character. The pupils were equal but reacted sluggishly to light. The next morning the pupils were unequal, the left being larger than the right, and twitching of the corrugator muscle was noticed over the left eye together with twitching of the left cheek and left hand. Opisthotonos was marked, the hands were in flexion and the back was board-like. The ears were normal. Temperature was 107 F.; pulse could not be counted. By lumbar puncture about seven drams of a turbid, opalescent fluid escaped under pressure. This fluid

was secured in a sterile test-tube and cultures were immediately made in bouillon. A smear made of the fluid was found to contain equal numbers of polynuclear and mononuclear leukocytes and great numbers of short, thin bacilli, mostly extracellular. These organisms were Gram-positive. No tubercle bacilli were present. The patient died at 2:15 p. m.

Macroscopic Post-Mortem Findings.—Twenty-three hours later, the ileum and jejunum were found to be the seat of an extreme degree of ulcerative enteritis. In all there were forty ulcers, round or elliptical in shape, longitudinal to the axis of the bowel and occupying the position of Peyer's patches. The base of the ulcers in several instances was on the serosa. Almost all were in the stage of healing, and the shaven-beard appearance was frequently seen. There were no lesions in the duodenum, appendix or colon. On opening the skull cavity the dura was found adherent to the calvarium. On removing the dura a greenish-yellowish exudate was found filling the sulci and following the course of the vessels. At the base of the brain was found about two ounces of a cloudy flocculent exudate. The vessels of the brain were everywhere injected. Considerable bloody fluid was found in the lateral ventricles. The base and cortex of the brain seemed to be equally involved in the inflammatory process. On opening the dura of the cord a quantity of cloudy purulent fluid escaped. The vessels of the cord were prominent and injected. All levels of the cord were involved. The post-mortem diagnosis was: (1) acute purulent cerebrospinal leptomeningitis; (2) typhoid ulcerative enteritis; (3) acute splenitis; (4) mesenteric lymphadenitis; (5) right fibrous pleuritis; (6) passive hyperemia of the lungs and kidneys.

Microscopic Post-Mortem Findings.—Microscopically, different sections of the brain showed a thick cellular exudate over its surface, dipping down into the sulci. The blood-vessels on the surface of the brain were dilated and surrounded by thick masses of exudate, but in no place was the intima of the arteries lifted up by the cells of the exudate, as described by Ohlmacher in his case. In the walls of the vessels and in their proximity, especially, were seen large cells almost four times the size of a polynuclear cell, with vesicular, bladder-like nuclei. These cells were not observed to contain bacilli, which were numerous throughout the exudate. The cellular elements of the exudate varied in different places. In some areas the polynuclears numbered as high as 80 per cent., and in others the cells seemed to be mostly mononuclears. The large mononuclears were in preponderance. The brain membranes were almost exclusively involved in the inflammatory process as the brain substance itself seemed quite normal. The changes in the cord were similar to those described in the brain. The exudate seemed to be composed of polynuclear and mononuclear leukocytes and was especially marked about the anterior roots in the subdural space. There were also patches of extradural exudate and mononuclear cells were seen in the central canal of the cord.

Bacteriology.—Cultures made in bouillon from the cerebrospinal fluid during life showed a diffuse cloudy growth at the end of twenty-four hours. Hanging drop revealed motile bacilli with motion of the whirling, darting type. A smear from this culture showed many short thick-and-thin bacilli which were Gram-positive. Subcultures were made from the bouillon culture on the following media:

Agar Slant.	Litmus Milk.	Potato	Glucose-Agar.
	24 Hours		
Slight, whitish, pearly growth.	Faint pink....	Faint dry line.	Deep growth; no gas.
	48 Hours		
Only slightly increased growth.	Lilac pink....	Moderate	No gas.....
	6 Days		
Growth still localized.	Still lilac pink.	No odor; moderate.	No gas.....
No indol in sugar-free bouillon.			

With known typhoid blood this bacillus was agglutinated in a dilution of 1 to 40 inside of an hour.

At the autopsy cultures were made from the heart's blood, the pericardial fluid, bile, cerebrospinal canal, base of the

brain, lateral ventricles and dura. Smears of these fluids, except the heart's blood and pericardial fluid, showed a short thick-and-thin bacillus. The typhoid bacillus was isolated in pure culture from the base and cortex of the brain, lateral ventricles and from the spinal cord. The colon bacillus was isolated from the bile. The typhoid bacilli, thus obtained, were agglutinated by the serum of a known typhoid.

Extremely interesting and somewhat rare are the cases of typhoid without intestinal lesions. Flexner and Harris⁸ reported a case with an acute splenitis, with no intestinal lesions, in which typhoid bacilli were isolated from the spleen, lung and liver in pure culture. Opie and Bassett⁹ report a similar case, clinically typhoid, with no intestinal lesions, but in which typhoid bacilli were found in the liver, gall-bladder and kidney. Neumann and Schaffer¹⁰ report a case of suppurative meningitis, due to the typhoid bacillus, without intestinal lesions. Henry and Rosenberger¹¹ report a case of purulent typhoid meningitis with a bacteriemia, enlarged spleen and enteritis, but no ulceration of Peyer's patches. Southard and Richards¹² report a case of suppurative typhoid meningitis, in a tabo-paretic with bronchopneumonia, in whom there were no intestinal lesions, but typhoid bacilli were isolated from an enlarged mesenteric gland. R. S. Lavenson¹³ reports a localized collection of pus in the pia arachnoid on the left and right cerebral hemispheres in a case from which typhoid bacilli were cultivated from the cerebrospinal fluid *intra vitam*. Smears from the pus at autopsy showed Gram-negative bacilli. The spleen was not enlarged and the intestines were normal.

We wish to report a case of suppurative typhoid meningitis with a bacteriemia without intestinal lesions, in which the typhoid bacillus was isolated from the cerebrospinal fluid during life and at autopsy.

CASE 3.—History.—J. S., aged 48, entered the Cook County Hospital, Jan. 8, 1905, on the service of Drs. Preble and Reed. He was in a semiconscious condition.

Examination.—The temperature was 102 F. and pulse was 104. There was no enlargement of the spleen; reflexes were sluggish; leukocytes, 9,500 per cu. mm.

Course of Disease.—On the second day the patient had a convulsion which lasted ten minutes. Distinct nystagmus, vertical and horizontal, was present and the head and eyes were turned toward the right. On the third day he developed stiffness of the neck and legs and a lumbar puncture was made. A small amount of turbid fluid dropped out under no pressure. Smears of this showed an equal number of polynuclear and faintly staining mononuclear cells. A considerable number of organisms were present which were either diplococci or short bacilli in pairs. They were arranged in chains or pairs of four and were not intracellular, nor did they stain by Gram stain. Cultures were made from the spinal fluid as well as from the blood. In thirty-six hours these cultures showed a pure growth of a very short, thick bacillus, actively motile, Gram-negative, which grew culturally like *B. typhosus*. On the fifth day the eye-grounds were examined and found negative, but Kernig's sign was positive and the tongue protruded to the right. The nystagmus was less pronounced. Goose-flesh phenomenon was seen on the left side of the body, there being a sharp dividing line anteriorly and posteriorly. The patient was semicomatose; temperature 106.4 F. The patient died on the fifth day at 12:30 p. m.

Macroscopic Post-Mortem Findings.—The necropsy was held two days later by Dr. Reed. The anatomic diagnosis was purulent cerebrospinal leptomeningitis, chronic diffuse nephritis,

atrophic cirrhosis of the liver, old depressed fracture of the skull, epigastric hernia, pulmonary congestion and edema.

The intestines were entirely normal. Peyer's patches were neither swollen nor ulcerated. The spleen weighed 280 gm. and had five notches. Its pulp was soft but the markings were quite distinct. On opening the skull cavity the dura was found adherent to depressed bone at the site of an old fracture. The meninges were much injected over the vertex, and above the Sylvian fissure was a fibropurulent exudate in the pia following the lines of the vessels on both sides and along the longitudinal fissure and temporal lobes. The exudate was more marked along the perforated spaces at the base of the brain, covering the pons and the region between the medulla and cerebellum and the upper surface of the cerebellum. In the lateral ventricles was a turbid, bloody fluid. The meninges of the cord were hyperemic in their whole extent, and beneath the meninges was a fibrinous exudate.

Microscopic Post-Mortem Findings.—Sections of the cord, occipital lobe and cerebellum were examined microscopically. In all there was a large amount of exudate on the meninges, composed mostly of polynuclear and large mononuclear cells. This exudate was most intense around the veins and arteries and separated the meninges freely from the substance of the brain and cord. In no instance was the exudate present in the brain substance. In the sections studied there was not observed any lifting of the endothelium of the vessels by exudate. In the sections stained with methylene blue there were numerous bacilli seen, arranged in chains of three and four. No other organisms were seen.

Bacteriology.—Cultures were made at the autopsy by Dr. Stober. The *Staphylococcus albus* was grown from the pericardial fluid. The colon bacillus was isolated from the cord, cerebrospinal fluid, lateral ventricles and meninges of the brain. The typhoid bacillus was isolated from the cerebrospinal fluid and its identity made certain by subcultures, the description of which we omit. This organism was agglutinated by known typhoid serum in a dilution of 1 to 40 at the end of forty minutes.

SUMMARY

Typhoid bacilli are not found in the cerebrospinal fluid in uncomplicated cases of typhoid fever.

Typhoid patients suffering the ordinary nervous manifestations such as delirium, involuntary discharges, carphologia and severe headache are not benefited by withdrawal of cerebrospinal fluid, although the fluid may be under increased tension.

In typhoid patients showing classical symptoms of meningitis, the cerebrospinal fluid may be sterile, but lumbar puncture and withdrawal of fluid has improved the clinical condition in a striking way in some cases.

When typhoid fever patients show meningeal symptoms such as rigidity of the neck, Kernig's sign, convulsions, strabismus or irregularity of the pupils, lumbar puncture should always be done, and the fluid obtained examined bacteriologically and microscopically.

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Abdominal Pain and Loose Sacro-Iliac Joint.—There is one source of pain, and an important one which it behooves the surgeon always to be looking for, and that is the one due to loose sacro-iliac joint, first discovered, investigated and heralded by Joel E. Goldthwait of Boston (*Boston Med. and Surg. Jour.*, 1905, pp. 593, 643). This pain is apt to be associated with more or less severe backache, generally on one side over the sacro-iliac joint. It sometimes extends through to the front of the joint, where it is most apt to be mistaken for an affection of some pelvic organ. It can, as a rule, be demonstrated by a shortening of the affected leg and by rotating and forcing it strongly or by pulling it outward. In other instances the reasoning is more by exclusion. The therapeutic test is a valuable one, as most of these patients are relieved by a strong bandage made like a surcingle.—H. A. Kelly, in *Interstate Medical Journal*.

8. Bull. Johns Hopkins Hosp., 1897, viii, 259.

9. Bull. Johns Hopkins Hosp., 1901, xii, 198.

10. Virchows Arch. f. path. Anat., 1887, ix, 477.

11. Am. Jour. Med. Sc., 1908, i, 240.

12. Jour. Med. Research, 1908, p. 513.

13. Univ. Penn. Med. Bull., 1908, xxi, 55.

A CASE OF EPITHELIOMA OF THE VULVA AND A CASE OF RECURRENT GROWTH OF THE MEATUS URINARIUS TREATED BY IONIC SUR- GERY AND PLASTIC OPERATIONS*

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The case of epithelioma of the vulva is reported as presenting somewhat unusual features, and also as illustrating one type of malignant growth for which the ionic method of destructive sterilization is peculiarly adapted. The permanence of the result attained is fairly assured by the fact that nearly two and a half years have passed since the operation was performed. The salient points of this case were as follows:

Patient.—Miss E. Z., aged 49, was referred to me by Dr. Marie Formad, of Philadelphia, June 16, 1908.

History.—Four years ago a lump the size of a pea appeared on the right labium majus; it increased in area and ulcerated. Two years ago, Dr. Formad sent her to a hospital where a microscopic examination was made and the case pronounced inoperable. During the past two years the increase in the area of the growth has been rapid.

Examination.—The condition on admission to the Oncologic Hospital was as follows: An eroded and proliferated surface extended from the clitoris to a point below the anus, involving the whole vulvar area and extending some distance into the urethra, vagina and rectum. There was a characteristic discharge accompanied by a foul odor. No enlarged glands were discoverable. The blood-examination showed erythrocytes, 5,550,000; leukocytes, 5,800, and hemoglobin, 81 per cent.

Treatment.—On June 24, 1908, the patient was placed under ether and a major monopolar application of zinc-mercury ions was made with a current of from 1,000 to 1,200 milliamperes for one hour. This application was accomplished by the ionic dissolution of sixteen zinc needles, each heavily coated with quicksilver and inserted in the periphery of the growth. The needles were connected with the positive pole of the direct current, the negative being a large kaolin pad under the patient's back. On separation of the large mass of sterilized tissue two weeks later an immense cloaca-like opening was revealed, into which the three pelvic outlets coalesced, the cavity extending so far on the right as to expose the lower edge of the pubic ramus. The wound was painless, and filled in rapidly. By August 18 the patient had regained partial control of both rectum and bladder.

Subsequent History.—Four months after the operation the floor of the pelvis had become partially replaced by healthy scar tissue, though this tissue was insufficient to prevent a protrusion of the vaginal and rectal walls, the prolapsed anterior vaginal wall containing a cystocele and giving marked discomfort when the patient sneezed or laughed. Dr. Longenecker, of the hospital staff, kindly did a plastic operation at this time on the anterior vaginal wall, with excellent results.

Plastic Operation.—Ten months after the ionic operation the cicatrization was still incomplete at a central point around the urethral opening, this opening existing at about the middle point of the normal urethral length, the external portion having been involved in the disease and destroyed at the operation. It was decided that a plastic operation for covering the bare area would be tried, and this was done by Dr. Hewson, April 18, 1909, a square flap of skin and subdermic tissue being dissected from the left side of the scar and side of the thigh and transferred to the freshened surface, an opening having been made in the middle of the flap to correspond with the urethra. A soft catheter was placed securely

in the partly artificial urethra thus made and kept in position for six days, leaving some vesical irritation.

Result.—At the present time, two years and five months since the ionic operation, there is no evidence of recurrence of the malignant growth, and the patient's only discomfort is due to the practical absence of the lower rectal sphincter, making it difficult to retain flatus, and permitting soiling of the clothing when the feces are unformed. The bladder retains some of the sensitiveness acquired at the time of the last plastic operation, and micturition is somewhat precipitant.

Examination of Growth.—A specimen of the tissue was removed just prior to the ionic operation and was reported on as follows by Dr. John M. Swan, the pathologist of the hospital:

"A piece of tissue from the vulva, submitted for examination: The specimen is composed of skin and subcutaneous tissue. The epidermis has grown down into the underlying connective tissues, where it forms irregular islands of epithelial cells surrounded by young connective tissue. The cells in the epithelial islands are squamous in type. There are no pearly bodies. Diagnosis: squamous-celled epithelioma of vulva."

The other case to which I invite attention is an illustration of the difficulties that sometimes surround the diagnosis of growths of the urethral orifice in women. The appearance presented by this growth when first seen was that of a typical caruncle, the bright red color of the round protuberance showing within the urethral orifice, and its exquisite tenderness, both indicating a benign neoplasm. Yet a measure of destructive sterilization adapted to such a diagnosis was followed by the recurrence of a distinctly malignant growth in the same situation a few months later. The successful destruction of this second manifestation of the growth by an ionic application fully adapted to the malignant conditions will illustrate also, I think, the value of this form of surgery in this situation, and the opportunity that it presents for conserving the unaffected urethral tissues.

Patient.—Miss F., aged 33, was referred to me by Dr. J. B. Shaw, of Trenton, N. J., May 12, 1909. Her father died of cancer of the liver, otherwise the family history was negative. During the past five years the patient had lost 35 pounds in weight, and for two years she had suffered from a burning sensation at the urethral opening, greatly aggravated by the passage of urine, and from a more constant soreness referred to the bladder, with considerable mucopurulent leukorrhea.

Examination.—The patient was rather thin and somewhat bronzed in color. Inspection revealed a bright red caruncle-like body the size of a pea projecting slightly from the meatus urinarius. It was smooth and excessively tender to the touch. On urethroscopic examination the caruncle could be traced as an elongation up the urethra about one inch, it being attached as a sessile growth to the right side of the urethral mucous membrane.

Treatment.—The patient was admitted to the Oncologic Hospital and placed under ether for ionic destruction of the growth May 13, 1909. After etherization, a specimen was removed for microscopic examination; this caused free hemorrhage, which was quickly arrested by placing a zinc-mercury needle in the wound and turning on from 30 to 40 milliamperes of the direct current, positive. The hemorrhage being controlled, another positive zinc-mercury needle was thrust into the base of the growth, and, with both needles active, the current was raised to 80 milliamperes and maintained at this strength until the whole of the growth appeared to be devitalized and white, the total duration of the application being sixteen minutes.

Result.—The patient required catheterizing for twenty-four hours, after which time urine was voided. There was no rise of temperature. The small slough separated one week later, and the patient was discharged from the hospital at the end of two weeks.

* Read before the Obstetrical Society of Philadelphia, Dec. 1, 1910

Examination of Growth.—The specimens removed were submitted to Dr. Swan, who made the following uncertain report, the cause of the uncertainty possibly being the failure to secure a portion of the base of the growth.

Pathologic Report on First Specimen.—"A few fragments of tissue removed from the external urinary meatus. The tissue is composed of a surface epithelium of the stratified squamous type lying on a connective tissue groundwork. The majority of the sections are of such a nature that no opinion can be given as to their character, but in one slide the connective tissue portion of the specimen is composed of a loose reticulum of cells of varying type mixed with an extensive exudate of red blood-corpuscles. Many of the cells, I believe, are epithelial cells, and I think the tumor is malignant, but I am not prepared to give an opinion as to its proper classification. Diagnosis: questionable."

Subsequent History.—The patient was kept under close observation, and seven months later (Dec. 13, 1909), there was distinct evidence of a recurrence of the growth in the shape of an ulceration at its site with raised, hard edges that refused to heal. She was readmitted to the hospital under the belief that the growth was originally and still malignant, with a view to its thorough destruction. On this occasion a current of 200 to 300 milliamperes was employed for double the previous time, or thirty-four minutes, and with six larger needles completely circling the growth at its base. Both operations were monopolar, that is, the negative pole was a large kaolin pad beneath the patient's back. Special efforts were made at this second operation to reach the highest point of the growth in the urethra with as little loss of muscular tissue as possible.

Pathologic Report on Second Specimen.—The pathologic report on the specimen removed at this time is as follows: "Three fragments of tissue removed near the orifice of the urethra, submitted for examination. The largest of these fragments is composed of very much hypertrophied squamous epithelium, which is in one place thrown into numerous folds so that it resembles the duct of a gland. Many of the cells of this epithelium are hydropic. No place can be found in which this epithelium extends into the underlying connective tissue, but the connective tissue just beneath it is the seat of a very well-marked round-celled infiltration, and these cells are principally of the plasma-cell type. The tissue is markedly congested, and in some places there is free hemorrhage. The round-celled infiltration above referred to is seen in scattered areas throughout the connective tissue, here and there associated with polymorphonuclear cells. There are a great many new blood-vessels in the tissue. One of the smaller bits is elliptical in outline, surrounded throughout its entire extent with a stratified squamous epithelium which does not dip down into the underlying connective tissue. This connective tissue is rich in blood-vessels, which are filled with blood, and shows numerous fibroblasts, and areas of small round-celled infiltration of the plasma cell type, mixed with lymphocytes. The third piece is composed of masses of round cells of varying type; polymorphonuclears, lymphocytes, plasma cells and fragmented nuclei. The tissue contains numerous blood-vessels with fairly thick walls. In several places there is free hemorrhage. In one part of this piece the endothelial cells forming the walls of the blood-vessels appear to be proliferating. Diagnosis: infective granuloma (?)."

Third Operation.—On Feb. 24, 1910, the patient was admitted a third time for the destruction of three nodules of bright color at the meatus. A current of from 100 to 150 milliamperes was used for twelve minutes, with three needles.

Result.—Her progress thereafter was steady, the parts closing in with tissue of normal color, somewhat retracted, but with complete control of the bladder and absence of unpleasant sensations, except a hypogastric discomfort for a time, apparently referable to the bladder. At present, ten months after the last operation, there is smooth scar tissue occupying the whole site of the growth, the external layer being regenerated mucous membrane by peripheral budding. The urethra seems healthy and of normal caliber, with the meatus retracted about one inch. This retraction has tilted the anterior

wall of the vagina outward at the urethral orifice. The patient's unpleasant sensations on micturition have ceased and she has good control over the bladder. No evidence of a return of the disease can be found, and she has gained in weight and color.

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EARLY DIAGNOSIS OF GALL-STONE DISEASE

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The success of surgery of the bile-tract within the last ten years is due to more effective cooperation between the surgeon and the general practitioner, to closer observation of pathology, and to the contributions of experimental medicine. The opportunity of the surgeon to study pathology at the operating-table has brought about a clearer understanding of the significance of symptoms which heretofore have not been appreciated. The great work done by the Mayos and their associates, by Deaver, Moynihan and others, in calling attention to pathologic conditions found in the living has revolutionized our former conception of gall-stone disease. We now know that gall-stones, instead of being frequently present without symptoms, create a distinct type of clinical phenomena, which in the past we did not properly interpret. The picture of the terminal stage has been too frequently used for a general description of gall-stone disease.

The close association of the organs of the upper abdomen often causes diseases of any of these organs to find expression in the stomach. To assign these stomach symptoms to their real cause requires careful study. Except in ulcer or cancer, the stomach is seldom the seat of primary trouble, though it may be the agent through which distress in many abdominal organs may manifest itself.

The classical picture of gall-stone disease, accompanied by attacks of severe pain radiating to the right shoulder, nausea, vomiting and jaundice, is a late stage and results from complications that a calculous cholecystitis may cause. It is most unfortunate that these symptoms are still regarded by many as necessary to a diagnosis, thereby delaying proper treatment and prolonging disability. To prevent complications such as adhesions, perforation, obstruction of the common duct and chronic pancreatitis, it is necessary to recognize what Moynihan calls the "inaugural symptoms" of gall-stone disease, and to dismiss from our minds the typical text-book description of gall-stone colic.

Disease of the gall-bladder has its own type of digestive disturbance. According to Graham, we may distinguish four stages in its development and symptomatology.

In the first stage we see mild disturbance of the stomach, which occasions little distress to patients or anxiety to the physician. Irregular attacks of indigestion accompanied by gas formation and a feeling of epigastric constriction or tightness are observed. These discomforts are sudden in their onset and are frequently accompanied by chilliness, belching, regurgitation, or vomiting. Such dyspeptic attacks, sudden, irregular and mild, are as characteristic of early gall-bladder disease, as the typical attacks of gall-stone colic, which may ensue unless the trouble is recognized and proper treatment instituted.

In the second stage the disease occurs with pain, which may be dull or severe, and is located under the right costal arch. This pain may be aggravated by food, by sudden exertion or deep inspiration, and unless a careful physical examination of the chest is made, the physician may explain the symptoms by a diagnosis of pleurisy. These attacks of pain and dyspeptic disturbances are frequently evanescent in type, and with their going the patient enters on a period of good health.

In the third stage we have attacks of gall-stone colic, and here the diagnosis is easy. It is in this class of cases that the surgeon is most frequently called. These patients come with a well-defined history of sudden, excruciating pain located in the upper part of the abdomen, radiating to the right scapula and attended by nausea and vomiting. We have here, also, gas formation and spasm of the diaphragm; vomiting may give partial or complete relief, though morphin is most frequently required. A characteristic of these attacks is the suddenness of the onset and disappearance. The patient is unable to trace any connection between the beginning of the attack and the taking of food. Even in this advanced stage of the disease there may be a return of perfect health, which may continue for an indefinite period, to be suddenly interrupted in most cases by another severe attack.

The fourth stage represents chronic gall-bladder disease, with further complications of adhesions, obstruction of the common duct or pancreatitis. The diagnosis is not clear in this type unless the history of the case is carefully studied. Too frequently the significance of the symptoms or the urgency of the case is not appreciated until this stage is reached, and in view of former teaching, such a mistake is entirely reasonable.

Unless one has seen patients with gall-stone disease in the first or second stage operated on, it will be difficult for one to appreciate the constancy with which operation in these cases shows pathologic conditions of the gall-bladder. That operation relieves such patients and cures their "dyspepsia," is amply proved by the large number of patients operated on in most of the clinics in this country. These patients, who have definite symptoms of the first or the second stage, and are cured by operation, are the best proof of the association of gastric disturbances with the presence of gall-stones. Occasionally, we see cases in which the gall-bladder is packed with stones, thickened and adherent, and still there have been no symptoms other than the gastric disturbances already mentioned. The following case in the service of Dr. J. Shelton Horsley illustrates this point.

CASE 1.—History.—Mrs. P., aged 37, a thin, emaciated woman, had suffered with stomach trouble and indefinite dyspepsia for the past twenty years. She complained of a "dull, aching, swollen feeling" in the upper abdomen, which sometimes radiated to the right shoulder and was frequently made worse by eating. She had had considerable bloating and belching. There had been no colic, jaundice, or pain severe enough to require a physician. Vomiting, which occurred only a few times, brought relief, though she usually obtained relief by drinking hot water. She said, "I have taken a lot of medicine for indigestion, which would relieve me for a while."

Diagnosis and Treatment.—Cholecystitis, with probably enlarged gall-bladder. Operation showed that the gall-bladder was enlarged, adherent to the anterior abdominal wall and surrounding tissues, and its walls thickened from chronic inflammation. It contained a thick purulent fluid, twenty-two large stones, with one stone completely occluding the cystic duct. We have here an illustration of the fact that even advanced pathologic lesions of the gall-bladder may exist in

a patient who complains of nothing but stomach trouble and slight pain. A letter recently received from this patient states that she is feeling better and weighs more than she has for sixteen years.

In making a diagnosis of gall-stone disease the etiology possibilities should be gone into. It has long been noted that gall-stones often occur after typhoid fever, and are most frequent in women after pregnancy. It is probably also true that any systemic infection which produces toxins that irritate the mucosa of the gastrointestinal tract may be a cause of cholecystitis, which, as we know, in its mild form is a forerunner of gall-stones. In the following case the patient's symptoms dated quite definitely from an attack of influenza.

CASE 2.—History.—Mr. D., aged 45. The patient has had recurring pains in the epigastrium and lower abdomen for the past eighteen months; was well up until that time, when he contracted influenza. Since then he has had indigestion and pain in the stomach and lower abdomen. Pain and attacks of indigestion were irregular and alternated with periods of partial relief. There was no history of colic, cramps or jaundice, but his complexion he thought was slightly tinged at times.

Diagnosis and Treatment.—Operation showed cholecystitis and chronic appendicitis. The appendix was removed and the gall-bladder drained. This case gave a somewhat mixed type of stomach disturbance from both the appendix and the gall-bladder and may be an instance of cholecystitis from a general influenzal infection. The experiments of Else show that the gall-bladder is frequently infected through the general circulation and not through the portal system. If we accept his conclusion we can readily believe that a severe systemic infection without intestinal lesion could produce gall-bladder trouble. The operation revealed an appendix that was inflamed and moderately diseased and a gall-bladder somewhat thickened and congested and containing thick dark bile, but no stones. Removal of the appendix and drainage of the gall-bladder were followed by prompt recovery.

This patient was a farmer and had been in good health until the attack of influenza. So the relation of cause and effect between the influenza, the cholecystitis and the appendicitis may be assumed with apparent justification. It is probable that in such a case the gastric and intestinal mucosa are as much irritated as that of the gall-bladder and appendix, but the poor drainage of these two organs seems to render them unable to throw off the effect of the irritation as the stomach and intestines do.

Gall-bladder disease must be differentiated from ulcer, cancer, gastric neurosis, and reflex disturbance from chronic appendicitis. In ulcer of the stomach and duodenum there is a history of pain in the upper abdomen, coming on from one and one-half to four hours after meals, and relieved by food or by vomiting or by alkalies. The periodicity in ulcer is lacking in gall-stones. There is a definite relation between the taking of food and the relief of pain in ulcers, which contrasts with the sudden, irregular, and fleeting attacks of cholecystitis, which, in most cases, are not influenced in any way by eating. Formation of gas and the feeling of constriction, with belching, constitute a type of disturbance which accompanies gall-bladder trouble and which is not often found in ulcer.

Cancer of the stomach in about 70 per cent. of cases is said to result from ulcer, and its incipency is diagnosed with great difficulty. A history of previous ulcer of the stomach should warn us of the approach of malignancy, and suggest a careful study of the case and gastric analysis. In cancer, the appearance of the patient, the irregular vomiting and the disgust for food, contrasted with the symptoms and well-preserved appearance of the patient suffering with ulcer or gall-stones, should be of

some assistance in making a correct diagnosis. Blood is rarely found in gall-bladder cases. In ulcer it is present in one-fourth as against two-thirds of the cases of cancer of the stomach. Gastralgia is found in neurotic individuals, is relieved by pressure, and is not usually attended by nausea or vomiting. It is significant that a more thorough study of the pathology of lesions of the stomach and associated organs of digestion materially reduces the number of patients suffering with so-called gastralgia and other neuroses.

We might be called on to distinguish the girdle pain of locomotor ataxia from an attack of gall-stone colic. Here the Argyll-Robertson pupil, Romberg symptoms, loss of tendon reflex, and other signs of tabes would serve to differentiate.

Disturbance arising from the appendix, shown by gastric indigestion and pyloric spasm, are extremely difficult of diagnosis from primary gall-stone disease, and the two troubles frequently co-exist.

There may be no tenderness over McBurney's point or any other of the usual signs of appendicitis except a type of continuous stomach trouble. In these cases, however, the history may show an attack of appendicitis, which was not treated at the time of its occurrence, and the patient is able to date his indigestion from this attack. There is generally a loss of weight and considerable impairment of health. The effect of food on the pain is variable and the pain is usually in the neighborhood of the umbilicus. In appendical dyspepsia, its continuous type is in marked contrast to the fleeting, irregular and sudden attacks of gall-bladder trouble, and to gastric ulcer, in which there is generally a definite relation between pain and the taking of food. Cannon, of Boston, has succeeded in producing erosion and ulceration of the stomach by the injection or irritants in the cecum. These experiments would seem to indicate that even organic trouble of the stomach may be produced by disturbance in the region of the ileocecal valve.

The only satisfactory treatment of gall-stones is their surgical removal. Occasionally patients recover after passage of the stone by ulceration through into the bowel or into the stomach, or the patient may go through life a chronic dyspeptic and die of some other disease. It is as much the mission of physicians and surgeons to relieve morbidity as to lower mortality, and though the relation between these two things is not always directly apparent, it nevertheless exists in every case. A patient with indefinite stomach trouble, such as is found in the early stage of gall-stone disease, is more susceptible to other diseases, even if the gall-bladder trouble never assumes a threatening attitude in itself.

The medical profession is practically going through now, in regard to gall-bladder disease, what they have already learned in regard to appendicitis. The modern physician does not think of waiting in appendicitis until an abscess has formed, but recommends that the appendix be removed as soon as it is known to be diseased. So in the case of gall-stones, instead of waiting until the patient has had the early stages and has begun to suffer from colicky pains, vomiting and jaundice, the gall-stones should be diagnosticated in the first stage when the irregular attacks of gastric disturbance, with the feeling of constriction and the formation of gas in the stomach, show that as yet there has been practically no organic change in the liver, gall-tracts, or pancreas. Removal of the stones at such a stage will almost certainly insure a return of the patient to perfect health.

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VACCINATION AND SMALL-POX IN JAPAN

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Since Jenner introduced the practical use of vaccination over a century ago, mankind in general has been well protected from the cruel onslaught of small-pox wherever the process is carried out. We are greatly surprised every now and then to find antivaccinationists among people far advanced in civilization like those of the United States of America. I should, however, never have attempted to make any criticism on their presumption, had not one of them, namely, Dr. Hodge, of Niagara Falls, referred to the facts gathered from our Japanese statistics in his paper in the *Twentieth Century Magazine*. I may be permitted, therefore, to try to make clear how vaccination is serving to wipe out small-pox in Japan.

I. EPIDEMIOLOGIC OBSERVATIONS ON SMALL-POX AND ON PREVENTIVE MEASURES IN JAPAN

The free communication between Japan, China and Corea in earlier days was the source which gave rise to great epidemics of small-pox quite frequently, until at last vaccination was introduced. Japanese history tells us that small-pox was imported for the first time into Kyushyu in the month of February, 123 B. C., after which it gradually spread toward the east as far as Kyoto, causing a great epidemic all over the country, creating sad havoc, and strewing the high roads with the dead and dying. From this first great epidemic down to 1868, when the restoration of the present Meiji Era set in, about fifty epidemics broke out, each one of which extended over a number of years, sweeping all through the country, diminishing the population considerably and devastating the fertile country everywhere. Towards the end of the Tokugawa Shogunate the measure introduced by Jenner was adopted in Japan, with what favorable results we shall see below. During the ten years from the beginning of the Meiji Era—i. e., 1875-1884—the number of patients suffering from small-pox averaged 2,008.1 per hundred thousand population, while the deaths were only 494.6, which was deemed to be a remarkable improvement.

One of the greatest epidemics of small-pox during the past forty years broke out in 1885 and lasted three years, with 125,315 cases and 31,960 deaths. The epidemic began to decline in 1888. It reappeared in 1892 and again lasted three years. During this second outbreak 88,095 cases were recorded, of which 23,603 patients died. The third outbreak extended over two years, 1896-1897, with 52,650 cases and 15,664 deaths. During the next ten years, a few cases were imported from China every now and then, without any ensuing serious outbreak. Since 1900, the cases in the whole empire were remarkably few, until in 1907, when the disease reappeared at Kobe. This caused an uncommonly severe epidemic, which spread all through the empire. It began to die out in the spring of 1908. During this fourth epidemic 19,101 cases and 6,273 deaths were reported. This outbreak, however, completely subsided by July of the same year, without any trace left. The diagram inserted shows these epidemics most clearly.

Let us now turn our attention to what has been done to avoid the wretched results brought about by small-pox in Japan. In olden times when people were ignorant of what measures they should apply, they resorted to

superstitious means to attempt to subdue the natural processes. One of the scientific measures, i. e., variolation, was introduced by a Chinese merchant, Lee-Nin-Shan, in the year 1745. That often caused an outbreak of small-pox, and so many fell victims to it that people felt that they were doomed to suffer from small-pox once during their lifetime.

In 1849, i. e., fifty-three years after Jenner had introduced vaccination, the process was first demonstrated in Japan by a Dutch physician, Monieke. The Japanese people were soon convinced of the marvelous effects of vaccination. Vaccinating stations were established in various great cities, e. g., Yeddo (now Tokyo), Kyoto and Osaka, in order to give the public the benefits of vaccination on a broader scale.

Japan, at that time, underwent a political change, and even medical science, which had begun to follow the teachings of the European school, was forbidden to continue by the Shogunate government. Vaccination was the only survivor of the newly introduced methods of the European school. This fact alone explains how far even the obstinate Japanese authorities were convinced of the efficacy of vaccination. The radical change

lymph" was substituted. While humanized lymph was used, the original vaccine was supplied from the vaccinating stations. In 1874 the Japanese government established a calf-lymph farm, in order to meet the demands of the general public. In 1888 the preparation of calf-lymph was entrusted to the Japan Health Association, which continued to prepare the lymph for eight years. During these years, other private institutions made their appearance which prepared calf-lymph for pecuniary considerations. The products of these private enterprises were unsatisfactory, for the efficacy of such lymph eventually became questionable and at last public opinion was aroused to establish a national institution for the preparation of calf-lymph, and in 1896 such an institution was established. In this institution Dr. Umeno tried the experiment of preparing a "pure animal lymph" by passing the virus only through the calf, never using a human body as had been done previously. He succeeded in this experiment, and since 1900 this kind of calf-lymph has been supplied to the public. The original calf-lymph farm was closed in the year 1906, and the calf-lymph is now prepared in the Institute for Research on Infectious Diseases.

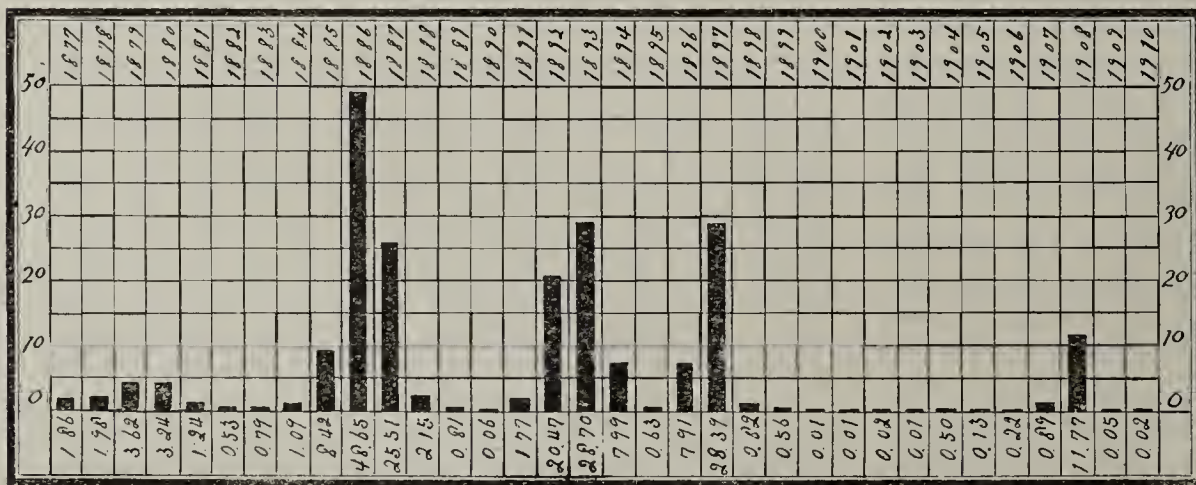


Diagram of small-pox mortality in Japan.

of government just forty-four years ago, which is known to history as the Restoration of the Meiji Era, brought about a completely new mode of politics, everything Occidental being introduced. In 1874 the first vaccination law was enacted, and in 1876 the regulations for the prevention of small-pox were promulgated, which provided for compulsory vaccination. In 1885 a revised law concerning vaccination was enacted. It comprised all the data included in the former two regulations. It provided that every baby should be vaccinated within the first year of its age, and revaccinated every five or seven years. The violation of this regulation was punished with a fine not less than 5 and not exceeding 50 sen (or approximately, from 2½ to 25 cents in U. S. currency). It was in the same year, just after the enactment of these regulations, that the great epidemic broke out which is mentioned above. This regulation remained unchanged during twenty-four years; a new revision took effect in the year 1909. This new law provides that each new-born baby shall be vaccinated within ninety days after birth and before June of the next year. Revaccination shall be made at the tenth year from birth (including the year in which the child was born). If either the primary or the secondary vaccination is unsuccessful, the child shall be revaccinated before December of the next year.

Formerly Japan, as well as every other country, used humanized lymph only. The retrovaccine was then used from 1892 till 1900. In 1900 the present "pure animal

II. THE CAUSES OF THE EPIDEMICS OF SMALL-POX IN JAPAN

Ever since the promulgation of the first vaccination law in 1874, and that of the second one in 1876, when compulsory measures were first adopted, Japan has suffered from epidemics from time to time. The inefficacy of vaccination might therefore seem to be proved to shallow-minded observers, who do not fully realize the complicated nature of the origin of small-pox as well as of other infectious diseases. These

various causes should be thoroughly examined before the reliability of vaccination is questioned. Let us now, therefore, review the epidemiology of small-pox in Japan.

There seem to be at least five principal causes to account for the presence and continuance of small-pox:

1. *The Importation of the Virus.*—Japan is surrounded by seas, beyond which lie several countries where preventive measures have never been taken. In these countries, small-pox exists continuously and at every possible opportunity invades Japan. When we had only a limited means of communication some centuries ago, each epidemic could be traced back to importation of the virus from China through Corea, and in course of time the more the facilities of communication were augmented the more the country was found to be liable to infection. This compelled us to establish quarantine stations, which were opened in 1899. Since that date, and until the end of 1909, the number of detected cases of small-pox at these stations amounted to seventy-one, as is shown in Table 1:

TABLE 1.—NUMBER OF CASES OF SMALL-POX DETECTED AT QUARANTINE STATIONS DURING THE YEARS FROM 1899 TO 1909

Quarantine Station	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Yokohama	1	3	1	1	1	3	1	2	3	5	16
Kobe	1	1	1	1	1	3	7	2	1	7	26
Moji	1	1	1	1	1	5	4	1	1	6	19
Nagasaki	1	1	2	1	1	1	1	1	3	1	10
Total	3	5	3	1	2	9	12	5	8	19	71

These figures, of course, exclude by necessity those who passed the stations in the stage of incubation, which obviously made the prevention of the disease most difficult. The same difficulty is encountered in the most completely vaccinated country—Germany—which is bounded on one side by Russia, a non-vaccinated country. This is why there exist a few unavoidable cases of small-pox annually in that country. Imagine, then, how great is the chance of infection in Japan, which is in close proximity to China and Corea, whose condition of national health hardly admits even any comparison with that of Russia. This is one of the most conspicuous causative factors in the reappearance of small-pox in Japan. Japan is therefore never tired of preaching the gospel of vaccination, not only within her own dominions, but also as far as her sphere of influence permits.

2. *Non-Vaccinated People.*—Laws cannot be expected to be all-powerful. Wherever there is a law, there are also to be met not a few law-breakers, even when the breach is met with severe penalties. It admits of no doubt that such laws as regulate matters of public health provide but slight penalties, and consequently there are not a few law-breakers among the ignorant mass of people. This fact will appear when we come to examine the figures given in our statistics, which equal nearly the whole population of the country. But the more minute particulars, which are not shown in the statistics, will clearly show the vague notion we have of the number of non-vaccinated individuals there are scattered throughout the country. Among the 10,600 persons with small-pox reported during the five years including 1878-1882, non-vaccinated individuals were found to amount to 63 per cent., or 6,690. Then again, during the latest epidemic, in the years 1907-1908, 1,527 non-vaccinated persons among 5,215 small-pox patients were found in one prefecture, i. e., in Hiogo.

Such law-breakers probably will be found in any nation where a vaccination law is enacted. The middle and higher classes of Japanese people never allow their children to go unvaccinated, but the lower classes, who constitute the majority of the nation, often neglect their duty. They are, like kerosene oil in a house where a fire breaks out, fuel for the flames, furnishing every possible chance for the spread of the disease. Under the revised vaccination law taking effect in the year 1909, the hitherto irresponsible protectors of children were subjected to penalties for failure to have them vaccinated.

3. *Unsuccessful Vaccination.*—The protection of the individual against small-pox is never complete unless the points of inoculation develop the typical pustules, and the patient undergoes a regular symptomatic change. In order to bring about complete immunization in a human body, the quality of the vaccine lymph and the technic of vaccination must be considered.

In Japan, from the first year of the enactment of the vaccination law in 1887 up to 1907, covering twenty-two years, the reported number of vaccinations was 97,355,246, of which 73,259,278 were compulsory and the remaining 24,355,968 voluntary. The average number of vaccinations per year was more than 4,420,000. Comparing this number with the whole Japanese population, there seems to be no one who has not been vaccinated: but a close examination of the real state of affairs will make clear the fact that in the above-mentioned large number of vaccinations are a certain number of unsuccessful vaccinations. Of course this large number of unsuccessfully vaccinated persons may also comprise some who have already acquired immunity by pre-

vious vaccination. At the same time we must not overlook those who have been unsuccessfully vaccinated because of unskilful manipulation on the part of the physicians, who had practiced the puncturing system instead of the cutting method, even when the lymph had been changed for the retrovaccine and this again for the "pure animal lymph." The effect of this may be seen from the statistics, which show a great difference between the percentage of the primary vaccinations gathered from the eight years before 1891 and after 1892. In the first eight years when the humanized lymph had been used the percentage of successful vaccinations was high, ranging from 85 to 90 per cent., but in the later eight years when the retrovaccine was introduced the percentage fell suddenly to 75 or 80. The figure, however, has been greatly increasing since 1900, when it reached as high as 88 per cent.

In short, it must be acknowledged that vaccination in Japan is so irregular that while there are some who receive no vaccination until five or six years of age, others have been vaccinated three or more times during the same period of time, and the consequence is the comparatively less number of genuine vaccinations. This evil will be overcome by the adoption of the latest radical policy.

4. *The Immunity Acquired Through Vaccination.*—Immunity through vaccination is not complete before three weeks after successful vaccination. This is why there are some cases of small-pox immediately following vaccination. Then again, the immunity is gradually weakened by the course of years. This fact may be seen from the following statistics:

Successful revaccination after—

1 year.....	13.6 per cent.	4 years.....	57.3 per cent.
2 years.....	32.9 per cent.	5 years.....	51.1 per cent.
3 years.....	46.6 per cent.	6 years.....	63.8 per cent.

This shows the percentage among the 951 cases observed in Japan.

7 years.....	72.5 per cent.	9 years.....	85.0 per cent.
8 years.....	80.0 per cent.	10 years.....	88.6 per cent.

These results were obtained by Weil in the year 1899.

The government report of the German Confederacy shows 91 to 93 per cent. of successful revaccinations after ten years from the primary. In other words, the immunity acquired through vaccination begins to disappear from the second year and by the tenth year it disappears almost completely. And therefore in Germany, and in some other countries, a law has been enacted to have the people revaccinated at the eleventh year from the primary vaccination.

The general statistics do not give these minute facts in detail, and therefore the deduction is imperfect. Had not the critics excluded these cases from the total revaccinated ones, they could not come to the conclusion which Dr. Hodge reached. For instance, during the latest epidemic in Japan, which broke out in 1907-1908, 608 patients were admitted into the Higashiyama Hospital in Kobe; 267 of the number were non-vaccinated, the past history of thirty-eight was uncertain as to the vaccination, twenty-five had contracted the disease within three weeks after vaccination, four had had small-pox previously, nineteen contracted the disease within five years and 225 over five years from the last vaccination. This shows also how far the immunity is impaired by the lapse of time.

5. *Virulency of Small-Pox.*—The virulency of small-pox is not constant in each epidemic. The higher the virulency of small-pox rises, the larger the number of cases among those who have passed several years from the last vaccination. Then, it may be asked, how can the virulency of small-pox be estimated? The simplest

way, it seems to me, is to estimate the death-rate among the non-vaccinated patients. The average death-rate of small-pox is estimated at from 20 to 40 per cent. in the European literature. In Japan, it shows a higher standard, ranging from 25 to 30 per cent. even during the small epidemics. During the epidemic of 1896-1897 it averaged 55.08 per cent., and that of the years 1907-1908 reached the high standard of 69.4 per cent. When the virulency reaches this high point, higher than has been encountered in European or American epidemics, even individuals previously attacked, as well as those vaccinated, contract the disease. During the latest epidemic, such cases were numbered at 242 in seven prefectures, viz., Hiogo, Osaka, Tokyo, Kanagawa, Hiroshima, Aichi and Wakayama, and fifty-seven died. The death-rate, therefore, was 23.5 per cent. This is unmistakable evidence of the strong virulency of the small-pox which prevailed at that time. It is like a devastating fire which consumes everything in its path and to which nothing is fire-proof. Japan dreads this kind of small-pox, which is also abetted by the other circumstances, but its direct results are by no means due to the inefficacy of vaccination.

III. THE EFFICACY OF VACCINATION

The efficacy of vaccination can be demonstrated by experiment, experience and statistics.

1. The fact that vaccinated individuals do not contract small-pox was made clear by Woodylle, William and others immediately after Jenner's experiment, by inoculating the virus of small-pox into the vaccinated individual. In modern times the same experiment has been made, of course for different purposes, with monkeys. Brinkerhoff and Magrath before the year 1904, and Dr. Miyajima, one of my assistants, in 1908 vaccinated a large number of monkeys with calf-lymph. and then inoculated them with the virus of small-pox, but none of the experimental animals contracted the disease. This is an established fact in science, and there is none who can deny it.

2. Empirical testimony can be best drawn from the great epidemics, in which a great many persons engage in transporting, nursing, inspecting and disposing of both the sick and the dead without the least apprehension, because every one of them has received a thorough vaccination. In Japan, those who engage in this kind of work are vaccinated regularly within a certain period of time, and the consequence has been that none of them fell a victim to the pestilence. If, on the contrary, they had never been vaccinated, the result would be nothing but disastrous. If vaccination had no preventive effect on small-pox, they would have fallen victims before anybody else. If, then, the results had occurred just the reverse to the real state of things as claimed by the Jennerists, they should have abandoned their claims a long time ago. But the general public outside the profession is well convinced of the efficacy of vaccination simply because of this empirical testimony, which constitutes an indisputable fact.

3. Statistical facts also bear witness to the efficacy of vaccination. But tables and diagrams shown in statistics do not explain themselves. The most minute and scrupulous examination as to the hidden meaning of them, which only can breathe into the dry framework of figures the spirit of truth, is necessary, so that fallacy may be avoided. In almost every civilized country where there is a perfect system of vaccination in vogue, there occur no great epidemics of small-pox, and

consequently the death-rate among them is very low. If an epidemic should occur, it would soon yield to vaccination.

Unfortunately, in Japan we are still having occasional epidemics of small-pox, which constitute for certain fanatic superficial observers a sad example of the inefficacy of vaccination. We have ample reason to believe, however, that the very things which Dr. Hodge and other antivaccinationists hold as evidence against Jennerism are the solid rocks on which the statistical proof of the efficacy of vaccination rests.

In the first place, in proportion as the system of vaccination had been perfected, the period of each epidemic and the number of deaths are diminished. This fact may be seen from Table 2:

TABLE 2.—NUMBER OF CASES, DEATHS AND DEATH-RATE PER HUNDRED IN VARIOUS EPIDEMICS

FIRST EPIDEMIC			
	Cases	Deaths	per 100 Death-Rate
1885.....	12,759	3,329	26.09
1886.....	73,337	18,676	25.47
1887.....	39,779	9,967	25.06
Total.....	125,315	31,962	
SECOND EPIDEMIC			
	Cases	Deaths	Death-Rate per 100
1892.....	33,779	8,409	24.89
1893.....	41,898	11,852	28.29
1894.....	12,418	3,342	26.91
Total.....	88,095	23,603	
THIRD EPIDEMIC			
	Cases	Deaths	Death-Rate per 100
1896.....	10,704	3,388	31.65
1897.....	41,946	12,276	29.27
Total.....	52,650	15,664	
FOURTH EPIDEMIC			
	Cases	Deaths	Death-Rate per 100
1907.....	1,034	437	42.25
1908.....	18,067	5,836	32.32
Total.....	19,101	6,273	

The first and the second epidemics each lasted fully three years, and the third two years, while the fourth broke out in December, 1907, and ceased completely in August of the following year, covering a period of less than a year. The number of cases again shows a gradual decrease. While the first epidemic had over 100,000 cases, the second had 80,000 and the third 50,000, the fourth had less than 20,000.

The marvelous effect of vaccination on the epidemics of small-pox is manifested in Table 3, which shows the sudden fall in new cases during the epidemic, which otherwise would have increased. The table does not show the long list of the vaccinated persons, but from the beginning of the epidemic down to the close a special vaccination was enforced on all persons who were brought under the control of the hygienic police power.

TABLE 3.—MONTHLY REPORT OF SMALLPOX DURING THE YEARS 1907 AND 1908

	Cases	Deaths
August, 1907.....	4	2
September, 1907.....	1	0
October, 1907.....	25	6
November, 1907.....	90	31
December, 1907.....	770	383
January, 1908.....	4,481	1,394
February, 1908.....	5,424	1,498
March, 1908.....	4,685	1,461
April, 1908.....	1,815	895
May, 1908.....	926	314
June, 1908.....	526	185
July, 1908.....	121	73
August, 1908.....	36	28

During this epidemic a striking effect of vaccination in mitigating the virulency of small-pox was experienced.

While it prevailed in Hiogo and Osaka, special compulsory vaccination was enforced, and consequently in Kanagawa, Tokyo, Aichi and Kyoto it prevailed less furiously, as is shown in Table 4:

TABLE 4.—RESULTS OF COMPULSORY VACCINATION

Place and Date First Case Appeared	Cases	Deaths	Death-Rate, Per Cent.
Hiogo, August, 1907.....	5,215	2,315	44.4
Osaka, November, 1907.....	3,431	1,641	47.9
Kanagawa, December, 1907.....	684	209	30.5
Tokyo, January, 1908.....	1,479	379	26.8
Aichi, January, 1908.....	800	169	21.1
Kyoto, December, 1907.....	263	38	14.4

The drop in the figures in cases and deaths could never have been so great had it not been for the effect of vaccination.

6. The death-rate in small-pox is given as about 30 per cent. by authorities, but it shows a wide range of figures in various epidemics, just as we see in any other infectious disease. Again, the comparison between the death-rate of small-pox among vaccinated persons and non-vaccinated ones cannot be established unless the data be collected from only one locality in the course of one epidemic. In Japan we have rare statistics which show such comparison. They cover five years from 1878 to 1882. The total number of cases during that time amounted to 10,600, of which number the following figures are given:

	Cases	Deaths	Death-Rate per 100
Non-vaccinated	6,690	2,190	32.73
Vaccinated	3,910	455	11.63

From the above figures it will be seen that the mortality among the vaccinated persons was not more than one-third of that among the non-vaccinated.

The following figures show the same conditions, where clear distinction could be made between the vaccinated and non-vaccinated, in Tokyo, Kyoto, Osaka, Hiogo, Kanagawa and Aichi, where during the latest epidemic the cases numbered 10,286:

	Cases	Deaths	Death-Rate per 100
Non-vaccinated	2,932	2,031	69.3
Vaccinated	7,254	1,926	26.6

The above figures show the decrease in the death-rate among the vaccinated persons to one-half that of the non-vaccinated ones.

The vaccinated persons in the above table include those who were vaccinated within three weeks from the time of exposure and those who had passed the time assigned as the infective period. If these cases be deducted from the number the result would be more accurate.

During the epidemic of 1907-1908, the first case appeared in Kobe City and the disease prevailed most severely there. The Higashiyama Hospital at Kobe admitted 608 patients in all, who may be classified as in Table 5:

TABLE 5.—CASES IN HIGASHIYAMA HOSPITAL

Class	Cases	Deaths	Death-Rate per 100
Non-vaccinated persons	267	134	50.19
Uncertain	38	6	15.79
Vaccinated	274	19	6.90
Within five years.....	19	0	0
Over five years.....	255	19	7.84
Vaccinated during incubation period..	25	3	12.00
Having previous attack.....	4	0	0
Total.....	608	159	26.15

From this table it will be clear that the death-rate among the non-vaccinated persons was 50 per cent., while that of the vaccinated was 6.44 per cent., i. e., one-seventh that among the non-vaccinated. Again, all the deaths among the vaccinated persons occurred

exclusively among those who had passed over five years from the last vaccination and among those who had been vaccinated during the incubation period. No one will doubt the efficacy of our Japanese vaccination, now that such a clear table of statistics is produced. Besides, the table shows that even among those who were vaccinated during the incubation period, the death-rate was four times smaller than that of the non-vaccinated ones.

7. There is, besides the above statistics, the following circumstance which constitutes still another strong piece of evidence. I refer to the statistics of our army during the two great wars, the Chino-Japanese and the Russo-Japanese. Our army engaged in both wars in Corea and Manchuria, where small-pox is endemic, and therefore the soldiers were constantly exposed to the danger of contamination; the more so when the unhealthy way of living which is a necessary concomitant of war is taken into account. However, the Japanese authorities took care to have every soldier who went to the seat of war vaccinated, and the happy result was that in an army consisting of not less than a million of men, the following small number of cases of small-pox appeared:

Chino-Jap. war: 155 cases; 34 deaths; death-rate, 21.93 per cent.
Russo-Jap. war: 362 cases; 35 deaths; death-rate, 9.66 per cent.

As the total number of men engaged in both wars is not yet made known, the rate of contamination and the death-rate cannot be accurately stated; however, we get from these approximate figures some notion as to the paucity of cases. The results are equal to, if not better than, those of the Prussian army during the war of 1870.

CONCLUSION

Japan is surrounded by non-vaccinated countries, whence contagion may flow in at any time, while the ignorant people do not care to receive vaccination; those who neglect it are therefore predisposed to be infected at the slightest chance. The enormous number of vaccinated individuals which appears in our statistics does not include all the people who should be vaccinated, but it does include a large number of persons revaccinated at an earlier time than the law of immunity requires, because they are well aware of the efficacy of vaccination as well as very anxious to protect themselves from the dangerous contagion.

From these various causes, there still prevail epidemics of small-pox in Japan. I regret that these statistics presented by our Japanese government have seemed to afford data for upholding the theory of the antivaccinationists in America. Every civilized individual of Japan knows the benefit of the marvelous discovery of Jenner, because he sees from time to time how he himself and his neighbors are protected from horrible epidemics. It seems to me that the presence of such an antivaccinationist as Dr. Hodge, who denies the efficacy of vaccination so frankly in the United States of America, is a striking witness to the fact that the people of America are already well protected by not having had the sad experience of an attack of small-pox for a long time, and by the fact that their neighbors are being thoroughly vaccinated. The antivaccinationists are like those who would deny the benefit of sunshine. It gives them every kind of joy and happiness, and yet they are so familiar with it that they are not aware of its good. They would come to know the vast protective power of vaccination, had they once experienced the terrible outbreaks of small-pox in their communities, in which thousands on thousands fall victims while the vaccinated ones go freely through the epidemic without the least danger of contagion.

STANDARDS AND AUTHORITY *

GEORGE EDGAR VINCENT

Dean of the Faculties of Arts, Literature and Science, University of
Chicago; President-Elect, University of Minnesota

CHICAGO

"Monarchy," said Fisher Ames, "is like a merchantman; it sails well, but sometimes strikes a rock and goes to the bottom; democracy is like a raft; it never sinks, but your feet are always in the water." Thus with homely piquancy the Revolutionary sage set forth the conflict between the efficient élite and the unspecialized many. These contrasted views persist. In every institution, community, nation, these problems will not down: How shall the knowledge, experience, skill of the few be put at the service of all? If need be, how shall this wisdom be made coercive? How shall richer resources of science and technic be discovered and applied? With the change from country-side to city, from household to factory industry, from infrequent journeys to shuttle-like travel, from local to world markets, the problems of industry, commerce, health and politics become complicated and insistent. The horse-sense of a few decades ago will no longer serve an age of motor cars. The expert few are coming into their own. They assert superior knowledge and skill; they ask that these be recognized; they demand protection against sciolist, incompetent and quack. They seek to establish tests of individual training and efficiency for the few and to prescribe forms of conduct for the many. Thus fundamental questions are raised—questions of standards and of authority.

Plato in the "Republic" recognized these problems and provided for their solution. His "Republic" was an aristocracy of experts, an oligarchy of scientists. These guardians were highly trained, devoted to the common welfare. They could not transmit authority or privilege; they recruited their ranks from every social stratum in which they found ability. They were clothed with unquestioned power. They redistributed wealth, transferred children to the classes to which their aptitudes assigned them, censored literature and the drama—in short they made all decisions and imposed these on the mass of citizens. Plato assumed that truth could be discovered, that men could be trained to apply it and enforce it for the common good. Accurate science, a competent élite, and coercive power are to-day, as in Plato's time, conditions of adjustment to the life conditions of any social group, be it corporation, institution, community, state or nation.

Auguste Comte believed that authority ought to come from agreement; not agreement from authority. He had faith that with popular scientific education, "intellectual anarchy" would gradually disappear. Men would cease to explain phenomena by theological notions and metaphysical superstitions. They would, by the very constitution of their minds, be forced to agree, first, about mathematical relationships, then about celestial mechanics, next about physics and chemistry, finally about biology and social science. With the few something like this has come to pass. About most questions of the exact sciences educated men cannot differ. Discussion tends to take refuge in the fields of biology, psychology, philosophy and the social sciences. Even here science is steadily making conquests and robbing the intelligent of subjects for debate. But in another

sense Comte's dream seems almost pathetic in its futility. The idea of the many accepting scientific knowledge from an appreciation of its validity and conforming their conduct to its demands, is still rather utopian. There are many who take a cynical view of popular education. They see medieval ignorance invading the twentieth century. Charlatanism, quackery and superstition run riot. Vagaries and absurdities sweep through a credulous public. Even they who have hope of making headway with scientific truth are not overconfident. "Against such education" writes one of these, "are naturally trained all the resources of quackery whose trade would be gone. And when free expression is accorded all alike, progress must be made in the teeth of ignorance too dense to have any conception of its own depth, and in the face of brawling charlatanry and screaming fanaticism."¹ In a sense, scientific knowledge and technic must always be a monopoly of the trained, efficient few. At any rate the participation of the many in this knowledge must be of a very different kind. To speak of modern science as a common possession of a whole population is misleading. The growth of science means specialization, and that means an élite. The degree to which the many appreciate the methods and spirit of science and recognize expert authority is a measure of popular intelligence.

There are professions and occupations that must be thought of as forms of social service rather than as personal careers. Thus doctors are rightly regarded as social servants. Their skill and fidelity are obviously vital to the community. Yet this view is far from universal. Individuals by tens of thousands see in a medical career chiefly a means of livelihood. They resent the rising standards of medical education as obstacles to the early enjoyment of an income. Many of these individualists resort to short-cut schools and to least resistance states. But these outcasts are embittered by exclusion from prestige and practice; they swell the ranks of the quacks and unfurl the black flag of the medical privateer. The discredited schools and "diplomamills" also insist on the old dogmas of liberty and *laissez faire*, and make appeals to the traditions of the fathers, the spirit of '76 and other quaintly irrelevant ideas and shibboleths. Then, too, curious cults, recrudescent superstitions, attractive half-truths, esoteric mysteries are constantly arising to demand in the name of religion, free thought, or psychology, recognition as therapeutic agencies. To the influences which resist the standardizing of medical education may be added makers of proprietary remedies whose success varies directly with the credulity of the public. But in spite of impatient selfishness, mental inertia, sincere fanaticism, unscrupulous greed, the standardizing of medical education goes steadily, if too slowly, on. The Association under whose auspices we meet affords an example of that extra-legal centralized organization which creates national institutions amid what often seems a chaos of state particularism. Slowly but inevitably we are selecting a medical élite, experts to whom we entrust a constantly growing body of scientific knowledge and an elaborated technic.

It is essential that such an élite should be recruited from the widest area of possible ability. Society must provide a "drag-net" for special capacity. There is danger that the raising of standards may limit the field of choice to those groups which can afford the cost of long and expensive preparation. Socially and profes-

* Read before the Conference of the American Medical Association on Medical Education and Medical Legislation, Chicago, March 1-3, 1911.

1. Hodges: Pop. Sc. Monthly, xlix, 6167.

sionally such a result would be deplorable. If the community for its own protection insists on testing and training its social functionaries, it must provide a way of finding and encouraging unusual ability however this may be circumstanced. A system of scholarships, awarded by competent authority, after adequate tests, and continued only so long as the scholars' work justifies the support, would seem to be a socially necessary consequence of the increased demands of medical education. Medical associations, individuals, institutions and the states should all have a share in creating such a system.

So far medical men have been spoken of as one body. It is worth while to mention here the subdivision of the group into the teachers of medicine, practitioners and sanitarians. These sub-groups overlap somewhat, but on the whole they differentiate themselves rather clearly. Medical teachers may be further divided into those who investigate and those who give instruction. It is of prime importance that all these groups should work in closest harmony and loyalty. Their task is in a large sense common to all. Each group for its own highest efficiency must keep itself informed of the work the others are doing.

Granted that a body of medical experts is in existence, that the recruiting of this body is being more carefully supervised, that it is being gradually protected against the worst forms of competition, and granted, further, that this élite is able to formulate policies to protect individual and public health, how bring about the acceptance of these policies by the community? An enlightened despotism could impose such regulations on humble and submissive subjects. Model industrial villages have at times afforded modern instances of sanitation by ukase. One can imagine Peter the Great bringing things to pass quickly in Petersburg when once he had been convinced of the germ theory of disease. Experts have a kindly feeling for despotism. They know what ought to be done and they are impatient of delay. They often display a trace of autocracy when they have a situation in hand. A bureaucratic system under which the masses transfer to a body of government officials much of the deference once shown to the nobility, may display, as in Germany, or even in Switzerland, a high degree of efficiency. Under a régime which places the center of the franchise high up in the social scale, gives a thorough system of elementary and technical education, passes its male population through a rigorous military machine, exalts technical skill and scientific knowledge, there is a remarkable yielding to expert guidance. No wonder that the medical élite turn their eyes enviously toward Berlin where the details of conduct are rigorously enforced. But there is a vast difference between the down-trodden victims of a scientific paternalism and the untrammelled citizens of triumphant democracy. A German must keep the soles of both feet on the floor of a tram car, but the free-born American may extend his boot to be polished by every passing skirt, and in the State of Alabama is protected by at least one court in asserting his inalienable right to copious and casual expectoration.² Obviously the central problem in democracy is to give prestige and authority to the élite and to their prescriptions.

While rising democracies like those of France and England preserve traces of traditional deference to the upper classes, the American people show no such attitude. On the contrary, they usually display hostility,

or at least derisive disrespect, for the specialized and their opinions. To the unspecialized average man the expert is in a way a personal affront. He suggests the idea of a superior class, and seems to reflect on the competence of the ordinary citizen. This feeling is a natural survival from the early days, especially on the frontier. The problems of that simple life demanded not highly trained specialists, but men who could turn their hands to many different kinds of work, none of which was searchingly tested by competition or other spur to efficiency. Slowly, grudgingly the technical expert, the railway and mining engineer, the architect, of late the agricultural specialist, have been given recognition by the many. But against doctors, especially experts in insanity, sanitarians, university professors, and others who arrogate to themselves special knowledge that is not easily tested in tangible, material ways, the American democracy still directs a large measure of incredulity and derision. And this, too, in spite of constant resort to physicians and personal confidence in them in individual cases. It is the difference between "my doctor" and "the doctors." Then, too, for obvious reasons the antagonism is much more marked toward bacteriologists and sanitarians than toward physicians in private practice.

There are other causes of popular distrust of the specialized few. The public attributes to them motives of cupidity and of class interest. Such a phrase as the "Doctors' Trust" by its sinister suggestions is a clever device for appealing to this latent suspicion. Again, the traditional idea that it is derogatory to personal dignity to defer to superiors, the hypnotizing influence of cherished "inalienable rights," the tendency to identify opinionated obstinacy with personal liberty—all these curious confusions of ideas play some part in making the many hostile to the few. Universal schooling and access to newspapers, periodicals and books of popular science create in tens of thousands a sense of familiarity with the latest thought. They pick up phrases, they are the victims of verbal suggestion, they have the pride of opinion. They set their neighbors right about current questions and warn them against the selfish recommendations of the experts. One of these local oracles in stopping his subscription recently wrote the following lines to the *Outlook*:³

I have carefully studied the vaccination question for several years, and am thoroughly conversant with the expressed views of many of the most prominent advocates and opponents of the practice in the world, and I assert, knowing absolutely that I cannot be intelligently and successfully contradicted, that there is now nowhere to be found a man of proven competency and well-established reputation for truth and probity, either in or out of the medical profession, who advocates vaccination.

The doctors are not blameless for a good deal of the popular prejudice. By a sometimes tactless assertion of superior knowledge they commit the unforgivable American sin of "setting themselves up to know more than other people." When a prominent medical man in testifying before a senatorial committee says: "My position is that of an expert whose testimony cannot be impeached," he is doubtless stating a fact, but to the average man the cool assertion is irritating. It arouses antagonism. Another cause of popular distrust of expert opinion and professional probity is the widespread belief that physicians and professors of medicine can be induced to give testimony on either side of a legal case. The public cannot enter into all the intricacies which

2. THE JOURNAL A. M. A., 1900, xxx v, 433.

3. Outlook, Feb. 11, 1911.

make possible honest disagreement between well-trained men. The easy inferences are that medicine is mere guess-work, or that doctors are hypocritical and venial. If the proposal to make medical experts an impartial special jury, summoned and paid by the court itself, can be carried out, there will be a gain for the prestige of the profession. It is to be hoped, too, that the conviction of the poor that they are regarded as mere clinical material for human vivisection may be gradually removed. This persistent misconception plays some part in the prejudice against medical men. Obviously the profession suffers seriously, not only from the quacks and charlatans without the pale, but from the self-seeking and disloyal who violate the spirit while they cleverly keep within the technical rules of the medical fraternity. By playing on the ignorance of patients, by prolonging the period of treatment, by prescribing futile remedies and advising unnecessary operations, by extortionate charges, these men do untold damage to the profession and furnish just grounds for popular distrust and resentment. The medical élite must have the vigilance and courage to protect itself, not only against enemies without, but against traitors within. Again, it is possible, with some show of truth, to charge the doctors with being slow to recognize new knowledge and better methods. There are extremists who insist that the profession has always opposed progress. The injustice of so sweeping an assertion does not prevent its having a certain effect on public opinion. The industrious incompetence of large numbers of practitioners who, graduated from preposterous schools and admitted to practice by ridiculous boards of examiners, run their devastating careers in some of our states, does not deceive all who know them. Even if the public is indiscriminating enough to put all doctors into one class, it is not wholly to be blamed for regarding the entire group with a good deal of suspicion and derision.

Thus the more or less expert few face the many who trust individuals, but are slow to recognize the authority of the profession. What are the possibilities of reaching a better understanding? The answers are obvious: The few must deserve and win popular confidence; the many must learn to appreciate the competence and devotion of the few. And the state must formulate and enforce the terms of this better understanding. If the cure for democracy is more democracy, the corrective of a little education is more education. The only alternative is a return to autocracy. To the millenium-chaser, the short-cut reformer and the efficient administrator, the slow process of education is an irritating suggestion. They object to having their "feet always in the water."

But scientific men should face facts as they are. The public mind is like a force of nature. It is childish to rail at it, to denounce it, to expect it to be docile about technical matters. Doctors should diagnose the public calmly and in the scientific spirit. They should try to trace the play of cause and effect, and then take measures to bring desired results to pass. In this they have the right to ask the cooperation of all thinking men and women. The public is controlled by leaders. These leaders must be informed and intelligent. Colleges and universities have a responsibility to train these leaders. Every institution of higher education should be a model of public sanitation and hygiene. Every graduate should be well grounded in the principles of personal and community health. The public schools could do much more than they are doing at present to train children in hygienic habits and in intelligent deference to sanitary regulations. Popular literature, lectures, parents' meet-

ings, visiting nurses' associations, organizations like the antituberculosis societies, city and state health departments and boards—agencies of many kinds are all engaged in the work of popular health education. Would that Mr. Carnegie's next ten million dollar gift might be devoted to publishing in newspapers authoritative advertising bulletins on hygiene and sanitation! Many an editor would be glad to be freed from irksome slavery to the patent medicine men.

A large responsibility for the education of the public must fall on members of the medical profession. Doctors and professors of medicine must devote some time to public addresses, to cooperation with public school authorities, to participation in local movements for improved sanitation, to hearty support of local health authorities when these are reasonably competent, and to civic movements designed to improve a defective public health service.

There is much platitudinous talk about legislation and public opinion. On the one hand are the doctrinaires whose one idea of social progress is to get some law passed. At the other extreme are to be found those who are so convinced that law unsupported by public opinion is futile, that they are in danger of neglecting legislative aid. As a matter of fact, oftentimes agitation for legislation is in itself a valuable means of public enlightenment. In any event the gains in public opinion should always be fixed as soon as possible in well-drawn laws. Movements, therefore, for legislation affecting medical education, admission to the practice of the profession, the organization of health boards, the enactment of sanitary regulations, etc., should all be regarded as a part of the process by which the expert few and the many are to be brought into relations of mutual respect and good will.

But it remains true that in a democracy, back of the coercive power of the law there lies the social authority which in the long run is vested in the few who by their approved competence and by their spirit of social service command the confidence and respect of the public. With increasing intelligence the many learn to protect themselves against quackery and to place confidence in tested leadership. If the raft of democracy cannot be transformed into a swiftly sailing ship, there is hope, at least, that it may be built up far enough above the waves to carry its passengers dry-shod.

PELLAGRA TREATED WITH SALVARSAN (606)

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In the light of early and material improvement of symptoms in three typical cases of pellagra following the administration of salvarsan, it has appeared wise to make this preliminary report. The final results, deductions, photographs and later cases will be embodied in a future report.

CASE 1.—*History*.—W. H. R., aged 43, white, is an electrical engineer. The patient's family history is negative, except that one sister died some years ago of tuberculosis. The patient had malaria and rheumatic arthritis in youth. Since, he has enjoyed good health until the present condition began. About the middle of January, 1911, the patient was suddenly seized with cramping pains in his abdomen, followed by a profuse and weakening diarrhea. This persisted and did not yield to treatment. Some days later he noticed that his hands were burned to the elbows, which he attributed to hot

oil. No similar burn ever occurred, though his work had remained the same. There was also a burn on his thigh, due "to a rent in his trousers." The patient was nervous and cried over small matters. His mouth became sore and he lost weight rapidly. He was confined to bed six weeks.

Examination.—March 4, 1911. The patient was about 5 feet, 7 inches tall, was greatly emaciated and weighed 100 pounds. His expression was dull and he answered questions sluggishly. Pupillary reflexes were normal; tongue red, moist and patchy; lungs were negative; liver two inches below costal margin; abdomen tender; patellar reflex exaggerated. There was a brownish indurated lesion of the skin over the hands and thick crusting over the points of the elbows. The intermediate forearms were pigmented, with paler areas of desquamation. There was also a large encrusted area on the inside of the thigh and the feet were somewhat involved. The urine contained albumin and a few granular casts. The blood showed 6,000 whites, 325,000 reds, 70 per cent. hemoglobin. The stools were six to eight a day, foul, containing macroscopic blood. There were no amebas, hook-worms or other important findings. Von Pirquet and Wassermann tests were negative. The pulse was 108 to 116; temperature slightly subnormal.

Treatment and Course.—After observing the patient two days, and the case being a frank one, it was decided to administer salvarsan (606), which was done by the intravenous method in a 0.05 gm. dose on March 6. There was a rise of temperature to 99.2 F. that evening. Aside from being restless, there was no inconvenience. The following day, the patient said he was better; the bowels had moved only once in twenty-four hours.

March 8, the patient was sitting up in bed and said he was hungry; did not cry when spoken to and looked brighter.

March 9, pulse lowered to 96. The patient knew he felt better. The skin condition had materially faded. The legs showed only a brownish discoloration; exfoliation from the hands marked.

March 12, improvement continued; practically all local signs of the disease had disappeared.

March 15, patient was walking around the ward; had gained weight; said he felt fine and was very hungry. He went home and will return for observation.

CASES 2 and 3.—March 7 and 8, two female negroes, with well-marked pellagra and giving negative Wassermann reactions, were given, intravenously, 0.05 gm. and 0.06 gm. of salvarsan, respectively. An improvement was noted in forty-eight hours.

After a week had elapsed the skin lesions had changed materially as had the pyalism, vaginitis, weight and mental symptoms. Both were eating heartily, the diarrhea had abated and constant improvement was recorded. There appears to be an early and real improvement with no untoward effects from the administration.

SODIUM CACODYLATE IN TERTIARY SYPHILIS

REPORT OF A CASE *

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NEW YORK

As comparatively few cases of tertiary syphilis treated with sodium cacodylate have been reported, and as widespread interest has been awakened in the treatment of syphilis with arsenical compounds by Ehrlich's new discovery, I wish to report the following case:

History.—J. L., aged 27, presented himself for examination and treatment at the Manhattan Eye and Ear Hospital Sept. 28, 1910, complaining of faucial irritation, for which he sought relief. He was referred to the throat department, where he was examined, and the following history obtained: About

June 15 an indurated sore developed on the glans penis just back of the corona, followed in a few days by other sores on the body of the penis. Four weeks later there developed the eruption, followed by the faucial irritation from which he sought relief.

Examination.—The posterior pharyngeal wall was found ulcerated with two or three deep-seated ulcers on the buccal mucous membrane. The skin over the body showed numerous large and small rupial ulcers in various stages of development and necrosis. The patient stated positively that he had never had any other lesion previous to the one reported as occurring ten weeks previously.

Treatment.—A diagnosis of rupial syphilis was made with tertiary manifestations in the throat, and the patient put on bi-weekly injections of salicylate of mercury, together with suitable means for the relief of the local irritation.

Transfer to Eye Department.—After about four weeks' treatment the man was no better, and owing to the fact that a large rupia had developed on the right upper eyelid, with the possibility of its destruction, the patient was transferred to the eye department, where I first saw him on October 19. The diagnosis of rupial syphilis was confirmed by several of my colleagues, and in spite of the fact that the patient had had repeated injections of mercury, the Wassermann reaction was taken and found to be positive. The gumma in the lid was progressive.

Sodium Cacodylate Treatment.—The patient was put on daily injections of sodium cacodylate, $\frac{3}{4}$ grain to a dose. Within forty-eight hours the surface of the ulcer was smooth and healthy in appearance, the slough having been dissected away. At the end of one week the lid had entirely healed with very little deformity, considering the size of the slough. With the exception of two or three of the larger foci situated on subcutaneous bone surfaces near the skin and elbow, there was rapid cicatrization and healing of the ulcers. At the end of one week the injections were discontinued for a week, at the end of which time a second Wassermann test was negative. The treatment was then resumed in $1\frac{1}{2}$ gr. doses daily for one week longer, after which the man received three injections weekly till November 21,

No internal medication was given until the reaction became negative, when strychnin and iron were given in tonic doses, three times a day. The patient has in no way suffered from the administration of arsenic. The case was apparently a very malignant one. It is possible that some lasting effect of the disease will continue to manifest itself owing to the destructive action of some hidden lesion, and since there are already numerous reports of recurrences after the use of salvarsan, it is not likely that the treatment in this case will completely eradicate the disease. In view of the fact, however, of the non-toxicity of sodium cacodylate, the simplicity of administration, and the rapidity with which it seems to arrest progressive lesions, it should be given whenever the proper administration of salvarsan cannot be carried out.

I hope to be able to report the future progress of this patient at a later date.

57 West Fifty-Eighth Street.

The Anesthetist.—An expert anesthetist is quick to note every change, and can so "nurse" his patient that it is seldom he has any anxiety from the appearance of untoward symptoms. These difficulties may turn up in the hands of the less experienced, who must at times give an anesthetic, and who must, therefore, get the most thorough training possible. No man can have confidence in his power to administer an anesthetic safely who has not a very clear idea as to what constitutes a danger signal and a definite knowledge of how to proceed instantly and without hesitation to get his patient into a safer condition.—W. Rankin, in the *Practitioner*.

* Read before the Ophthalmological Section of the New York Academy of Medicine, Nov. 21, 1910.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address "Medic, Chicago"

Subscription price Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, MARCH 25, 1911

MUSCULAR EFFICIENCY AND PAIN

One of the most interesting subjects of discussion in industry and manufactures which has arisen in recent years is the question of human efficiency. In the effort to increase the output in the various trades and crafts a special study of the movements required for various accomplishments has been made. It was shown, for instance, that a bricklayer at work stooped many times a day in order to pick up the bricks. In doing so, each time he stooped he had to support, under varying conditions, the weight of his body and to lift at least one-half of it to the erect posture. On the other hand, it was shown that a good deal of this crude labor with the consequent exhaustion of muscular energy, might be saved by having the bricks so placed that he could reach them without stooping, and that this might be accomplished by means of machinery or scaffoldings, and the employment of cheaper labor than that of the skilled workman. It was found that a man might lay in this way one and a half times as many bricks as he was able to lay by the old method with the expenditure of actually less energy than before. It would seem that this improvement in method, which saved useless movement and expenditure of muscular energy, would surely have been developed by the workman himself; but it was not, and only when a skilled engineer deliberately set himself to study the workman's movements in order to eliminate all those that were unnecessary, was it found how much time and muscle-energy could be saved.

The lesson is rather pertinent for the physician who has to deal with the working classes. It is often found that the source of pains and aches, which are worse on rainy days, and in damp weather generally, and which are therefore usually referred to as "rheumatism," are often the consequence of efforts to use muscles under bad mechanical conditions or in unfavorable circumstances, and then to use them much more than the result aimed at demands. As a consequence of this, in practically all occupations there are painful conditions. In the old days when dentists used foot-power engines, most of them acquired a distinct halt in their gait known to the profession, at least, as the "dentist's halt" or "gimp";

this halt occurred in the leg on which the dentist stood, while the other was used in developing the power. Workmen who are employed on foot-power lathes suffer in the same way, and the only relief for them is to change the foot applying the power, or to occupy a sitting position, from which they can use both feet.

Workmen who are employed at benches in various trades are likely to suffer from corresponding painful conditions of the arms as a consequence of faulty use of the arm muscles. Filers, for instance, who work long hours at filing, are almost sure to have severe aches and pains in their forearms, unless their benches are so low that they can apply from the shoulders whatever pressure is necessary. Men who use a hammer often suffer in the same way, unless care is taken that there is no lost movement or waste of energy in their work. Women who sweep often suffer much more on the right side from painful fatigue (worse on rainy days, and therefore regarded as "rheumatism") than would be the case if they alternated hands in the use of the broom, and changed from a broom to a brush occasionally in order to vary the muscular movements. There is scarcely a trade or occupation in which some of the supposedly inevitable occupation-aches and pains could not be greatly modified for the better by proper direction in the use of the muscles, and by variation in the methods of work. This would save much pain and discomfort and avoid the objectionable use of anodyne drugs. This is the physician's department in the improvement of human efficiency that is occupying so much attention at the present time.

THE FUNCTION OF THE THYMUS

Not least among the problems confronting the physiologic investigator is that presented by the thymus, that mysterious organ which, culminating in its development early in life, normally undergoes early involution and by its persistence not infrequently produces the sudden, so-called thymic death. Friedleben,¹ who attacked this problem as far back as 1858, by attempting to remove the organ from various animals, failed to demonstrate any appreciable physiologic alterations in the animals so treated. Unfortunately, his work was done before the development of aseptic methods and was complicated by infection; nor is it very probable that he succeeded in complete extirpation of the organ. Of the great amount of more recent work, that of Basch² stands out prominently, because of the positive results which he reported. Following removal of the thymus in puppies from three to four weeks old, he observed marked, though transient, osseous changes, setting in as early as from two to three weeks after the operation. These changes took the form of deficient ossification

1. Die Physiologie der Thymusdrüse in Gesundheit und Krankheit, Frankfurt, 1858.

2. Wien. klin. Wchnschr., 1903, xvi, 893; Ztschr. f. exper. Path. u. Therap., 1905-06, ii, 195; Jahrb. f. Kinderh., 1906, lxiiv, 285, 1908, lxxviii, 649.

with abnormal flexibility of the long bones, and with diminished resistance to fracture, the epiphyseal cartilage being thicker than normal, and at points of fracture there was transitorily deficient calcification of the callus. He obtained also marked nervous changes, the animals showing hyperirritability of the peripheral nerves, and less intelligence than the control animals from the same litter. Occasionally, also, they suffered from convulsive attacks which usually were fatal.

Recently Klose³ has reported the results of a repetition of Basch's work, selecting, however, animals in the height of thymus activity, and not, like Basch's animals, in the period of involution of the organ. By working with puppies from ten to twenty days old, and by observing them over longer periods, he was able to obtain results even more striking than those of his predecessor. The alterations after removal of the organ could be divided with some readiness into several distinct phases. Following an initial latent phase of about two weeks, there came a period of from two to three months characterized by marked increase in adiposity, excessive eagerness for food, and diminished activity and muscular strength. Next came a period of rapid loss of weight, and of muscular and bony strength, although the animals still ate eagerly. Psychically they degenerated until they became practically idiotic. This stage lasted, in different animals, from three to fourteen months, and ended in death preceded by coma. A study of the bones made during the later stages showed marked osteoporosis, with multiple cysts in the spongy parts, and irregular and indefinite limitation of the compact portions. Also there was irregular thickening of the epiphyseal cartilages, and deficient linear growth. Along with these changes, there was a pronounced tendency to spontaneous fracture, followed as a rule by fibrous callus formation only. With the anatomic alterations in the bones there was a corresponding chemical change. While the bones of the control animals showed 65 per cent. of calcium salts, the animals operated on had only from 32 to 34 per cent. This diminution was at the expense of all the calcium salts alike, as the relations between the mineral constituents of normal bone were not altered. The brain also showed definite changes; it was relatively large, and markedly edematous. Klose believes that the changes can all be explained on the basis of an acidosis, acting on the bones by draining them of their lime salts, and acting on the nervous tissues by increasing their affinity for water. In view of the great content of nucleins in the thymus, he believes that nucleic acid may be specified as the offending agent, and regards the thymus as furnishing a site for the synthesis of the nucleins, with accompanying neutralization of the nucleic acid. That there would be an excessive nucleic acid metabolism at the time of greatest growth, corresponding with the period of thymus activity, is self-evident. From the fact that his experimental animals showed at

first splenic hypertrophy with later degeneration, Klose concludes that it is the spleen which in later life, after the period of greatest stress, assumes the function of the thymus. Additional support for this view is afforded by the association of hypertrophy of the spleen and lymphoid tissues with that of the thymus in the "status lymphaticus," and by the fact, to which Rachford⁴ calls attention, that on exposure of the thymus alone in this condition to the *x*-ray, the decrease in size of the thymus is accompanied by that of the other organs as well. Klose calls attention* to the similarity between the osseous findings in his thymectomized animals and those in cases of human rickets and osteomalacia. While at this time no definite rôle can be assigned to the thymus in the production of these diseases, the analogy is too striking not to deserve attention, particularly with diseases of such obscure etiology.

As regards the "thymic death," the conditions shown by surgery seem to justify the conclusion that this is mainly mechanical in character, by pressure on the trachea or large vessels by the enlarged organ. Nevertheless, in view of the pronounced physiologic processes which his work appears to assign to the thymus, Klose believes it probable that altered functional activity plays at least some part in the causation of death. As accessory thymus tissue occurs in the human being in and around the thyroid, and as this is capable of rapid hypertrophy, the surgical extirpation of the organ in the human being in all probability seldom can evoke such results as occur in the dog.

INDUSTRIAL DISEASES

The State of Illinois has recently made an important contribution to the literature of industrial hygiene. About a year ago, the Illinois Commission on Occupational Diseases¹ began its work of investigation and the results of this investigation together with recommendations for the legal regulation of certain dangerous trades have been sent to the governor of the state.

We understand that though other states have made formal inquiry into industrial accidents, Illinois is the first to attempt a study of industrial diseases.

The commission had only about ten months in which to work and wisely decided to make an intensive study of one or two restricted fields, such as that of industrial

4. *Tr. Assn. Am. Phys.*, 1910, xxv, 570.

1. Report of Commission on Occupational Diseases, C. R. Henderson, secretary, University of Chicago. The commission consisted of the following persons: George Webster, M.D., president of the State Board of Health, chairman; Charles R. Henderson, University of Chicago, secretary; Ludvig Heektoen, M.D., Memorial Institute for Infectious Diseases; Walter S. Haines, M.D., Rush Medical College; W. H. Allport, M.D.; James Simpson, Marshall Field & Co.; and the following state officials: Chief Factory Inspector Edgar T. Davies, Secretary State Board of Health J. A. Egan, M.D.; Secretary Bureau of Labor Statistics David Ross.

The appropriation granted to the commission was expended almost entirely on the field work of investigation, office room being donated by the university and laboratory facilities by members of the commission. Twenty-one investigators were employed, including eleven physicians and ten laymen, the former taking up the hygiene of the different trades and the physical condition of the work-people, the latter investigating factories and examining records of hospitals, dispensaries and sick-benefit societies.

3. *Arch. f. Kinderh.*, 1910, lv, 1.

poisons and of caisson disease, rather than to make a general survey of the whole subject. By choosing the poisonous trades rather than the dusty trades they were able to show clearly the causal connection between occupation and disease. The dusty trades are really the most important numerically considered, but the question of morbidity in these trades is always closely bound up with housing conditions, standard of living, etc., and the influence of the trade itself is less clearly demonstrable. In caisson disease we have a clearly marked trade disease.

The poisonous industries to which most study was devoted are the lead trades (Alice Hamilton), the brass and zinc trades (Emory R. Hayhurst) and the trades involving exposure to carbon monoxid (M. Karasek and G. Apfelbach), these being important industries in Illinois employing large numbers of workmen. In addition, there are short papers on arsenic, turpentine, the cyanids, hydrofluoric acid, nitrate of silver, metol, platinum, the chromates and chromic acid.

The report on the lead trades shows that this metal is used to an enormous extent in modern industry and that lead poisoning is probably in Illinois, as it has long been known to be in Europe, the most important industrial disease. The list of trades in which lead poisoning was found to have occurred numbers twenty-eight, but the classification of these trades is not very carefully made, and if industrial processes were counted instead, it is probable that the number would come not far from 120, which was Thomas Oliver's estimate of the number of processes in which lead is handled in Great Britain. Several trades are included in this list which the ordinary man does not think of as lead trades. For instance, the making of storage batteries is described as one of the most dangerous; in Europe, this trade is strictly regulated by law. The work of commercial artists is said to involve a fairly large amount of lead poisoning owing to careless methods of using the white paint which the artists suppose to be a harmless zinc white. Apparently physicians are sometimes led astray in their diagnosis of these cases, for their patients assure them that they have never been exposed to lead poisoning, although the investigators found that all but four of the seventy-four engraving establishments visited used white lead paint.

Other unfamiliar lead trades are the making of litho-transfers for pottery, the polishing of cut glass, making and hanging lead-colored wall-papers, enameling bath tubs, and laying electric cables. Five hundred and seventy-eight individual cases with six suspected cases are reported as having occurred in Illinois during the last three years in these twenty-eight trades, but it is stated that this figure represents only a fraction of the real number, for it was impossible to obtain even approximately accurate information as to any trade except the well-organized plumbers, and the partially organized printers and painters. The remaining lead workers are said to be composed largely of newly-arrived foreigners "who enter on the work utterly ignorant of its dangers,

or with only a vague, unintelligent dread." They are "a notoriously unsteady, shifting class," and "as it is only with a steady force of workmen that the oversusceptible can be weeded out and the others trained to protect themselves, it follows that this shifting of men from place to place is productive of far more poisoning than would occur among a permanent force of men." The investigators find that for the most part very little care is taken of the men employed in the dangerous lead-trades and statistics are given to demonstrate the contrast between European conditions and those in Illinois.

"In one English white lead factory employing 182 men, careful medical inspection failed to discover one case of lead poisoning in the year 1909-10. In an Illinois factory employing 142 men partial inspection revealed twenty-five men suffering from lead poisoning last year. In another English factory employing ninety men no case was discovered for five successive years. In an Illinois factory employing ninety-four men 28 per cent. of all employees have had lead poisoning and 40 per cent. of all employed in the dustier work."

Dr. Hayhurst's report on the brass industry includes a study of "brass-founders' ague," an industrial disease which has been the subject of much controversy in Europe, some authorities even denying that there is an affection peculiar to this trade. The description of symptoms given by Dr. Hayhurst is detailed and clear, but it would be more convincing had he given his personal observation of some one case. Probably the fact that the paper was written for a lay audience made him confine himself to more general statements. He agrees with the generally held opinion that the "ague" is caused by the sublimation products of zinc.

The brass industry in Illinois is apparently in as much need of hygienic regulation as the lead industries, for the prevention of brass-founders' ague seems to be simply a question of the proper removal of fumes. "In large foundries with good ventilation, either natural or artificial, brass chills practically never occur." But the investigators found that only four of the eighty-nine foundries visited could be classed as well-regulated and free from trade sickness, sixty-three were acknowledged to be centers of trade sickness and seven were suspected to be equally bad. Of 189 men from seventy-eight foundries who were examined by Dr. Hayhurst, 146 complained of some sickness traceable to their employment, forty-five had had "brass chills." As brass founders are also exposed to the action of arsenic, antimony, phosphorus, lead and the cyanids, brass ague is not the only industrial disease to which they are subject.

The newly employed men are said to be more susceptible to ague; the older men acquire a certain tolerance, but there is apparently a chronic form of poisoning which shows its effects on the lungs, digestive tract, kidneys and nervous system. Dr. Hayhurst's statistics as to longevity are almost startling. Of 1,761 foundry men, only seventeen were over 50 years of age.

The study of carbon monoxid poisoning is of great interest. Ample material was found in the great steel works of western Illinois where this gas is produced during the smelting of the iron ore with coke and lime. The symptoms of acute poisoning are much like those of ether narcosis, and if the sufferer is rescued in time an apparently complete recovery occurs. Drs. Karasek and Apfelbach undertook to determine the effect of frequent or constant exposure to smaller amounts of gas, chronic carbon monoxid poisoning. For this purpose they examined 240 steel workmen, and found them for the most part in poor physical health and with deficient muscular power, as indicated by the hand dynamometer. A careful control examination made of men of the same nationalities engaged in similar work, but not exposed to gas, showed that the gas workers had actually less muscular strength, a fact which "means a large economic loss in the numerous industries where workers are exposed to carbon monoxid."

Blood examinations of sixty-eight steel workers showed that "in practically all those exposed to blast gas there was a polycythemia numbering between 5,500,000 and 9,600,000. No embryonal or other unusual forms of red cells were present. Seemingly this is a conservative action on the part of the system whereby the harmful effects of the gas are mitigated and great toleration established."

The industrial hygienists of Europe are always reproaching us with our failure to collect data on industrial diseases in the United States. Let us hope that the report of the Illinois Commission will prove to be the first fruits of a widespread effort to make up for our former shortcomings in this respect.

THE NAME "EPINEPHRIN" VERSUS THE NAME "ADRENALIN"

There are thirty or more different brands of the blood-pressure-raising principle of the suprarenal gland on the market, five being in this country alone. These products are identical so far as their chief constituent is concerned; they differ, however as to the solvent and the preservative used. The processes of manufacture of some of them are patented; all of them are sold under trade names.

Until two years ago there was no common name applicable to this active principle; whenever reference was made to it a trade name had to be used. At that time the Council on Pharmacy and Chemistry, realizing the need of a generic term, adopted "epinephrin" as such a term. This name was selected in part because Abel had adopted it in 1899; in part because, so far as could be discovered, it was the name under which, through Abel's publications, the substance first appeared in medical literature; and in part because it seemed to be the only suitable one not already appropriated by some commercial firm.

After the publication of the Council's report, *THE JOURNAL* began gradually to use the term in those cases in which it seemed clear that the proprietary term was used in a generic sense. The substitution of the name "epinephrin" for "adrenalin" in the abstracts of certain foreign articles caused Parke, Davis & Co. to write a letter of protest which called forth the discussion appearing in the Propaganda Department of this issue.

The amount of space devoted to this matter may be criticized and considered unwarranted by those who do not realize the importance of the subject. The criticism is, to a certain degree, just. The somewhat inordinate length of the article is due in part to the unfortunate fact that, in availing themselves of the courtesy extended by *THE JOURNAL*, Parke, Davis & Co., in their reply, have injected into the discussion side-issues, such as the priority of discovery, the superiority of their product, etc., whereas, the question under discussion is simply that which relates to the name. It is, however, not altogether a matter for regret that the discussion has been thus broadened, for it brings before our readers many facts regarding the discovery of an important medicinal agent that are not generally known, at least by physicians.

Whether or not "adrenalin" is superior to "adrin," "suprarenalin," "suprarenin," "adnephtrin," or to any other of the preparations is entirely immaterial in this connection. The point is that the active principle of the suprarenal gland is on the market under various trade names, and that a name common to all has been selected to be used when no particular brand is referred to. The fact that "adrenalin" is regarded by many, both here and abroad, as a common, generic name does not alter the fact that it is claimed as a trade name by a commercial house and, therefore, presumably at least, cannot be used except as such.

Among the facts brought out in this discussion, one stands out clearly: that Abel deserves as much credit for the discovery as any other man, if not more. Credit belongs to Takamine for making use of reactions which were already well known. His work was a step in the progress of knowledge of the substance, but it was a step which he could not have taken but for what others. Abel especially, had accomplished and published. Abel's magnificent work, covering several years, deserves as much credit, to say the least, as that of Takamine. And it should be kept in mind that the former worked in the interest of science, and published his results for the benefit of all. He had no hope of pecuniary reward, asked for none, and received none.

Let us repeat, however, that these are side issues; the question is simply that of name. It cannot be too strongly emphasized that "epinephrin" is a true scientific name for the active principle of the suprarenal gland, and that it should be used on all occasions when the active principle and not some particular firm's make is referred to.

Current Comment

A FIFTH YEAR AS A HOSPITAL INTERN

Probably the next important advance in medical education will be the requirement of a fifth year to be spent by the student as an intern in some good hospital. In the majority of our better colleges even now most of the graduates are obtaining internships and it is claimed that there are more opportunities for such positions than the colleges are able to fill. It is also stated that the students who do not accept such internships, as a rule, are the very ones who should be required to take that work. Therefore, the requirement of the fifth year as a part of the course for the medical degree, in such institutions at least, could easily be brought about. In some states, however, where colleges have desired to make this additional requirement, they cannot do so because of the wording of the medical practice acts. In these states the law provides that only graduates of medical colleges may obtain licenses and that only licensed physicians can serve as interns in hospitals. Thus the colleges are unable to withhold the degree until after the fifth year is completed. A way out of this difficulty would be to secure an amendment to the medical practice act such as is being sought in Illinois. This amendment provides that the board in its discretion can admit to its examination a student who presents a certificate from a reputable medical college, showing that he has completed four years in medicine and has passed the examinations of that college. If it should be considered necessary or advisable, the state board could issue a limited license authorizing him to practice medicine and surgery in a hospital, this limited license to remain in effect for a period not exceeding eighteen months and to be exchanged for the permanent license as soon as the student has completed his internship and obtained his M.D. degree. Surely, an arrangement of this sort would in no way lower the standards of medical licensure in any state; on the contrary, it would strengthen the practice act and aid in securing better qualified physicians. The time is rapidly approaching when no one should enter on the practice of medicine without first having completed a year of clinical training under the direction of the attending staff of some good hospital.

POSITIVE RESULTS OF SANE FOURTH AGITATION

Over eight years ago, THE JOURNAL published its first report, showing that as a result of the use of fireworks in the celebration of the Fourth of July in that one year, 466 persons were killed and nearly 4,000 injured. Of those killed, over 400 died from tetanus, probably the most awful death known in modern times, while of those injured, many of them were blinded, or had their arms, legs, hands or fingers torn off, or were otherwise mutilated for life. For a few years previously a prominent newspaper, the *Chicago Tribune*, had been publishing, as a news feature, the immediate results of the celebration, but the complete figures, including the deaths from lockjaw, were not presented until in 1903 THE JOURNAL published its first report. This report, awful as it was, scarcely disturbed the self-complacency with

which these matters then were viewed, and apparently any criticism of the methods of celebrating the anniversary of the signing of the Declaration of Independence was looked on as unpatriotic. But year after year THE JOURNAL has persisted not only in revealing the horrifying results of the use of fireworks, but also in pointing out how silly and inexcusable was a "patriotism" which demanded each year such a wanton destruction of life and limb. Gradually, however, results began to be seen. At first a few cities adopted prohibitive or restrictive measures with such positive reductions in the number of killed and injured that other cities have followed suit. The most positive evidence of the nation-wide movement for a sane celebration and for the lessened use of fireworks, is the dissolution of the Pain Manufacturing Company, the largest and best known fireworks firm in the country. Here is what the firm says regarding its failure:

The season for the business conducted does not commence until June and runs for several months; the main business is done around and immediately previous to the Fourth of July each year. For the last years, or since the movement for what is commonly termed the "sane Fourth" has spread over the country, the value of the business done by the company has been reduced, so that at the present moment the amount of business the company is enabled to do is not sufficient to warrant the company's continuance.

Although one may have sympathy for those who have lost money or fortunes in the failure of this business enterprise, there is reason to rejoice, nevertheless, in the change of sentiment regarding the use of fireworks in our celebration which means, in future, the saving of thousands of lives, the prevention of many thousands of accidents and the saving from destruction by fire of property worth millions of dollars. It is gratifying to note, also, that instead of being continued as a hideous nightmare of disorder, danger and tumult, our Independence Day is being changed into a day for the development of genuine patriotism—respect for law and order, and pride in our national achievements.

NEITHER CLEVER NOR TRUTHFUL

The attempts of the lay press to comment on medical subjects are often most amusing when most seriously intended. Enjoyment of the unconscious humor in otherwise rather feeble witticisms like some which have recently appeared in *Life*, is hampered by the fact that these gibes at medical science are sometimes not only absurd, but viciously and maliciously untruthful, and, if they were seriously regarded, might result in public injury. For instance, *Life* comments as follows on the recent report that a Russian physician had committed murder by the use of diphtheria germs:

"Why, in the name of common sense, didn't he employ typhoid fever 'germs' in the pretense of immunizing the count from ever having that disease, as our army surgeons are doing with all soldiers and sailors who 'volunteer'—under the pressure of the anger of their superior officers in ease of refusal? Every such inoculation makes the lads ill ('reaction' is the technical term), and occasionally one of them will pass on, as the saying goes."

The item is headed "Not Clever." It should have been "Neither Clever nor Truthful." According to the

surgeon-general of the Army, about 20,000 antityphoid inoculations have been made in the Army of the United States. Of these, 85 per cent. caused no disagreeable symptoms whatever; 4.5 per cent. caused headache and slight temporary fever; and 0.5 per cent. more severe symptoms lasting several days; but in not a single instance has the procedure had any effects that could be called dangerous. There has been no death from this cause. The protective results of antityphoid vaccination in European armies, especially in the British army in India, have been so favorable as to warrant the continuance of inoculation. The comments of *Life* show glaring ignorance. We do not expect scientific accuracy from that publication, but even clowns should strive to keep within the bounds of common honesty by being truthful when they attempt to deal with serious matters, especially those which have a practical bearing on the public welfare.

AN "ALL-ROUND SPECIALIST"

Few there are who have looked to see a reincarnation in these days of the sage who took "all knowledge for his province." Viewing the vast and hitherto undreamed-of realms brought to human cognizance by specializing discoverers, timorous souls have believed—and the belief has become all too general in learned circles—that the complete mastery of even the complex science of medicine in all its divisions and branches was not to be expected of one human brain. It is now plain to be seen that we have despaired too soon. A prodigy has arisen in the west who announces himself on his letter-heads as an "All-Round Specialist." We should like to feel that the nursery of genius which produced the "All-Round Specialist" was engaged in fostering others of the same remarkable stock. We should then hear no more of the much-vexed problem of the division of fees between the specialist and the general practitioner, while the tedious distinctions between psychiatrist, ophthalmologist, pediatricist, gynecologist, dermatologist, and all the other medical specialists, would melt away like mist before the morning sun. Unfortunately, we are unable to find this gentleman's name on the alumni list of any medical college; so we fear that there is no hope for the present of a school of pan-specialists.

PROFESSOR VINCENT AND HIGHER EDUCATIONAL STANDARDS

If all statements appearing in the public press may be judged by those regarding the recent address by Prof. George E. Vincent,¹ then, indeed, very little confidence should be placed in newspaper reports. By quoting only the first part of a paragraph, the reports made it appear that Professor Vincent opposed higher standards of medical education, although a reading of the entire paragraph shows that the opposite is true. In fact, the address as a whole contains a severe arraignment of those who are opposing higher standards. Professor Vincent points out that one danger in raising educational standards—namely, limiting "the field of

choice to those groups which can afford the cost of long and expensive preparation," which "socially and professionally . . . would be deplorable"—could be offset by establishing "a system of scholarships" which could be "awarded by competent authority, after adequate tests, and continued only so long as the scholar's work justifies the support." It can be seen how easily a wrong impression could be conveyed by omitting the latter part of the paragraph. And that is what was done in the newspaper reports. This misquotation might have passed without comment, except for two reasons. The first is that Professor Vincent is soon to take the presidency of the University of Minnesota and, therefore, his views will have much to do in shaping the future educational policy of that state. The second is that Minnesota is on the firing-line in the fight for higher standards of medical education, and the enemies of such standards have widely circulated this erroneous report of Professor Vincent's views in an effort to obstruct the movement for higher standards. In the paragraph just preceding the one misquoted, the speaker makes special reference to those who are opposing higher standards of medical education. He shows these to be self-interested persons who look on the "medical career chiefly as a means of livelihood," and who "resent the rising standards . . . as obstacles to the early enjoyment of an income." It is important that this misquotation should be corrected, and especially that the people of Minnesota should appreciate the fact that in Professor Vincent they will have an able champion in their battle for higher standards of medical education.

STREET DUST AND FOOD

House Bill 154, now before the Illinois legislature, contains some provisions which will scarcely be welcome to street vendors of goods and delicacies, and probably not to the larger retail dealers. Among these are provisions to suppress the nuisance of the exposure on the streets, without protection from the street dust or other contamination, of fruits, vegetables and other foods. It is unfortunate that the average buyer has not that keen realization of the history and composition of street dust which, if generally diffused, would make goods so exposed unsalable. On the contrary, dealers complain that their sales are lessened if they do not so expose their wares. Instruction in the schools, showing the sources and components of street dust, as well as the peril of insect contamination, might be an effective way of agitating the subject and reaching homes where at present even newspapers do not penetrate freely—not that the illiterate are the only persons who ignore the dangers of street dust. To make them effective, the excellent provisions of this bill should be reenforced by popular education, since it will be most difficult to enforce in those quarters where enforcement is most needed.

Fibroids and Pregnancy.—A fibroid projecting into the uterine cavity—that is, a fibroid inside of the uterus—usually acts as a barrier to pregnancy, and if this does occur an abortion is likely to follow.—M. A. Tate, before Obstet. Soc. of Cincinnati.

1. Standards and Authority, p. 894, this issue.

Medical News

ILLINOIS

Personal.—Fire at Abingdon, March 11, destroyed the office equipment of Drs. Charles F. and Everett H. Bradway, the loss being estimated at \$1,000.—Dr. Barret B. Griffith, Springfield, who has been in Colorado Springs for several months on account of ill health, reports that he is slowly recovering from the injury to his foot.

Hospital Notes.—The John Warner Hospital, Clinton, is open for the reception of medical and surgical cases. Patients entering the hospital will be under the control of their own physicians as the hospital has no attending staff.

Chicago

Healer Fined.—A jury in the municipal court, on March 14, is said to have returned a verdict assessing a fine of \$200 against Mrs. M. Selike, a Milwaukee Avenue healer.

Personal.—Dr. Svenning Dahl, while attempting to get into a moving elevator at the Norwegian Lutheran Deaconess Home and Hospital, March 14, fell, sustaining a compound fracture of the right leg.

INDIANA

Tuberculosis Hospital Almost Ready.—It is announced that the State Tuberculosis Hospital, Rockville, will be ready to receive patients, April 1.

Dispensary Opened Twice a Week.—It is announced that the Free Dispensary of St. Mary's Hospital, Evansville, will now be open on Tuesday and Friday afternoons between 3 and 4 o'clock.

Semi-Centennials.—Dr. Carter H. Smith, Lebanon, was the guest of honor at a banquet given by the Boone County Medical Society, March 7, on the occasion of his completion of half a century in the practice of medicine.—The semi-centennial of the practice of medicine of Dr. William B. Graham, Noblesville, was celebrated, March 14, at a banquet tendered Dr. Graham by the Hamilton County Medical Society.

Personal.—Dr. and Mrs. Bleeker J. Knapp, Evansville, sailed for the Mediterranean, March 4.—Dr. Orange G. Pfaff, Indianapolis, who has been seriously ill with septicemia, is now reported to be improving.—Dr. John S. Whitson, Jonesboro, was thrown from his automobile when it was struck by a trolley car, March 15, but sustained only slight injuries.—The trustees of Indiana University have acted favorably on the request of Dr. Henry R. Alburger of the medical department, to come to Indianapolis and assume the position of pathologist at the City Hospital.—Dr. David H. VanNuys is reported to be seriously ill at the home of his son in Anderson.—Dr. Charles S. Goar, Indianapolis, while crossing the railroad tracks, March 17, was struck by a switch engine, but was not seriously injured.

MARYLAND

New Officers Elected.—The section on Neurology and Psychiatry of the Baltimore City Medical Society, at its annual meeting, March 10, elected Dr. Arthur P. Herring, president; Dr. G. Lane Taneyhill, secretary, and Dr. William R. Dunton, a member of the executive committee.

Personal.—Dr. H. Barton Jacobs sailed for France, March 18.—Dr. William H. Welch has been honored by the emperor of Germany with the decoration of the royal crown of Prussia, second class.—Dr. Christopher Johnston, professor of Egyptology in Johns Hopkins University, is ill with organic heart disease.—Dr. George F. Speicher, intern at the Maryland General Hospital, was operated on at the hospital, March 6, and is reported to be doing well.

The Recent Diphtheria Epidemic.—Dr. William H. Welch, professor of pathology in Johns Hopkins University, delivered an address to the medical students in Hopkins Hospital, March 13, in which he reviewed the recent diphtheria epidemic. He stated that of the sixty-three persons who gave positive cultures, about forty showed symptoms of the disease, while the others were carriers. There were only two deaths, both in cases of children who were already victims of malignant disease. Dr. Welch complimented the hospital staff on the energetic way with which the diphtheria epidemic had been handled. No new cases have developed at the Johns Hopkins Hospital or at the Church Home and Infirmary, and these institutions as well as the Hebrew Hospital are open as usual. A case developed, March 15, at University Hospital, but the patient was promptly isolated and no other case occurred. Two cases have also been reported among the lodgers at the Central Young Men's Christian Association, but the patients were promptly sent to the Infectious Disease Hospital.

MICHIGAN

Antituberculosis Society Organized.—Manistee County Antituberculosis Society has been organized with Prof. S. W. Baker as president, and Dr. Szymon Szudrawski, Manistee, as secretary, and has begun an organized campaign against the disease. Dr. Alfred S. Warthin, Ann Arbor, will deliver two lectures before the society in April.

Personal.—Dr. Charles A. Walsh, Bay City, is reported to be in a critical condition from cerebral hemorrhage.—Dr. Herbert A. Eades, Bay City, was thrown from his automobile, March 13, receiving bruises and cuts.—Dr. Robert H. DeCoux, Grand Rapids, was thrown from his buggy in a runaway accident, March 8, fracturing three ribs and a clavicle.

State Sanatorium.—Admission to the State Sanatorium, Howell, is obtained after examination by physicians appointed for each county, and on furnishing a certificate by the family physician. A charge of \$7.00 per week is made to those who are able to pay, but those who are unable to pay will be provided by the state with free care on proper certification from the superintendent of the poor and the judge of probate. No patient is allowed to remain longer than six months in the sanatorium save in unusual cases. It must be understood that the institution is for patients in the incipient stage of pulmonary tuberculosis, and in which a cure or arrest may be hoped for.

MINNESOTA

Interns Leave Hospital.—Three interns at the Swedish Hospital, Minneapolis, resenting the suspension of another intern, are said to have abandoned their work and left the hospital, February 25.

Speed Parting Guest.—Dr. Edward M. Gans, Eveleth, was the guest of honor at a dinner given, February 28, at which about 100 were present. Dr. Gans has severed his connection with the More Hospital and is about to move to North Dakota.

Deficiency Appropriation.—The senate committee has recommended that deficiency appropriation of \$13,000 be made to enable the State Board of Health to continue its fight against tuberculosis.—The bill to appropriate \$8,000 for the continuance of the work of the State Tuberculosis Commission was recommended for passage by the Senate Committee on Public Health, March 3.

NEW YORK

Medical Women Meet.—At the fifth annual meeting of the Women's Medical Society of New York State, held March 10, in the Academy of Medicine, New York City, Drs. Elizabeth M. Cushier, Manhattan, and Eliza M. Mosher, Brooklyn, delivered memorial addresses in honor of the late Drs. Elizabeth and Emily Blackwell. The following officers were elected: honorary president, Dr. Eliza M. Mosher, Brooklyn; president, Dr. Grace Peckham Murray, Manhattan; vice-presidents, Drs. Helene J. C. Kuhlmann, Buffalo; Angenette Parry, Manhattan, and Evelyn Garrigue, Millbrook; secretary, Dr. Eveline P. Ballantine, Rochester, and treasurer, Dr. Marion Craig Potter, Rochester. A banquet was given to the visiting delegates in the evening, over which Dr. Eliza M. Mosher presided.

Buffalo

Hospitals Opened.—The Ernest Wende Hospital, the temporary municipal hospital for contagious diseases, which has been renovated and newly equipped, is ready to receive patients.—The new contagious disease pavilion of the Children's Hospital is completed and ready to receive patients.

Personal.—Dr. Francis C. Goldsborough, formerly instructor in obstetrics at Johns Hopkins University, Baltimore, has succeeded Dr. Matthew D. Mann as professor of obstetrics at the University of Buffalo.—Dr. Archibald D. Carpenter has been elected chairman of the Civil Service Commission.—Dr. John D. Howland, deputy medical examiner of Erie County, has been appointed superintendent of the Erie County Hospital, vice Dr. Carroll J. Roberts, who has gone abroad.—Dr. Pierce J. Candee is ill with typhoid fever.—Dr. George B. Stocker has been appointed deputy medical examiner of Erie County.—Dr. Daniel V. McClure has been certified by the State Civil Service Commission at the head of the list of successful candidates at the recent competitive examination for medical superintendent of Erie County Almshouse.—Dr. Edward J. Meyer, who was operated on for hernia and appendicitis at St. Mary's Hospital, Rochester, Minn., February 13, is convalescent.—Dr. William H. Mansperger, who was recently operated on at St. Mary's Hospital, Rochester, Minn., is reported to be convalescent.

New York City

Middleton Goldsmith Lecture.—The Middleton Goldsmith Lecture of the New York Pathologic Society was delivered at the New York Academy of Medicine, March 18, by Prof. Frank P. Underhill, Yale University, on "A Consideration of Some Chemical Transformations of Proteins and Their Possible Bearing on Problems in Pathology."

Personal.—Dr. John N. Beekman, a retired practitioner, was knocked down by a truck at East Fourteenth Street, March 13, and painfully injured. —Health Commissioner Lederle returned from a vacation in a houseboat in Florida, March 12. —Dr. Robert S. Adams, house physician at the Waldorf-Astoria, is reported to be seriously ill at Murray Hill Sanitarium. —Dr. Burt D. Harrington, Brooklyn, is reported to be critically ill with erysipelas. —Dr. Godfrey R. Pisek has been appointed attending physician to the Willard Parker Hospital.

For the Control of Venereal Diseases.—At the meeting of the New York Obstetrical Society, held March 14, the subject for the evening was "Some of the Duties of the Gynecologist to the State and Public." The following resolution was adopted: Resolved, That it is the opinion of the New York State Obstetrical Society that the time has come to make a beginning in the control of venereal diseases: That the first necessity is for the provision of a place for the detention and care of flagrant and especially dangerous cases: That in pursuance of this object the Board of Estimate and Apportionment be requested to grant the request of the Board of Health for the provision of such a hospital.

Meningitis on Liner.—The Greek steamship *Patris* arrived at quarantine with five cases of cerebrospinal meningitis. Six other passengers died from the disease at sea. Dr. Alvah H. Doty said that for several years he had been watching for this disease and had found that as a rule it is brought on steamships from Greece. —On the steamship *Martha Washington*, which arrived a few days later from Trieste, Patras, Palermo and Algiers, there were four steerage passengers who seemed to be suffering from cerebrospinal meningitis and one passenger had died at sea whose symptoms were those of meningitis. All the patients were treated with Flexner's serum and the steamer will be held at quarantine until bacteriologic examinations have been made.

Health Bulletins.—The first of the three latest press bulletins of the Department of Health deals with fresh air, which is a great preventive of many infectious diseases, and states furthermore that the polluted atmosphere of ill ventilated rooms is one of the important factors in promoting the spread of diseases; the second warns the public, particularly those living on the lower East Side, against the danger from the use of wood alcohol which is mixed with cheap drinks by certain unscrupulous and criminal proprietors of barrooms and itinerant vendors; and the third, details the work of the department in the supervision of midwifery, and states that out of 129,031 births reported in the city in 1910, 52,010 were under the care of midwives. Since February 15 a new system has been inaugurated and put in effect by the Division of Child Hygiene. The city has been divided into 140 districts, corresponding to the school inspection districts, each under the charge of a medical inspector. Each inspector has a card index of each midwife in the district, and visits each midwife at least once a month. Any irregularity in equipment or manner of work of the midwife, or any insanitary condition in their homes is at once reported by the inspector. Investigations are made in all cases in which complaints are made.

Announcement of the Monthly Bulletin.—The ultimate object of all public health work is the preservation of health and the prolongation of life. As there can be no subject of more vital interest to each individual, the Department of Health desires the cooperation of every citizen, and presents the Bulletin as a means towards this end. It was interesting to note a steady fall in the death-rate from 28 per 1,000 in 1868 to 16 per 1,000 in 1910. From another table it was interesting to note the enormous reduction in mortality which had taken place in those whose ages were below 45; there had been no decline but an increase in the mortality in the ages over 46. While there has been a decided reduction in the mortality from small-pox, typhoid fever, diphtheria and pulmonary tuberculosis, there has been but little change in the mortality from measles, scarlet fever and bronchitis, and there is an increase in that from pneumonia, cancer, Bright's disease and heart disease. The division of communicable diseases is charged with (a) the sanitary supervision of tuberculosis, typhoid fever, cerebrospinal meningitis, malaria, puerperal septicemia, abortion and erysipelas; (b) the conduction of tuberculosis clinics and boat camps; (c) the administration of antitoxin and the per-

formance of intubation in diphtheria; (d) the management of the diagnosis laboratory, and the collection of specimens from branch stations throughout the city. The division of child hygiene has the following functions: (a) the control of the practice of midwives; (b) the supervision of foundlings; (c) the supervision of day nurseries and institutions for the care of dependent children; (d) the care of babies and prevention of infant mortality; (e) the medical inspection of and examination of school children; (f) the issuance of employment certificates.

PENNSYLVANIA

Personal.—Dr. John W. Beckett, Pittsburg, was struck by a trolley car, March 10, and seriously injured. —Dr. William M. Johnson, a retired practitioner of Harrisburg, is said to have been adjudged insane by the county court of Davidson County, Tenn.

New Medical Club.—The physicians of York have organized the York Medical Club with an initial membership of forty-five, and elected the following officers: president, Dr. Edward W. Brickley; vice-president, Dr. Lawton M. Hartman; secretary, Dr. William S. Weakley, and treasurer, Dr. Parker N. Wentz.

White Haven Report.—At the annual meeting of the White Haven Sanatorium Association, held March 13, Dr. Lawrence F. Flick, the president, announced the completion of an administration building, the completion of which added \$11,000 to the debt of the association, making a total debt of \$25,000. Last year 552 patients were admitted and a total of 683 patients treated. Of these 477 left or were discharged and there were 38 deaths. The report also showed that in 31 cases the disease was arrested; in 50 cases much improved; in 254 improved; of the other patients, 106 were not improved and one-third of these left the first month. The average cost of maintenance per patient per week was \$8.81 and the total amount expended for maintenance was \$67,282.99. The total receipts, including the balance for last year, was \$112,000. The total expenditures for the year were \$109,487. There was a loss of nearly 12 cents daily in the maintenance of each patient. There are 206 beds available for patients, of whom there have been 5,550 since opening. A building has been donated by Mrs. Eckley Coxe for the care of patients received in a dying condition.

Philadelphia

Medico-Chirurgical's New Building.—Plans are being prepared for several new buildings for the Medico-Chirurgical College, to be built on the south side of Cherry Street, between Seventeenth and Eighteenth Streets. The first building will be a one-story structure with a glass roof to be used for laboratory purposes. A fifth story will also be added to the present dispensary building on Cherry Street. Plans have been completed for the erection of a large corrugated-iron building on the lot adjoining the Medico-Chirurgical Hospital. The first use to which the addition will be put will be a bazaar and fair, to be held from May 29 to June 3 for the benefit of the hospital.

Personal.—Dr. George E. deSchweinitz announces that there is no basis for the rumor that he intends to resign the chair of ophthalmology in the Medical School of the University of Pennsylvania. —Dean Allen J. Smith, of the University of Pennsylvania, closed a series of popular health lectures, given under the auspices of the medical faculty, March 17. His talk was on "Flies and Other Insects as Carriers of Disease." —Dr. L. Webster Fox, who has been ill at his home in Haverford, is convalescent. —Dr. W. E. Kepler has been appointed an assistant medical inspector by Director Neff of the Department of Health and Charities. —Dr. Joseph S. Neff, Director of Public Health and Charities, who was injured by a fall in Atlantic City, March 13, has completely recovered.

VIRGINIA

New College Building.—It is reported that the University College of Medicine, Richmond, has placed the contract for the erection of a new college building to replace the one destroyed by fire in January last year. The new building will cost about \$135,000, and will be completed within a year.

Epileptic Colony.—The recent decision of the state supreme court against the Western State Hospital board in its efforts to retain the Muckland property, Lynchburg, means that the property may be sold and the proceeds used for the development of the State Epileptic Colony, which already has been opened with 100 inmates.

Station at Sanatorium.—The Norfolk and Western Railroad has ordered a station to be erected at the Catawba Road crossing for the accommodation of patients and others en

route to the State Sanatorium. The company has also put on an extra train on Tuesdays and Fridays for Catawba, which will meet the main-line trains.

WISCONSIN

Cottages for Isolation Hospital.—The city council of Racine has reported favorably on the appropriation for the construction of two cottages on the Isolation Hospital property south of the city for the care of individuals suffering from communicable diseases.

Personal.—Dr. John B. Spaulding, health officer of Kenosha, sustained severe injuries to his eyes by the breaking of a bottle of formaldehyd which he was using while making a fumigation.—Dr. Henry T. Brogan, city physician of West Allis, who has been critically ill with heart disease, is reported to be out of immediate danger.—Dr. Henry Blank, Milwaukee, has been appointed a trustee of the Johnston Emergency Hospital, vice Dr. Louis Fuldner, resigned.—Dr. Rollo U. Cairns, River Falls, has returned from abroad.—Dr. Gilbert E. Seaman, Milwaukee, has been appointed regent at large for the Milwaukee University.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 11, 1911.

A New Reportable Disease

The London County Council has issued an order making ophthalmia neonatorum a reportable disease. Thus, as in cases of the specific fevers, immediately on diagnosis a case must be reported to the health officer. The object is that more effectual means may be taken for its prevention and treatment.

Plague in India

According to the latest reports, there seems every indication that India is again entering on another grave epidemic of plague. During the week ended February 11, 24,715 cases and 22,278 deaths were reported. Of these deaths 11,116 occurred in the United Provinces. In this district the deaths during the whole of 1908 amounted only to 22,878 and during 1909 to 38,298.

Economic Entomology

The recent discoveries of the important part played by insects in the propagation of tropical diseases has caused much attention to be devoted to entomology, particularly economic entomology, in Great Britain, which has such extensive tropical possessions. At the Imperial College of Science and Technology, South Kensington, a course of studies in practical entomology for the training of young students has been inaugurated. The objects are to stimulate interest in the study of noxious insects throughout the tropical colonies, and thus gradually to organize an army of collectors and observers who will accumulate the material necessary for coping with the numerous pests which cause disease and devastate crops. The work has been placed under the control of Mr. Maxwell-Lefroy, imperial entomologist to the government of India.

Mr. Andrew Carnegie has agreed to pay for three years the expenses of sending three or four young men to the United States to receive a thorough training in the methods of dealing with noxious insects. At present, two traveling entomologists, appointed by the government, are traversing the whole of the British colonies in tropical Africa, and have received instructions to supply any official or resident with apparatus for the collection of specimens of noxious insects, and to give practical instructions. A preliminary survey has already been made of Nigeria, Nyassaland and part of British East Africa. Considering the paucity of the white population the number of men who have volunteered to assist in the work is highly creditable.

The Outbreak of Small-Pox

Since the outbreak of small-pox in London was reported in THE JOURNAL, March 18, fresh cases have occurred almost daily. There are now 42 patients under treatment and nine deaths have taken place. The disease has spread from the district of Mile End over a large part of the East End and has invaded part of the West and South. The question of the condition of the patients as regards vaccination is interesting. Seven children under the age of 8 have been attacked, of whom only two are said to have been vaccinated. These two had the disease in a very mild form and hardly seemed deranged in health. On the other hand, of the other unvac-

inated five, four died. Of fourteen patients between the ages of 8 and 30 years, three had never been vaccinated and eleven were vaccinated in infancy; none had been revaccinated. Of thirteen patients between ages of 30 and 60 all had been vaccinated in infancy, but none had been revaccinated; two died. Two of three patients over 60 died; they had all been vaccinated in infancy, but none had been revaccinated. Thus no case has so far occurred in a revaccinated person.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 3, 1911.

Antityphoid Vaccination

The Académie de médecine adopted the conclusions of Dr. Vincent's report (THE JOURNAL, Feb. 25, 1911, p. 601), put in the form of a motion, recommending the facultative employment of antityphoid vaccination. In the draft of the budget of the war department for 1911 is a provision of \$3,000 (15,000 francs) for the organization of a service of antityphoid vaccination to be annexed to the laboratory of the hospital connected with the school of Val-de-Grâce. Once installed, this service will cost annually about \$600 (3,000 francs).

The Study of the Gastric Secretion at High Altitudes.

On ascending to high levels anorexia is commonly experienced, generally accompanied by nausea and vomiting, of which the relative deprivation of oxygen is the most apparent cause. Dr. Raoul Bayeux of Paris has just communicated to the Académie des sciences the results of a series of experiments which he undertook on Mont Blanc to elucidate the mechanism of this anorexia by studying in a dog which had a gastric fistula the variations caused by the high altitude (4,360 meters, or over 14,000 feet), in the quantity of gastric juice secreted and its total acidity. He has ascertained that the quantity of gastric juice secreted in a given time after identical meals diminishes notably during sojourn at high altitude; the total acidity of this juice is only slightly diminished under the same conditions. The rate of secretion of the gastric juice is much retarded. This decrease of the secretory activity of the stomach is in harmony with the diminution of combustion already noted by Dr. Bayeux at the same altitudes. The insufficiency of gastric juice explains the loss of appetite. It also seems to explain the desire which is felt at very high altitudes for all foods capable of exciting the flow of gastric juice or supplying its place, such as lemon juice, vinegar and spices.

Internships Reserved for Women

A notice recently placed in the walls of the hospitals and of the Faculté de médecine aroused considerable interest among the students. It is in regard to the concours for the internship of the national asylum for convalescent women in the suburbs of Paris. The administration states that since the hospital is for women it seems to be appropriate to reserve the internships for women students alone.

Glycerin and Potassium Permanganate Cause Fire

In some military maneuvers, recently, a bottle of glycerin was broken and the glycerin ran over some packets of permanganate of potassium. These packets were covered with absorbent cotton, which took fire. Experiments show that chemical reaction takes place, with explosion and fire. It is therefore important to avoid packing glycerin and permanganate of potassium near each other in sanitary stores.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 2, 1911.

Personal

Professor Bernstein, director of the physiologic institute at Halle, will resign his teaching position at the beginning of the winter semester on account of advanced age.

Progress in the Care of Youths by the Prussian Government

According to an order of the department of education, dated January 18, the Prussian government will undertake the care of youths, that is, the intellectual, moral and physical welfare of young men from the time of leaving school until their period of military service. The associations already existing for this purpose will receive aid and new ones will be formed under the auspices of the authorities, and an appropriation of \$250,000 has been made by the government for the

purpose. The aims are to promote physical exercises (gymnastics, active sports, tours, etc.), encouragement of nature study, instruction in scientific and hygienic subjects, etc. The cooperation of physicians in the fulfilment of this task is very much desired by the minister.

Failure of the British Government to Take Part in the International Exposition of Hygiene at Dresden

While almost all of the civilized nations have already indicated their intention to send official representatives to the international exposition of hygiene at Dresden and to establish special national sections, the British government declined some time ago to participate. In the British House of Commons the minister of commerce was asked a short time ago the reasons for this decision. His answer was that the department of commerce had been required to furnish an official British section in the expositions at Brussels and Buenos Aires in 1910 and in the expositions at Rome and Turin in 1911. In consequence of these frequent demands on British industry for representation at expositions, the department of commerce was not able to take part in the organization of a section at Dresden. We are convinced that not only the British government but British trade will be little satisfied with this short-sighted position taken by the minister of commerce, for in the competition between the nations, which promises to be very lively at the Dresden exposition, Great Britain will play a quite unsatisfactory rôle.

Tuberculin Treatment of Railroad Employees

The pension office for the employees of the Prussian railroads is from now on to permit those patients with pulmonary tuberculosis, who have finished a treatment in one of their sanatoria, to be treated in an ambulant way with tuberculin by the physicians of the office if the sanatorium considers this desirable for a permanent cure. The tuberculin treatment, which is restricted to special cases, is carried out according to suitable regulations under careful directions of the sanatoria. Further, the pension office provides courses of instruction in two sanatoria for railroad surgeons on tuberculin treatment.

Railway Car Hygiene

A short time ago a representative in the Prussian parliament called attention to the imperfect hygiene of railway cars. He cited a case in which a member of parliament had evidently acquired a severe skin disease from the upholstered back of his seat during a railway journey. The member of parliament, therefore, wants the railway management to adopt for trial some apparatus for protection of the head and neck to be applied to the upholstered back of the seat. He recommended an apparatus in which protective strips of Japanese crêpe paper are so arranged that the passenger can draw out a strip to place under the head and neck. We scarcely believe that the railway management will adopt this recommendation, which would be quite expensive and which could not be guarded against abuse. Protective coverings for the head in railroad travel are already for sale and can be provided by anyone at slight expense.

Association News

TRAINS TO LOS ANGELES

Details of Special Trains and Special Parties Arranged for the Trip to the Next Annual Session

For many weeks past there have been printed in this department of Association News various details concerning the Los Angeles session and the trip thereto, viz., lists of meeting places, a schedule of hotels and rates, railroad rates, etc. (The eastern rates have not been announced; they will be given in these columns as soon as the information can be obtained.) Announcement has also been made that early in May there will be a special issue of THE JOURNAL reiterating all this information and giving also the program of each Section and much other information such as is usually gathered into this annual special number. It will contain a map of Los Angeles and many fine pictures of that city.

In attending this session a wonderful opportunity is offered for a vacation that will be not only a pleasurable one, but also a profitable one. The amount of pleasure and profit

to be gained by the trip, however, will depend on whether the individual has studied for himself the opportunities presented.

Below are given in brief accounts of some of the special parties that are being arranged. But no one will depend alone on this description. Everyone who is thinking of going to Los Angeles should write for booklets and information to all whose addresses are given in the following itineraries. If these books are studied, one can obtain a general knowledge of the various attractions and then can decide which route is the most attractive. Some will want to see the Grand Canyon of the Arizona, a sight worth a trip across the country. Others will feel more favorable to the Pike's Peak country, Manitou, the Garden of the Gods and the various attractions of that part of the Rocky Mountains. Others will have a great desire to see the Yellowstone Park and its wonders. Still others will seek the northwestern part of the country—Oregon, Washington, etc., and the attractions of the Canadian Rockies on the Canadian Pacific. Not all of these can be seen on one trip, even on the round trip. Each individual should make up his mind what he is most anxious to see and then study the various itineraries and learn which one will best suit him.

The advantages of selecting one of the special trains, rather than to go by the regular trains, are the additional conveniences provided, the pleasure of traveling with friends and acquaintances, and the relief from the cares of looking after change of trains, hunting up conveyances for side trips, guides, etc., and the satisfaction of having everything provided in advance for comfort and for entertainment during the trip.

We mention below the special trains concerning which we have received information:

AMERICAN MEDICAL SPECIAL.—This luxurious Pullman train with full equipment will run from Chicago to Los Angeles via the Santa Fe and will leave Chicago at 8:00 p. m., Wednesday, June 21, reaching Kansas City at 9:00 a. m., Thursday, June 22, and running thence through New Mexico and Arizona to Los Angeles, which will be reached Monday, June 26, at 7:00 a. m. At Albuquerque the train will make a stop of an hour and a half to allow an inspection of the Fred Harvey collection of Indian handwork. Another stop will be made at Laguna, where an hour will be allowed to inspect the village of the Laguna Indians. The train will stop at the Grand Canyon for twenty-eight hours, giving opportunity to see the Grand Canyon of the Arizona. The desert of lower California will be crossed in the night. At San Bernardino the train will be divided—one section running through directly to Los Angeles, arriving at 7:00 a. m.—and the other going via Redlands and Riverside, stopping at each of these places to allow visits to points of interest. This section arrives at Los Angeles at 4:30 p. m., Monday. Special illustrated folders, reservations and full information may be obtained from G. T. Gunip, General Agent, A. T. & S. F. Ry., 105 Adams Street, Chicago.

AMERICAN ACADEMY OF MEDICINE TOUR.—Another trip arranged from the east is that of the American Academy of Medicine, whose itineraries have been selected and arranged under the guidance of the passenger departments of the railroads to secure the most desirable trains and the best disposition of daylight sight seeing. Regular trains will be used. This party will leave New York over the Lehigh Valley railroad at 11:55 a. m., Monday, June 12, Philadelphia, at 12:30 p. m., and join the New York train at South Bethlehem at 2:12 p. m. and arrive at Buffalo over the Lehigh Valley at 10:27 p. m. The route will be thence over the Grand Trunk to Chicago, the Burlington to Denver and to Los Angeles over the Santa Fe. Interesting side trips and visits to the points of interest in Colorado and to the Grand Canyon will be provided for and Los Angeles will be reached Friday, June 23, in time for the sessions of the academy, which meets in advance of the American Medical Association. This party may be joined at various points along the route at a much later date, in case it is not desired to spend so much time on the going trip. Reservations for this party are to be made through the secretary, Dr. Charles McIntire, 52 North Fourth Street, Easton, Pa., from whom may be obtained the folder containing all details, both of the outgoing and of the return trip.

BURLINGTON-COLORADO SCENIC SPECIAL.—This special train from Chicago to Los Angeles, via the Burlington, Denver & Rio Grande and the Salt Lake Route, will have the finest equipment of the Burlington road. It leaves Chicago at 11:00 p. m., June 21, and reaches Denver at 7:00 a. m., June 23. The party will spend four hours in Denver and vicinity, leaving at 11:00 a. m., June 23, reaching Colorado Springs (Manitou) at 1:30 p. m. The train will be parked and will remain there all night. This will give an opportunity for the party to go up Pike's Peak, visit the Garden of the Gods, Cheyenne Canyon, the celebrated "High Drive," the famous Iron and Soda Springs, and other points. The train leaves Manitou at 4:30 a. m., June 24, and reaches the Royal Gorge at 7:30 a. m., giving a splendid opportunity to see this wonderful gorge. At Glenwood Springs, an hour and a half will be spent, and Salt Lake City will be reached at 8:30 a. m., June 25. Four hours will be spent in Salt Lake, leaving at 1:00 p. m., and Los Angeles will be reached at 12:00 o'clock noon on June 26. This train traverses the mining regions of Utah and Nevada, and Rainbow Canyon and the Canyon of the Mojave River before reaching the orange country of southern California. This train has been arranged at the request of many physicians (represented by Drs. Robert T. Gillmore, Sidney Kuh and Charles B. Reed), who want to go by the Manitou and Royal Gorge route. Full details and illustrated booklets may be obtained from A. J. Poole, General Agent, C. B. & Q. Ry., Chicago.

CHICAGO MEDICAL SOCIETY SPECIAL.—The special train of the Chicago Medical Society will leave Chicago at 9:15 p. m., June 22, via the C. & N. W. Ry.; arrive in Omaha 9:15 a. m., June 23, leave Omaha 9:30 a. m., arrive in Salt Lake 1:30 p. m., June 24, spending the afternoon at Salt Lake, leaving at 5:30 p. m., June 24, via Salt Lake Route, arriving at Los Angeles at 4:30 p. m., June 25. This train will be provided with full Pullman equipment of the most complete and modern character. Meals in dining car will be served à la carte. At Salt Lake arrangements will be made for a special organ recital at the Mormon tabernacle, balance of the afternoon to be spent in sight-seeing. Leaving Salt Lake, the journey lies over the Salt Lake Route through Utah and Nevada, reaching the rich mining districts, passing through Caliente, where Rainbow Canyon is entered, with its great walls of rock of every shade; and Las Vegas. Entering California, the line traverses the canyon of the Mojave river and at San Bernardino reaches the famous Orange Belt of California. The train then runs through Riverside, Ontario and Pomona, cities situated in the fruit-growing section adjacent to Los Angeles. Arrangements have been made so that any physician anticipating telegrams en route will have same sent in care of this special train and be received promptly. Standard sleeping car rate, \$13.00 for double lower berth, \$10.40 for upper berth, \$36.50 for compartment, and \$46.00 for drawing room. Elaborate itinerary will be furnished on application to Dr. George F. Snker, Secretary, 103 State Street, Chicago.

GATES SPECIAL TRAIN.—A special itinerary is being arranged by the Gates Tours of Toledo, O., with several optional return schedules. A special train will leave Chicago, June 20, stopping enroute at the Grand Canyon, and returning, trains will leave Los Angeles July 1. Full details of the trips, including the return schedules which include Alaska, may be obtained of the Gates Tours, Toledo, O.

MISSOURI VALLEY SPECIAL.—This special train, under the auspices of the Medical Society of the Missouri Valley and the Medical Association of the Southwest, will accommodate members from the central west and southwest. It will leave Kansas City Thursday, June 22, via the Santa Fe, and will also stop over one day for the trip to the beautiful Grand Canyon. It will arrive at Los Angeles on Sunday, after the trip through the orange country. The tour will be personally conducted and a special interesting itinerary is planned for the return trip. Full particulars may be obtained, and hotel and Pullman accommodations arranged for, through Dr. Charles Wood Fasset, St. Joseph, Mo.

NEW YORK AND NEW ENGLAND SPECIAL.—This is another train which has been planned in care of McCann's Tours by Dr. Wisner R. Townsend, Secretary of the New York State Medical Society. This train, fully equipped with modern conveniences and comforts, will leave New York, via the New York Central Lines, at 6:30 p. m., Monday, June 19, connecting with trains leaving Boston at 2:00 p. m., Worcester at 3:11 p. m., Springfield 4:40 p. m., and Pittsfield 6:30 p. m. It leaves Albany at 9:55 p. m., Utica 11:55 p. m., Syracuse 1:08 a. m., June 20, Rochester 2:45 a. m., Buffalo 4:30 a. m. The train will run thence via Cleveland, Indianapolis and St. Louis, and from Kansas City via the Santa Fe through New Mexico and Arizona, reaching the Grand Canyon, Friday, June 23, where twenty-eight hours will be devoted to sight seeing in this marvelous natural chasm, one of the wonders of the world. Los Angeles will be reached at 9:00 p. m., June 25. Time will be allowed to visit the famous orange groves and to view the other points of interest at Riverside and Redlands, as has been described above concerning the other trains. The return trip is one of some length and will include many other parts of the beautiful west which are to be enjoyed at leisure. Information concerning this tour and the daily schedule of the train, including the various possibilities on the return trip, may be obtained through Dr. Wisner R. Townsend, 125 W. 58th Street, New York City.

PENNSYLVANIA SPECIAL.—From the east a personally conducted tour has been arranged under the direction of Dr. C. L. Stevens, Secretary of the Pennsylvania State Medical Society, Athens, Pa., in conjunction with McCann's Tours. The train will be of the highest grade Pullman equipment, including a gentlemen's club car and a ladies' club and observation car, with all the accessories and accommodations of the modern train *de luxe*. The special train will leave Jersey City Saturday, June 17, at 4:14 p. m., via the Lehigh Valley railroad, and may be joined at various points between there and Buffalo by passengers from New Jersey, eastern Pennsylvania and Maryland. The train will leave Buffalo via the Lake Shore at 4:30 a. m., June 18, running thence through Cleveland, Indianapolis, St. Louis, Kansas City, Santa Fe, and Albuquerque to the Grand Canyon, where a side trip of twenty-eight hours will be made. Thence the route will include the heart of the orange country in California, Riverside and Redlands, at both of which places time stops will be made. Los Angeles will be reached Friday, June 23, at 9:00 p. m. Full information concerning this tour is contained in a little booklet, which may be obtained from Secretary Stevens.

RETURN TRIPS

As will be noted, several of these tours provide for the return trip by different routes, with interesting side trips. Full information about them can be obtained from the railroads or from the parties named above. In the advertising pages of THE JOURNAL, now and in later issues, will be found announcements of many of these railroads and trips. Members are urged to secure the booklets and folders issued by the railroads concerning these trips and post themselves in order to secure the greatest advantages from the visit to the west.

There are numerous ways of returning from the meeting, all of which offer advantages that will appeal to the members and their friends. The return trip from Los Angeles may be made by boat to San Francisco, Portland and Seattle, or by the southern routes over the Southern Pacific, the Rock Island, the Santa Fe, the Salt Lake route or through San Francisco by way of the Southern Pacific and Union Pacific, which offers opportunity for a side trip to the Yellowstone Park and a visit to Salt Lake and all the points of interest in Colorado. Or the return trip may be made by the northern routes—the Northern Pacific, the Chicago, Milwaukee and St. Paul, the Great Northern or the Canadian Pacific—visiting the cities of the northwest—Portland, Tacoma, Seattle and Vancouver—and the various points of interest in the Rockies, including the trip to Yellowstone Park, which may be reached from the Northern Pacific at Livingston, Montana.

Even Alaska and Hawaii will be visited by some. The beauties of the west are at the service of the physicians and their families and friends, and a delightful outing is ready.

Marriages

LEROY S. TOWNSEND, M.D., to Mrs. Grace R. Coates, both of Beaver Falls, Pa., February 28.

GEORGE A. NOLAND, M.D., Ashburn, Va., to Miss Mary Louise Lambert, at Baltimore, March 8.

WILLIAM DAVIS TEWKSBURY, M.D., Washington, D. C., to Miss Susan Tidball West, at Roanoke, Va., February 25.

Deaths

William Warren Potter, M.D. A surgeon of skill and judgment, and a student of acumen and originality in medical science, died at his home in Buffalo, March 14, aged 72. He was born in Strykersville, N. Y., and was graduated from the Medical Department of the University of Buffalo in 1859. He came of a long direct and collateral line of celebrated physicians. At the outbreak of the Civil War, he entered the service as assistant surgeon of the Forty-Ninth New York Volunteer Infantry, served in the Army of the Potomac, was captured, and confined in Libby Prison, but soon exchanged. He was afterward promoted to surgeon of the Fifty-Seventh New York Volunteer Infantry, and after the battle of Gettysburg, was assigned to the charge of the First Division Hospital, Second Army Corps. He was brevetted lieutenant colonel, U. S. V. for faithful and meritorious services. After the close of the war Dr. Potter practiced in Batavia but soon returned to Buffalo. Of late years he has limited his practice to gynecology. His society membership includes the American Medical Association, in which he was chairman of the Section on Diseases of Women in 1890; the Medical Society of the State of New York, of which he was president in 1891; the Medical Society of the County of Erie, of which he was president in 1893; and the Buffalo Medical and Surgical Association, of which he was president in 1886. He has been secretary of the American Association of Obstetricians and Gynecologists since 1888; and was president of the Section on Gynecology and Abdominal Surgery of the first Pan-American Medical Congress. Since 1891, he had been the president and examiner in obstetrics and gynecology of the New York State Board of Medical Examiners, and from 1895 to 1899, he was president of the National Confederation of Medical Examining and Licensing Boards. He was also consulting surgeon to the Buffalo General Hospital. Dr. Potter has been editor of the *Buffalo Medical Journal* since 1888. His death is a great loss to his colleagues in Buffalo and western New York and to the medical profession at large.

George Gorgas Craig, M.D. Jefferson Medical College, 1869; one of the most prominent practitioners of western Illinois, died at his home in Rock Island, March 12, from pneumonia, complicated by cirrhosis of the liver, aged 65. At the age of 17 he enlisted in the Fifty-First Pennsylvania Volunteer Infantry and served through the last two years of the Civil War. Immediately after his graduation he moved to Rock Island, where he afterward resided. In May, 1889, he was appointed acting assistant surgeon U. S. Army and surgeon to the Rock Island Arsenal by the Secretary of War and served continuously in this position until his death. When the Medical Reserve Corps was created he was commissioned as a first lieutenant in that body. Dr. Craig devoted much time to the study of sanitary science and was instrumental in the organization of the Health Department of Rock Island. In 1896, with Dr. Carl Bernhardt, and the late Dr. C. C. Carter, he founded the Rock Island Sanitarium, with which he was connected until it was dissolved in 1906. His society membership included the American Medical Association, American Public Health Association, and Association of Military Surgeons of the United States. He was past president of the Illinois and Iowa Central District Medical Association, and Rock Island County Medical Society.

Warren Bell Outten, M.D. Washington University, St. Louis, 1866; a member of the American Medical Association; and a prominent railway surgeon of the Southwest; died at his home in St. Louis, March 18, from pneumonia, aged 66. For thirty-six years Dr. Outten was chief surgeon of the Missouri Pacific Railway Hospital Department. He was consulting surgeon to the Missouri Pacific System, and president of the National Association of Railway Surgeons. During the cholera epidemic in 1866, he served as acting assistant surgeon U. S. Army. He was consulting surgeon to the St. Louis City Hospital, St. Luke's Hospital, the Baptist Sanitarium, and Mount St. Rosa Infirmary. He was also president of the *Interstate*

Medical Journal Company. Dr. Outten was an authority on railway injuries, and was the author of a valuable work entitled "Railway Injuries; Their Clinical and Medicolegal Features."

Pierre Wilson, M.D. Missouri Medical College, St. Louis, 1884; formerly a member of the American Medical Association; professor of pathology, gynecology and abdominal surgery in Baylor University, Dallas, Tex.; died at his home in Harlingen, Tex., March 8. The Dallas Medical and Surgical Society, at its monthly meeting, March 10, adopted resolutions setting forth the service to humanity rendered by Dr. Wilson, and extending sympathy to his family. Similar resolutions were passed by the students of the departments of medicine and pharmacy of Baylor University.

Samuel Hall, M.D. New York University, New York City, 1843; a member of the Volunteer Corps of New York City during the Civil War; formerly a member of the New York Academy of Medicine, and vice-president of the Medical Alumni Association of New York University; consulting physician to the Northern Dispensary, commissioner of public works in New York City in 1873; and trustee of the New York and Brooklyn Bridge; president of the school board of Rye in 1894; died in his apartments in New York City, March 10, aged 91.

Thomas F. O'Malley, M.D. Rush Medical College, 1886; a member of the Illinois State Medical Society; who in his young manhood studied for the priesthood in Ireland but was never ordained; from 1892 to 1899 chief medical examiner of the Catholic Order of Foresters; died at his home in Chicago, March 19, from pneumonia, aged 50.

Horace A. Peabody, M.D. College of Physicians and Surgeons, Chicago, 1886; formerly a member of the South Dakota State Medical Association; a specialist on diseases of the eye, ear, nose and throat of Webster; formerly president of the State Board of Health; died in St. Augustine, Fla., March 6, from heart disease, aged 55.

John A. M. Lambert, M.D. Medical School of Maine, Brunswick, 1852; formerly president of the Bennington County (Vt.), and Berkshire County (N. Y.) Medical Societies; historian of Washington County (N. Y.) Medical Society; died at his home in Salem, N. Y., March 2, from cerebral hemorrhage, aged 82.

Hiram Noble, M.D. Victoria College, Coburg, Ont., 1857; formerly of Onawa, Iowa; and later councilman and twice mayor of Blair, Neb.; a member of the Washington County board and of the local pension board, and county physician; died at his home in Blair, March 8, from cerebral hemorrhage, aged 82.

Thomas Beattie, M.D. University of Edinburgh, Scotland, 1849; M.R.C.S., Edinburgh, 1849; surgeon of the ship *Restitution* on its cruise round Greenland in 1849; for more than fifty years a practitioner of Cass County, Mo.; died at his home in Harrisonville, February 3, from cerebral hemorrhage, aged 83.

Harry Cheetham Leech, M.D. University of Pennsylvania, Philadelphia, 1907; of Providence, R. I.; died in a drugstore in that city, March 6, aged 26, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of the death of his mother.

Thomas L. Foulds, M.D. Indiana Medical College, Indianapolis, 1876; a member of the American Medical Association; formerly president of the Alton (Ill.) Medical Society; a specialist in diseases of the eye, ear, nose and throat; died at his home, March 7, from kidney disease, aged 57.

James Dow Appley, M.D. Philadelphia College of Medicine and Surgery, 1871; a member of the American Medical Association; local surgeon for the Delaware and Hudson Railroad; died at his home in Binghamton, N. Y., February 18, from valvular heart disease, aged 65.

Clara A. Swain, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1869; for forty years a missionary in India, where she was a pioneer in the establishment of hospitals for women; died at her home in Brookside, Castile, N. Y., Dec. 25, 1910, aged 76.

Marion Augustus Baldwin, M.D. Tulane University, New Orleans, 1866; local surgeon at Cuthbert, Ga., for the Central Railroad of Georgia, and a member of the National Association of Railway Surgeons; died at his home, March 2, aged 78.

William B. Young, M.D. Medical College of the State of South Carolina, Charleston, 1904; of Rockhill; a member of the South Carolina Medical Association; died in the Florence (S. C.) Infirmary, Dec. 20, 1910, from typhoid fever, aged 33.

"The Propaganda for Reform"

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

PROPRIETARY VERSUS UNPROTECTED NAMES

The Question of Term to be Applied to the Active Principle of the Suprarenal Gland

Some years ago the Council on Pharmacy and Chemistry decided that it was necessary to adopt, in each instance, a generic term to designate those products that are on the market under two or more proprietary names. When it came to the consideration of the various preparations of the blood-pressure-raising principle of the suprarenal gland which were on the market, it was necessary to establish some name that should be common to all of them. The name adopted was "epinephrin." This was selected in part because it was the name under which the preparation was first called to the attention of the profession of this country by Professor Abel, as will be mentioned later. Further, the name is one which is as appropriate for the preparation as any adopted by the various manufacturers, and is, in addition, easily learned. We doubt if any one will deny that the Council on Pharmacy and Chemistry, representing as it does the American Medical Association and the medical profession of the United States, has as much right to adopt a name for the preparation as has any manufacturing firm.

For several years THE JOURNAL has endeavored to follow the unquestionably correct plan of using the scientific name of a drug or medicinal preparation in preference to the coined trade name—the proprietary name given by the manufacturer. After the adoption of the term "epinephrin," THE JOURNAL began occasionally to substitute that term for the proprietary names of suprarenal products in abstracting, but only in instances in which it was evident that the author was using the proprietary name in a general sense. In original articles, however, this was not done without the author's permission. In this way it was hoped that the medical profession would gradually be led to appreciate the fact that there is a common name for the substance. Only one protest has been received, and that from Parke, Davis & Co., a firm which sells the substance under the name "adrenalin." It was as follows:

PARKE, DAVIS & CO. PROTEST

To the Editor:—We wish to protest against the unfair manner in which one of your department editors (Current Medical Literature) is treating us.

When a reputable practitioner reports to the London *Lancet* that "the effects from the treatment of the paroxysms of asthma by the hypodermic injection of adrenalin are marvelous," your department editor is taking an unjustifiable liberty when he changes the word adrenalin to epinephrin. He knows, you know, that there is no such thing on the market as epinephrin, and that Dr. Melland used our product, adrenalin; that over 90 per cent. of all clinical work done with the active principle of the suprarenal gland is done with our preparation, adrenalin, and that it is equally unfair to your readers and unfair to the manufacturer to deliberately substitute any other name—just as wrong as it would be for a druggist to substitute any other product.

In the *Wiener klinische Wochenschrift*, May 12, Dr. Kreibich did not treat of the subject which you put in his mouth. His article was devoted to "Adrenalin Technik for Determination of Leukocytes in Tissues." Do you think it right to put in his mouth a name of which Dr. Kreibich probably never heard in his life?

It is no answer to say that you have given the same treatment to one of our competitors in abstracting an article from the *Deutsche Zeitschrift für Chirurgie*. Dr. Heidenhain undoubtedly never heard of epinephrin. He writes of the behavior of a preparation made by one of our competitors, suprarenin.

We spent tens of thousands of dollars on experimental work before our chemist, Dr. Takamine, isolated the active principle of the suprarenal gland. We now pay him a royalty on every grain of the drug and every ounce of the solution. You know that there is no such thing on any market as epinephrin. And yet you try to deprive us of the credit which is fairly ours. A fine premium you are putting on originality, enterprise and research work by commercial houses! Here we have enriched the practice of medicine with the most remarkable agent discovered since Köhler noted the anesthetic properties of cocaine (excepting always the antidiphtheritic serum); yet when a reputable physician reports his experience to the medical press, THE JOURNAL of the American Medical Association deliberately strikes out the name used by the author and substitutes one of its own.

Is this the way to teach ethics to others?

PARKE, DAVIS & CO.,
E. G. SWIFT, General Manager.

This letter was received last June. Immediately after its receipt we began an investigation as to the views of those who use the name "adrenalin" in their printed articles. To this investigation we shall refer again. It is mentioned here to explain why the letter has not been published before.

SCIENTIFIC NAMES A NECESSITY

Aside from the question of priority of discovery, this protest raises a problem much broader and deeper than any question of personal credit or commercial aggrandizement, one which concerns the ethical and scientific status of protected names. In all countries the use of trade names in scientific treatises is discountenanced, and for very evident reasons. Hence a medicinal substance should have a scientific name by which it may be known in literature in contra-distinction to any trade name by which it may be called. This is especially true when a substance is sold under two or more proprietary names.

There are already thirty or forty different trade names for this active principle.¹ There is nothing to prevent a hundred firms or individuals from marketing this substance, each under a different trade name. Can nothing then be done? Are our abstracters to quote each of these one hundred or more names? Is it necessary that a physician use some trade name every time he mentions the substance?

If there were but one product on the market, there might be comparatively little objection to the use of the proprietary name as a generic term. When there are several, however, the adoption of one proprietary name as a generic term for that whole class of products is an injustice to all the other products in that class. Moreover, in the inevitable confusion that results, science is sacrificed to commercialism.

WHAT A BRITISH EDITOR THINKS

Very recently this same point has been discussed in British medical and pharmaceutical circles. In the London *Lancet*, Jan. 7, 1911, p. 73, there was a short note taking the editor of the "Year Book of Pharmacy" to task for substituting a generic term² for the proprietary name "adrenalin" in giving an abstract of an article that had appeared in the *Lancet*. Mr. J. O. Braithwaite, the editor of the "Year Book of Pharmacy," in a letter in the *Lancet*, Jan. 28, 1911, p. 264, justifies his course in using a generic term² in such cases, on the reasonable ground that it tends "to lessen confusion and to increase accuracy."

After showing how the use of a multitude of names for the same substance tends to degrade scientific work, Mr. Braithwaite stated that to use, in abstracting, a generic word as a "common denominator," did injustice to no one. Rather, says he: "The injustice, if any, arises entirely from the loose manner in which trade names and proprietary euphemisms are applied to these newer remedies. This has caused them as a class to fall into disrepute, and has reflected hardly on the few more valuable therapeutic articles among them. . . . Moreover, it is no function of the 'Year Book of Pharmacy,' in its abstracts to advertise either 'preparations' or persons. These abstracts are intended solely to record scientific facts or practical details of use to pharmacists in their calling, or to those who are interested in the subjects with which they deal."

GENERIC TERMS INJURE NO ONE

The introduction of a generic term does not prevent any physician from using the word "adrenalin," or the proprietary name of any other product. If a physician believes a certain brand to be superior, or if he wishes to contribute royalty to the enterprise of the manufacturer, then he is justified in using the proprietary term.

1. Among the proprietary preparations of the suprarenal principle made in the United States are the following: Adnephrin (Frederick Stearns & Co.), Adrenalin (Parke, Davis & Co.), Adrin (H. K. Mulford & Co.), Supracapsulin (Cudahy Co.), and Suprarenalin (Armour & Co.). In Europe among others are: Atrabillin, Chelafrinum, Epirenan, Hemostasin, Hemisine, Ischemin, Paranephrin (Merek), Reuiform, Supranephran, Suprarenaden, Suprarenin (Hoechst), Suprarenin synthetic, Tonogen and Vasoconstrictin.

2. The generic term used by the editor of the "Year Book of Pharmacy" is "adrenaline."

As a matter of fact, the word "adrenalin" has come into use as a generic name because Parke, Davis & Co. were the first manufacturers to "push" this product. This was done in all countries. The name this firm adopted was a catchy one, and as a result it is a fact that to-day, not only in this country but in Europe, "adrenalin" is regarded as a common name by a host of physicians, and used as such. In our correspondence regarding this matter this statement has been made repeatedly: "I used the term 'adrenalin' because I thought it was the common term."

In this connection, we desire to say that Parke, Davis & Co. are mistaken in asserting that we know that Dr. Melland used their preparation. On the contrary, study of his article shows that he used the word in a generic sense. Whether he used the preparation made by Parke, Davis & Co. or some other preparation is not specified.

"Do you think it is right," ask Parke, Davis & Co., "to put into his mouth a name of which Dr. Kreibich never heard in his life?" We think it right to use the word which will convey the idea to the reader's mind without chance of misapprehension. We think it wrong to use a word which has a double sense, when that can be avoided. Unless an author's words are meant to apply solely to the preparation made by Parke, Davis & Co., it is not right that that product should derive benefit from them.

Say Parke, Davis & Co.: "You know that there is no such thing on any market as epinephrin." This is true, and for the simple reason that every manufacturer, for purely commercial reasons, without regard to science, adopts a trade name for his product and pushes that product under that trade name for all it is worth. But if medical men will make it a point to use the word epinephrin in their discussions, in their writings, and in their prescriptions, it will not be long before there will be plenty of epinephrin on the market. As a matter of fact, already one firm (Mulford & Co.) has used as a synonym for its preparation, adrin, the term "epinephrin" and two other firms have expressed willingness to adopt epinephrin as a synonym. We sincerely hope that in the interest of science other manufacturers will do likewise, although it may be too much to expect that all will take this enlightened attitude.

COMMERCIAL PREPARATIONS NOT IDENTICAL

It is understood, of course, that the preparations on the market are not necessarily identical, since the drug is in solution, and these solutions vary according to the preservative and the solvent used.³ On this account some physicians will find it more satisfactory to use this or that firm's product, in which case they would of course indicate it either by appending the firm's name after the common term "epinephrin," or by using the firm's trade name.

In view of the fact that the name "adrenalin" has been trademarked by the manufacturers of this particular product and is, therefore, no longer the scientific name for the suprarenal principle, the question of priority in its discovery or preparation is one of minor importance in this connection. However, the history of this drug disproves the claim of the manufacturers of "adrenalin" of exclusive priority in the discovery. The progress of scientific discovery is rarely such that any firm or individual can truly claim all the credit.

But before going into the history let us again quote from the Parke-Davis letter:

We spent tens of thousands of dollars on experimental work before our chemist, Dr. Takamine, isolated the active principle of the suprarenal gland. We now pay him a royalty on every grain of the drug and every ounce of the solution. You know that there is no such thing on any market as epinephrin. And yet you try to deprive us of the credit which is fairly ours. A fine premium you are putting on originality, enterprise and research work by commercial houses! Here we have enriched the practice of medicine with the most remarkable agent discovered since Köhler noted the anesthetic properties of cocaine (excepting always the antidiphtheritic serum); yet when a reputable physician reports his experience to the medical press, THE JOURNAL of the American Medical Association deliberately strikes out the name used by the author and substitutes one of its own. Is this the way to teach ethics to others?

How much Parke, Davis & Co. spent on the experimental work that resulted in Takamine isolating "adrenalin" is a matter best known to that firm. The following quotation from the article⁴ by Takamine in which he announced the results of his work is interesting in this connection:

"Having been interested in this subject for some time I recently commenced to make research along that line. I am now pleased to announce that I have succeeded in isolating the blood-pressure-raising principle of the gland in a stable and pure crystalline form." [Italics ours.—Ed.]

If Takamine isolated "adrenalin" so soon after commencing his research work, one wonders why it was necessary for Parke, Davis & Co. to expend "tens of thousands of dollars" for such a rapid piece of work. But this point is immaterial. The implication here is that Parke, Davis & Co. deserve the sole credit for the discovery of the active principle of the suprarenal glands. Now for the facts regarding this matter.

THE HISTORY OF THE DISCOVERY

More than half a century ago it was discovered that the suprarenal glands contain substances which give peculiar color reactions.⁵ These properties were believed to be due to the presence of pyrocatechin or to its derivatives. Since 1894⁶ it has been known that extract of the suprarenal glands possessed remarkable blood-pressure-raising and local astringent properties.

The blood-pressure-raising principle of the suprarenal gland was first isolated by Abel and Crawford⁷ in 1897 in the form of its benzoyl compound. Finding this substance and its derivatives to be physiologically active, Abel believed that he had isolated the true active principle of the suprarenal gland in a pure state and named it "epinephrin,"⁸ meaning, of course, that the name should apply to the true blood-pressure-raising constituent. The soluble salts of epinephrin, as prepared by Abel would, no doubt, have met all the needs of practical medicine if his methods of preparation had not been too expensive.⁹

Contemporaneous with Abel's earlier researches, v. Fürth¹⁰ succeeded in isolating from the glands in an impure state an active principle which he called "suprarenin." In 1901, four years after Abel's first report, Takamine,¹¹ separated an active principle from the glands which he called "adrenalin." In the same year, Aldrich,¹² a former associate of Abel, independently produced an active principle, said to be much purer than Takamine's, which he also called "adrenalin." That Aldrich's product was purer than Takamine's is shown by a comparison of the formulas given by the respective authors. Takamine originally stated that the formula for his adrenalin was $C_{10}H_{15}O_3N$, while Aldrich (from the analysis of his own product) assigned the formula $C_9H_{13}O_3N$. Aldrich's formula has since been confirmed by many independent investigators, while no one has ever been able to substantiate the formula originally claimed by Takamine. This fact alone demonstrates that Takamine can have no legitimate claim to be the first to isolate the active substance in a pure state.

It is evident that all these investigators were working with the same substance, in varying degrees of purity. In fact, with the exception of mentioning v. Fürth's name, this is the belief of Crawford,¹³ Abel's early associate. This opinion, however, was written by Crawford, a decade after his work with

4. Therap. Gaz., 1901, xxv, 222.

5. Vulpian: Compt. rend., 1856, xliii, 663.

6. Oliver and Schäfer: Jour. Phys., Proc. Phys. Soc. p. i., 1894, xvi; Proc. Phys. Soc. p. i., 1894, xvii; 1895, xviii, 230.

7. Abel and Crawford: Johns Hopkins Hosp. Bull., 1897, viii, 151.

8. Abel: Ztschr. f. phys. Chem., 1899, xxviii, 320-1.

9. Hunt: Proc. Am. Physiol. Soc. in Am. Jour. Physiol., 1901, v, 6.

10. v. Fürth: Ztschr. f. phys. Chem., 1898, xxiv, 142; 1898-9, xxvi, 15.

11. Takamine: Am. Jour. Pharm., 1901, lxxiii, 523.

12. Aldrich: Am. Jour. Physiol., 1901, v, 457. The work of Aldrich was published in the same year, but after that of Takamine. He used the name adrenalin also. The statement that Aldrich's product was purer comes from Crawford, now Professor of Pharmacology in Leland Stanford Junior University, California, formerly with Parke, Davis & Co. This statement was published by Crawford in the Bulletin of the Bureau of Plant Industry, No. 112, 1907, p. 16.

13. Crawford: U. S. Dept. of Agric., Bur. Plant, Ind., Bull., 1907, cxii, 10.

3. There is on the market a synthetic product called L-suprarenin synthetic bitartrate. See THE JOURNAL A. M. A., Jan. 14, 1910, p. 120. Also N. N. R., 1911, p. 82.

Abel. Jowett, in England, several years earlier had come to the same conclusion.¹⁴ He says: "‘Epinephrin,’ ‘suprarenin’ and ‘adrenalin’ refer to the same substance." Concerning the proper name for the active substance of the suprarenals, this chemist says: "As this author (Abel) was the first to isolate the substance, although in an impure condition, it would seem that the name originally assigned by Abel, to the active principle, should be the one adopted."

A review of the facts as briefly stated above shows that Abel's reports as well of those of v. Fürth were published in 1897-99, long before Takamine's announcement of the isolation of "adrenalin." To Abel, then, more than to any other, belongs the credit of having paved the way for the perfection of epinephrin. As we stated before, therefore, the name which he selected for the substance is the scientific one, the only proper one, if for no other reason than on account of the priority of his systematic researches. We contend, therefore, that "epinephrin" is the most correct generic name for the suprarenal principle and that the Council on Pharmacy and Chemistry did well in selecting this term.

SOME OPINIONS

To ascertain whether authors in speaking of "adrenalin," always mean the Parke Davis preparation, or whether they generally intend a wide application, we entered into correspondence with those who mentioned the word "adrenalin" in their articles, and we quote from some of the replies (italics ours):

Dr. Edward B. Bigelow, Worcester, Mass., says:

Personally, I do not intend to use trade names or write prescriptions for proprietary preparations, although, occasionally, I must admit that I do the latter. *As a matter of fact, through ignorance, I used the word "adrenalin," considering it to be the general term for the preparation and not knowing, until you called my attention to it, that epinephrin is that term. On looking the matter up, the preparation really used by me was "supracapsulin." I shall be pleased to substitute the word "epinephrin" where I used the word "adrenalin."*

Dr. E. Fletcher Ingals, Chicago, in discussing a paper in the Section on Laryngology and Otology last June, spoke of using adrenalin. In reply to our letter he says:

I used the term in a general way, for I seldom use adrenalin as it is too irritating in consequence of chloretone, but use suprarenalin. . . . Your plan is absolutely right and I hope the profession will see it in this way. I shall probably continue to use Armour's preparation, suprarenalin, as I like it best, but we will call it epinephrin.

Dr. Rudolph Matas, New Orleans, says:

In using the term "adrenalin" I was familiar with the fact that there are several preparations of the same kind under different proprietary names: but, remembering the early work of P. D. & Co. in developing adrenalin among other cruder products of the suprarenal gland, I have clung to them faithfully up to the present time. However, in applying the term "adrenalin," as I have done, especially in our work on local anesthesia, *it was not my intention to specify any particular "makes" of suprarenal product in preference to any other, but I meant to use it in a generic sense without meaning particularly P. D. & Co. in preference to Mulford, Armour & Co., Stearns, etc. I did not have in mind the trade name, but a generic name that applied to the product of the adrenal, which we all recognize as the same thing under various trade names. I see clearly the point you make and believe it is well taken. I am fully in accord with the purpose and the principle upheld by the Council on Pharmacy in doing away with trade names, if possible, but those of us who have been in the habit for years of designating certain things by certain names which are familiar to us find it difficult to break into a new practice.*

Dr. John O. Roe, Rochester, N. Y., replied:

As stated in my article, *it was adrenalin I used in the cases I reported.* I have no objection to the use of the general or generic term covering all the different preparations of this agent, although I stated that I used adrenalin for the reason that I have found it the most active and the most reliable of all these preparations.

Dr. Leo Loeb, St. Louis, says:

I have no objection to the change you propose in my paper. *I am glad to use the term "epinephrin" instead of "adrenalin."* I am in hearty sympathy with the work done by the Council on Pharmacy and Chemistry.

Dr. A. L. Scharber, Nashville, Tenn., says:

I did not intend to use any trade name; I only used it in a general way. I thought at the time that I had applied the name as it should be. Now, if I had known in time, I should have substituted the word "epinephrin" for "adrenalin."

Dr. Theodore C. Janeway, New York, writes:

I am heartily in sympathy with your desire to eliminate trade names. *In this case it was P. D. & Co.'s preparation.* . . . It seems to me unfortunate that adrenalin, which is used fairly generally in the German literature, should not have the same non-specific signification here, but suppose we cannot help that. Epinephrin always seemed to me a much clumsier name than adrenalin. However, I suppose P. D. & Co. have made it impossible to use the latter.

As stated by Dr. Janeway, "adrenalin" is used as a general term in a general sense in Germany, and in fact all over Europe, as it is in this country, and for the same reason. Thus, to quote only recent literature, Ascher and Flack (*Ztschr. f. Biol.*, 1910, Vol. 55) use the word "adrenalin" throughout their article, in the protocols and conclusions; but on page 115 they state that they actually employed the preparation "hæmostasin." Hirayama (*Ztschr. f. exper. Path. u. Ther.*, 1911, Vol. 8, p. 651) speaks of "adrenalin experiments," but actually used "suprarenin Hoechst" in all cases. This illustrates the generic use of the term. But while the substance is on the market in Europe under a greater variety of names than it is in this country, adrenalin has the same narrow, limited meaning as it does here. Parke, Davis & Co. emphasize this even in their advertisements. In a full page advertisement in the London *Lancet* recently the British profession is advised that "there is only one adrenalin. . . . Parke, Davis & Co. introduced adrenalin into medicine. This principle was isolated in 1900 by Dr. Takamine, a member of their scientific staff, and the sole right of manufacture by his process is vested in them." German physicians are laboring under the same difficulty as physicians in this country would be laboring under were it not for the Council on Pharmacy and Chemistry.

We believe that the patent on adrenalin will expire in five or six years. Then not only the method of manufacturing it but the product itself will be free. But Parke, Davis & Co. will still control the name "adrenalin," and every time the physician prescribes under this term the druggist must use Parke, Davis & Company's preparation.

In scientific literature, however, or whenever the observations or conclusions are not restricted to the Parke, Davis & Co. product, the name "epinephrin" is not only justified, but commendable. The very condition of scientific progress is freedom. The interest of the public and of science demands that this freedom should be maintained. We doubt greatly whether many scientists of established reputation will subscribe to the insinuation in the protest quoted above, that the cause of science is best advanced by restricting its liberty, in order to put a premium on the "originality, enterprise and research work of commercial houses."

Such an attitude would certainly be contrary to the best traditions of medical science. Modern conditions may have necessitated some changes in the traditional practice—but not to the extent that thinking men will agree with the accusation that those who prefer a free name to a "protected" name, are guilty of sophistication and of debauching the ethics of the profession.

PARKE, DAVIS & CO.'S "REPLY" TO THE ABOVE WITH OUR COMMENTS

With a desire to be absolutely fair and to avoid any possible misstatements of facts, a proof of the above was submitted to Parke, Davis & Co. This firm has made a rather lengthy "reply," which ignores the main point—the absolute necessity, in the interest of science, of a practical, generic name—but deals expansively with side issues, especially in extolling their own product. The reply absolutely ignores the point at issue. As will be noticed by those who read the "reply" through consecutively, it contains many reiterations. A slight rearrangement of the paragraphs has been made, therefore, in order that we may comment in one place on related matters. As the paragraphs are numbered, it will be

14. Jowett: Jour. Chem. Soc., 1904, lxxxv, 192.

easy for those who desire to do so to read Parke, Davis & Co's "reply" in the order in which it was sent in by them. Omitting the first paragraph, we have arranged the text of the reply under four heads. Their "reply" begins as follows:

To the Editor:—On the following points in the article which you send us, "Proprietary versus Unprotected Names," you take a position which is utterly untenable:

1. Not a single grain of the active principle of the suprarenal gland was on the market, in pure state or in solution, until Parke, Davis & Co. first offered the pure adrenalin and the solution adrenalin chlorid to the medical profession and the drug trade. That we were the first to offer these products for sale has never been disputed.

Comment:—Technically this is true. Nevertheless, under the name "epinephrin," an active principle of the suprarenal gland, as prepared by Abel, was in the hands of clinicians, in the form of a salt and in solution, and was being made the subject of experiment and report to medical societies nearly two years before Parke, Davis & Co. offered it for sale.

I. VARIATIONS IN COMMERCIAL BRAND

2. If you will turn to Bulletin 61 of the Bureau of Public Health and Marine-Hospital Service at Washington, you will find on page 25 a summary of an investigation of six preparations on the market purporting to contain the active principle of the suprarenal gland. In point of activity four of them range from 3.7 to 66.6 per cent. of the normal standard. Only two are pronounced satisfactory (100 per cent.). If you purpose to encourage the use of the generic name for the six preparations, and if a physician prescribe epinephrin, which of the six products would you have dispensed on his prescription—the active, the standardized or the virtually inert? Would you leave the decision wholly to the dispenser? Would you give the physician any voice in the selection of the product that he can trust? And if in your dislike of "trade names" you persist in closing your columns to them and in substituting epinephrin therefore, will you, in justice to the physician and in justice to the particular product which may have been used by your contributor, take the trouble to insert "epinephrin (Jones)," or "epinephrin (Smith)," or "epinephrin (Parke, Davis & Co.)?"

Comment:—This matter has been dealt with (page 911, col. 1, par. 5), in part, as follows: "It is understood, of course, that the preparations on the market are not necessarily identical, since the drug is in solution, and these solutions vary according to the preservative and the solvent used. On this account some physicians will find it more satisfactory to use this or that firm's product, in which case they would, of course, indicate it either by appending the firm's name after the common term 'epinephrin' or by using the firm's trade name."

The introduction of a generic term does not prevent any physician from using the word 'adrenalin' or the proprietary name of any other product. If a physician believes a certain brand to be superior, or if he wishes to contribute royalty to the enterprise of the manufacturer, then he is justified in using the proprietary term.

We have no complaint against the use of a trade name when the prescriber, author or abstracter intentionally restricts his remarks to that one particular preparation, as in the comparative investigations quoted in the reply. But as we have pointed out, practically all authors intend to use a generic name, and think that they are doing this.

3. Allow us to remind you of your own words in THE JOURNAL of the American Medical Association, Feb. 26, 1910, page 710:

"Schultz has just published the results of a careful examination of samples of the suprarenal preparations on the American market, which illustrated once more the need of more care in the methods of preparing and keeping this important drug. Of the six different products only two were of the strength claimed; the others vary from 3.7 to 66.6 per cent. of this strength. . . . Hunt in 1906 showed that some of the preparations labeled 1:1,000 had only one-fifth of the activity of others bearing the same label. Sollmann and Brown of Cleveland, Ohio, showed the activity of eight commercial preparations to differ greatly. . . . The fact remains, however, that inferior preparations are on the market and are probably passing into the hands of physicians daily. . . . There are reasons for believing, however, that some of the firms preparing this and some other drugs requiring physiologic standardization are not properly equipped for the work."

If, now, the physician prescribes simply "epinephrin," what ground has he for complaint if a solution containing 3.7 per cent. of proper normal potency is dispensed?

5. Those manufacturers who are making substitutes for adrenalin will rejoice to know that an influential medical journal is supporting their attempts to destroy in the minds of physicians the distinction between their products and the original. No wonder that one or more of them have been willing to accept your suggestion

and attach the word "epinephrin" to their labels! Why should they forego your help in rectifying their past failures to give standing to their imitations and substitutes?

Comment:—We are not aware that there is any "distinction," other than the variability which may exist between any two commercial brands of the same substance. This variation is unfortunate, and should be speedily abolished by the standardization of *all* the brands—a work which the Council on Pharmacy and Chemistry is trying to accomplish. Instead of this, Parke, Davis & Co. propose to meet the conditions by creating and perpetuating a monopoly.

To realize the absurdity of this, we need only consider a few analogous examples: Common table salt is not absolutely pure. Let us suppose that a commercial firm markets a pure sodium chlorid under a protected trade name. Must scientists henceforth drop the scientific name of "sodium chlorid" or the public the common name "salt," because uniformity would be promoted thereby? Again: Digitalis preparations vary notoriously. Let us suppose that Smith, Jones & Co. invent a more uniform preparation and incidentally also invent a new name. Should the name "digitalis" now be dropped from the literature, because it refers to variable products? Or again, let us now suppose that we now accomplish the impossible and accept "adrenalin" as the generic name; must we change this every time that some one finds a better way of making a somewhat purer product, or a more stable solution? Parke, Davis & Co. bring another argument along the same line:

7. Your own laboratory (THE JOURNAL A. M. A., Oct. 31, 1908, pp. 1524-25), has borne witness that of four samples (of preparations purporting to be solutions of the active principle of the suprarenal gland) only one did not contain sodium sulphite or a similar bleaching agent—an agent which is generally conceded to have no real preservative effect, and only serves to deceive the physician by masking the tell-tale evidence of decomposition. We do not ask you to publish the name of the manufacturer of the lone sample: we can guess for ourselves.

Comment:—We do not know at all that "it is generally conceded" that the sulphite has no real preservative action and is therefore a fraud; or that the infinitesimal dose used is at all harmful; or that it is in any way inferior to the preservative used in "adrenalin solution." In the absence of any evidence in this direction, the Council had to be content with a statement of the nature of the preservative; but if good evidence is adduced, the Council will doubtlessly apply it.

II. EXPENSE OF DISCOVERY

Parke, Davis & Co. lay great stress on the matter of the expense of discovery in the following paragraphs:

4. The relative merits of Takamine and Aldrich, on which you dwell, have no bearing on the case. Both were in our employ during and before their work on the suprarenal gland. Aldrich entered our service July 10, 1898, and devoted more than two years to this work. Takamine had the good fortune to reach the coveted goal first. With either or both, Parke, Davis & Co. share the credit, for obvious reasons.

6. Much is said of the selfish motives and the pecuniary rewards of the manufacturer, little or nothing about his outlay, his financial hazard, his losses. Few remedies of real value are brought forth in this era save by highly trained and well-paid men working in costly laboratories. The world hears of the success, applauds the discoverer (perhaps), and utilizes the remedy. No one thinks it worth while to ascertain the costly failures, for the failures cost as much as the successes, and the returns from one success must necessarily offset the losses of a half dozen failures.

Comment:—Just when, where and how long Drs. Takamine and Aldrich were in the employ of Parke, Davis & Co.; what were their salaries and other conditions of their employment; what proportion of their time was devoted to investigations of the suprarenal problem; what other use may have been made of them—or in fact, what were the expenses of Parke, Davis & Co. in discovering adrenalin, and the probably vastly larger expenses of advertising it, what is the present rate of profit, etc.—all these are questions which may have an interest of their own; but we fail to see what practical bearing they have on the question whether we need a generic name for the numerous commercial brands of an identical substance; or even on the choice of name, since the Parke, Davis & Co. name is protected, and therefore not available as a generic name.

In passing, however, it may be remarked that so far as the mere question of expense is concerned, Takamine and Aldrich, and through them Parke, Davis & Co., certainly profited somewhat by the work of the preceding and contemporaneous workers in the same field; but we have still to learn that they have made any efforts to reimburse these "outsiders" for their share of the expense. In the aggregate, this was doubtless much greater than that of Parke, Davis & Co. The independent workers were not looking to financial encouragement; they were looking to the benefit of mankind; they are entitled to that benefit, and presumably would not accept any other. Parke, Davis & Co., however, would take this benefit from them, capitalize it, and convert it into dividends. These independent investigators doubtless believed, as we have said, that they were working for the benefit of humanity; it appears, however, that they were, in fact, working for the exclusive benefit of Parke, Davis & Co. This is one of the unfair phases of commercialized research.

III. PRIORITY OF DISCOVERY

As we have repeatedly pointed out, the "priority of discovery" has no practical bearing on the need, or in this case even on the choice, of a generic name; for a generic name, by its very definition, cannot be monopolized, and "epinephrin" is the only current name for the substance which has not been monopolized. It was not even proposed for any specific product, for Abel said: "I therefore name the blood-pressure-raising substance (of the suprarenal gland) 'epinephrin,' in accordance with Hyrtl's nomenclature" (*Hoppe-Seyler's Ztschr.*, 1899, xxviii, p. 321).

However, since Parke, Davis & Co., in their first letter, claimed to have "enriched the practice of medicine with the most remarkable agent," etc., we felt it our duty to point out that such a claim deprives Dr. Takamine's predecessors of the large part of the credit which is fairly theirs. The "enrichment" really dates from the discovery, by Oliver and Schäfer, of the vasoconstrictor action of the gland, which led to its therapeutic use. Had it not been for this demonstration of the therapeutic potentialities of the gland, Parke, Davis & Co. would probably not have dreamed of financing its investigation. For this then they deserve no credit. The next step was the demonstration that this action resides in a definite chemical substance; and this substance, in the form of a benzoyl derivative, was first isolated by Abel—also without the aid of Parke, Davis & Co. Had it not been for the demonstration of the basic character of this substance, Dr. Takamine might still be floundering in the dark for a process of isolation.

The next step was the isolation of the natural base, and the credit for this, we say without hesitation, belongs to Takamine, Aldrich and Parke, Davis & Co. This was followed by the determination of the structural formula; and finally by the synthesis of the substance. In the last, Parke, Davis & Co. again had no share. In such a chain of discoveries, is it right for anyone to claim exclusive credit; to imply that he alone has enriched the profession? Is it possible even to say who should have the major share? We do not believe so, and we shall not attempt it. We concede a fair share to Parke, Davis & Co., namely, the final isolation of the natural base. We do not blame them for speaking warmly on this point, nor even for some partiality to their own merits; and therefore we shall comment only on such of their statements as are distinctly unfair to other investigators, hence, subdivisions a to f, inclusive, of paragraph 8 are not commented on, while subdivisions i, j and k are discussed separately.

8. (a) You do us and our employees an injustice in the language which implies that Professor Abel was mainly responsible for the discovery and preparation of the pure, active principle of the suprarenal gland. Abel was not the first to learn that this gland contained some substance giving a peculiar chemical (color) reaction. This was demonstrated by Vulpian (*Compt. rend. Acad. d. Sc., Paris*, 1856, xliii, 663-665) in 1856 and confirmed by Virchow (*Virchow's Arch. f. path. Anat.*, 1857, xii, 481) in 1857. He was not the first to believe that these glands contained some active principle, because Vulpian and Cloez (*Compt. rend. Acad. d. Sc., Paris*, 1857, xlv, 340) in 1857, and Arnold (*Virchow's Arch. f. path. Anat.*, 1866, xxxv, 64) in 1866, and Holm (*Jour. Pract. Chem.*, 1867, c, 150) in 1867, had arrived at the same conclusion, as is shown by their attempts to isolate such an active principle.

(b) He was not the first to demonstrate that these glands contained a substance of undoubted chemical similarity to another well-known substance, for Krukenberg (*Virchow's Arch. f. path.*

Anat., 1885, ci, 542) in 1885 called attention to the similarity between the color reactions of the extract of this gland and those of pyrocatechol. Also, Brunner (*Schweiz. Wchnschr. f. Pharmakol.*, 1892, xxx, 121) in 1892 confirmed Krukenberg's conclusions in reference to the similarity between the color reaction of some substances in the glands and those of pyrocatechol.

(c) Abel did not first demonstrate that these glands contained a substance of marked physiologic activity, for Oliver and Schäfer (*Jour. Physiol.*, 1894, xvi, 1; 1895, xviii, 230) in 1894 made the important discovery that the extract from the suprarenal glands produced a rising blood-pressure when injected intravenously. Moreover, Moore (*Proc. Physiol. Soc., London*, xiv; *Jour. Physiol.*, 1895, xvii) in 1895 discovered that the reducing property in such an extract went hand in hand with the ability to increase the blood-pressure, and he also concluded that the physiologically active body must be identical with the reducing body which gives a green color reaction with the iron salts.

(d) In 1896 Fränkel (*Wien. med. Bl.*, 1896, xix, 207, 228, 246) purified the extract of the glands until he had obtained a syrup-like body, and he, like Abel, with equal reason, considered this to be a pure substance. He called it "sphygmogenin," but no evidence was offered to demonstrate its purity or identity. In the light of our present knowledge we, of course, know that it was not the active substance, though it undoubtedly contained some of the active substances.

(e) Mühlmann (*Deutsch. med. Wchnschr.*, 1896, xxii, 409) in 1896 made a chemical investigation and arrived at the conclusion that the active principle was pyrocatechol. This, of course, we now know to be untrue also.

(f) Moore (*Jour. Physiol.*, 1897, xxi, 383) in 1897 argued that Fränkel was wrong in assuming the active principle to be a derivative of pyrocatechol, and argued that it was a derivative of pyridine. The error of this conclusion has also been demonstrated; nevertheless, Moore's work was important, very interesting and creditable.

(g) Abel and Crawford (*Bull. Johns Hopkins Hosp.*, 1897, viii, 151) in 1897 published results which showed that they had been carrying on a very interesting series of chemical researches on the active principle, but a careful perusal of the papers published at this time, and also in 1898 and 1899, and, in fact, a perusal of all the papers which have emanated from Professor Abel, has demonstrated that he never did succeed in isolating the active substance in pure form, but that what he did obtain and what he did regard as the active principle and the substance to which he has given the name of epinephrin, was really a compound which was not the active principle itself, but which contained more or less of the active principle, and which consequently displayed some of the peculiar physiologic activity of this substance. Aside from the greater complication of the work, and perhaps the more highly scientific methods used, he really accomplished little more than did Fränkel in 1896, or perhaps Oliver, Schäfer and Moore, who made an extract from the glands and proved it was possessed of peculiar chemical and physiologic activity. More than this, the work which he did and the results which he published were not finally used by Drs. Takamine, Aldrich, von Fürth or Pauly as the basis of a method for the extraction and purification of the active principle. Without the independent labors and discoveries of these other men or others equally as able and fortunate, it is quite possible that the active principle of the suprarenal glands in a pure and concentrated condition would not be available to the medical profession to-day.

(h) If Abel has ever succeeded in extracting the pure active principle, even up to the present day, without taking advantage of the information developed by Takamine and others, we have seen no evidence of it in the scientific journals. There is no doubt that Abel was convinced that these glands contained some substance possessing high physiologic potency; in fact, he could not have avoided such a conclusion from the information furnished by others, and one might perhaps say with all justice that he assigned the name epinephrin to the substance which he imagined was present in the glands, but his conclusions as to the constitution of this substance, and the methods which he developed for its extraction and purification, have been overthrown by others and are not accepted to-day by his scientific colleagues.

Subdivisions i, j and k are commented on below.

(i) No less than four formulas for the active principle of the suprarenal glands have been proposed by Abel from time to time. Even if we agree to adopt the last of these, one cannot avoid the fact that this has been proved beyond any doubt to be an incorrect formula for the active principle. It would certainly do violence to scientific usage, and be a distortion of the truth, therefore, to apply this name "epinephrin" to a substance now known as "adrenalin," which has a different chemical constitution.

Comment:—In justice to Abel, it should be said that he conceded that he had not isolated the natural base, but its benzoyl salts. These, however, he evidently had in a practically pure form—as pure as Takamine's original products. In evidence, we need only quote Aldrich, and therefore Parke, Davis & Co. themselves: "It is interesting to note in this connection that if we subtract a benzoyl residue from Abel's formula for epinephrin— $C_{17}H_{15}NO_4$ —we obtain a formula— $C_{10}H_{10}NO_3$ —which is not very far removed from that of adrenalin— $C_9H_{13}NO_3$ —a difference that can be readily explained if we suppose either of these bodies to be contaminated with other bodies." (*Am. Jour. Physiol.*, v, p. 461). As to the matter

of formulas, it must be remembered that the time when Abel worked on the problem, the subject was scarcely ripe for final judgment. Every chemist understands that the earlier formulas are more or less provisional. A criticism on this score is scarcely fair, least so from the champions of Dr. Takamine; for the formula of Takamine has shared the same fate as Abel's. In fairness, it should also be stated that the four formulas which excite the derision of Parke, Davis & Co., were not all for one and the same thing.

Parke, Davis & Co. then quote the opinions of several investigators:

(i) Professor Pauly (*Ber. d. deutsch. chem. Gesellsch.*, 1903, xxxvi, 2944), a man of world-wide reputation, writing from the laboratory of the University of Bonn, says:

"The credit of first precipitating and isolating from the suprarenal gland of the therein contained blood-pressure-raising principle as a chemical individual belongs to Takamine. It has the name 'adrenalin,' given to it by its discoverer, which name, among the many trivial names given to it, possesses the best scientific claim."

(j) Professor von Fürth (*A. d. Sitzungsber. d. k. Akad. d. Wissensch. in Wien. Mathem.-Naturw. Klasse*, 1903, cxii, 3) says in this connection:

"Abel and his pupils employ the name of epinephrin to designate the active principle as contained originally in the gland, instead of adrenalin or suprarenin. As the substance described and analyzed by Abel under the name epinephrin is certainly different from the original body in the adrenal glands, I shall avoid using the same, since it necessarily leads to a misunderstanding."

(k) In a second paper Pauly (*Ber. d. deutsch. chem. Gesellsch.*, 1904, xxxvii, 1388) emphatically rejects Abel's empirical formula, $C_{10}H_{13}NO_3 \cdot \frac{1}{2}H_2O$, and remarks:

"This formula, together with the name 'epinephrin hydrate,' which designates the same, should be blotted out of the literature. The name 'epinephrin,' however, should remain now as before for the basic substance obtained by treating adrenalin with concentrated H_2SO_4 , or with dilute acids under pressure, and to this the formula $C_{10}H_{13}NO_3$ should be given. This body, whose chemical composition is different from adrenalin, and whose physical, chemical and pharmacologic properties are different from the real blood-pressure-raising substance, should be considered a transformation product of the active principle."

Pauly adds that Jowett is mistaken in giving Abel and Crawford credit for the priority in first isolating the active principle:

"Thus there can be no doubt that not Abel and Crawford, but Takamine first obtained the active substance. If Abel adheres to the statement referred to in the beginning, that his formula $C_{10}H_{13}NO_3 \cdot \frac{1}{2}H_2O$ finds confirmation in the analyses of salts and derivatives, it must be answered that this is not the case; that he, outside of one impure benzoyl product, has not prepared, not to say analyzed, up to the present time, either a salt or derivative of adrenalin, in which the nucleus of the last is still intact."

Comment:—These are altogether matters of opinion or point of view, and to appraise them, it should be understood that Pauly, at the time when he wrote them, was engaged in a somewhat sharp controversy with Abel, as might be gathered from the expressions quoted. His views, therefore, would be apt to lack perspective, in fact, they would tend to be somewhat biased. Incidentally, Pauly is not a professor but a privat docent at the University of Würzburg and can hardly be said to be a "man of world-wide reputation as a chemist." As to von Fürth's statement, there can no longer be any fear of a "misunderstanding."

Parke, Davis & Co. proceed:

(m) Abel's epinephrin possessed little if any blood-pressure-raising action (von Fürth: *Ztschr. f. physiol. Chem.*, 1900, xxix, 122). Abel never succeeded in producing the crystallized base until he learned how from Takamine. The one point on which Abel (*Bull. Johns Hopkins Hosp.*, March, 1901, xii, 80) at first agreed with von Fürth (most erroneously, as it proved) was that "the active principle in its native state is not precipitated by ammonia." Not only was this single point of agreement exploded by Dr. Takamine's discovery, but singularly enough Abel's statement of the error was made in the same article of May, 1903, in which he acknowledged receipt of the Takamine crystalline base, of which he then did not know the process of making. In other words, Abel never succeeded in producing the crystalline preparation of the blood-pressure-raising principle until Takamine taught him how by a method which he and von Fürth had pronounced impossible! Abel remarks later (*Ber. d. deutsch. chem. Gesellsch.*, 1903, xxxvi, 1839): "The important observation that the substance can be precipitated in crystalline form from concentrated gland extracts by the aid of ammonia and other alkalies we owe to Takamine." Nothing could be more explicit.

Comment:—As to the ammonia-precipitation, the fact that Takamine succeeded where Abel and von Fürth had failed, proves that Abel was wrong in this particular, as he concedes

in the quotation. Abel fell into this error because his gland solutions were too weak; he had, however, discovered the ammonia-precipitation in the case of his isolated substance, and the basic nature of the latter long before a report of Takamine's work was published. (*Hoppe-Seyler's Ztschr.*, 1899, xxviii, 324.)

The statement that "Abel's epinephrin never possessed any blood-pressure-raising action," is a wholly inexcusable misrepresentation, to put it mildly. Abel stated that his free base soon lost its activity, but the salts, especially the picrate and bisulphate, were highly active, and in the dry state retained their activity. These active salts, as epinephrin bisulphate, were always prepared by transposition from a picrate and not from the free epinephrin which became inactive presumably by oxidation during the precipitation. The curves in the paper of Abel and Crawford (*Johns Hopkins Hospital Bull.*, 1897, viii, 151) were absolutely convincing. In the paper in *Hoppe-Seyler's Zeitschrift*, xxv, Abel found that 0.02 mg. of the salt per kilo of animal gave a distinct rise; and that larger doses raised the pressure by 88 mm. On p. 349, he also describes the blanching effect on the conjunctiva. The writer of the "reply" is evidently familiar with these papers and his misstatement of the case must, therefore, be intentional, especially since he admits in a former paragraph (g), that Abel's epinephrin "displayed some of the peculiar physiologic activity of this substance" (the active principle). Nor does this writer anywhere intimate that Abel has replied in detail to von Fürth's contention that epinephrin and suprarenin (the name adopted by von Fürth for the active principles of the suprarenal gland, now a "trade" name) are fundamentally different substances. (See Abel, *Johns Hopkins Hospital Bulletin*, March, 1901, and *American Journal of Pharmacy*, July, 1903.)

IV. SUMMARY

Parke, Davis & Co., conclude their reply as follows:

(n) Far be it from us to pretend that our research workers were not greatly indebted to other pioneer students of the suprarenal gland, or to deny that the work of a number of earnest investigators had paved the way for Takamine's crowning achievement. Nearly every great invention or advance in every art is thus made possible. Pasteur made Lister possible. Is this any disparagement of Lister? Because there was a prior record of research, are we to be robbed of the credit which is justly due us for being the first, through our employees, to separate the active principle in its pure state, to determine its constitution, to evolve a practical method of production on a commercial scale, to confer a remarkable boon on suffering humanity? Is the inventor of a therapeutic agent to be discriminated against? Has society a greater stake in an improved broom-handle than in a valuable drug? Nay, of all inventions, should not the author of a new remedy be singled out for the richest rewards that society can confer? Will Professor Ehrlich be any the less a great benefactor of his race if he reserves for himself or for his institute in Frankfurt a large royalty on his wonderful salvarsan? If we have done nothing for medicine and humanity in this matter of adrenalin, your argument is sound. If we have done much, your position is pitiful and wrong. And, worst of all, the very men whom you profess to serve—the medical practitioners of the country—will be the first to suffer. The more you encourage the use of the blanket name "epinephrin," the more you put the physician at the mercy of "thirty or forty" different manufacturers whose products range in value from the worthless to the best.

PARKE, DAVIS & Co., Detroit.
By E. G. SWIFT, General Manager.

Comment:—We commend the spirit of the first sentence. For the rest, we need only restate the principle at issue, which Parke, Davis & Co. have seen fit to ignore entirely in their reply: When the same substance is actually marketed and used under several distinctive trade-names, it becomes necessary to use a generic name when speaking of properties of the substance which are common to all "brands." This is the intent of most scientific and medical writers on the suprarenal base, and when the word "adrenalin" is used by medical writers, it is generally meant in the generic, and not in the distinctive sense. Since the name "adrenalin" is protected, it should not, and properly cannot, be used in this way. The name "epinephrin," since it is not monopolized, is not only the best, but also the sole name which can be rightly applied to the suprarenal base, in the generic sense.

Correspondence

Rheumatism, Specialism and Independent Journalism

To the Editor:—I saw a very timely letter in THE JOURNAL, March 11, 1911, inquiring why reputable physicians and surgeons will contribute articles to medical journals which admit a very undesirable class of nostrums and proprietaries to their advertising. As I frequently contribute to several independent journals, some of whose advertisements I do not approve of at all, I will say that I do it in order to reach the large number of broad, progressive, and liberal and non-sectarian medical men who read these journals and keep watch for everything new or good that appears in their columns. I do not use nostrums or proprietaries, never have used any and always speak out against them whenever I have an opportunity, but I must have a fair field and a free parliament which no man could have in contributing for journals like THE JOURNAL A. M. A.

I am a specialist in the treatment of rheumatism and diseases of the stomach and liver and diseases of children, and have been grandly successful, more so than I ever dreamed possible when I started in the practice of medicine. I like to spread the light, and tell other doctors what I have done and what they can do by using the same means, but you would not think for a moment of admitting one of my articles to the columns of THE JOURNAL A. M. A., for I often carry a case of rheumatic fever to a very quick and successful termination with such remedies as bryonia, iris, rhus tox., pulsatilla, gelsemium, colchicin, veratrum, aconite, apocynum and guaiacum.

I demand that any journal that I write for shall be broad and liberal and non-sectarian enough to publish articles recommending any ethical remedy that I have proved to be of positive curative value. We need a much higher standard of medical ethics. They are absolutely disregarded by most medical men now. A poor sick doctor in South Carolina writes to me in asking advice for his desperate case of rheumatism, "I have paid out everything but my home to the M.D.'s for treatment and am not cured." What kind of ethics would allow a man to take the last dollar from a suffering brother physician?

W. M. GREGORY, Berea, Ohio.

The Niemeyer Pill

To the Editor:—The "Niemeyer Pill," concerning which there has recently been an interesting correspondence in THE JOURNAL [January 21, p. 211 and February 11, p. 443], is commonly known in England as Addison's pill. That it was used long before Niemeyer's time is proved by its inclusion in the first edition of the Pharmacopeia of Guy's Hospital, published in 1837, when Bright was one of the full physicians and Addison the only assistant at the hospital. The pill was then called pilula scillae cum hydrargyro and its composition is as follows:

R Hydrargyri oxid. gr. xx.
Pilularum scillae compositarum dr. iv.
Misce, et divide in pilulas lx.
Dosis, i, ii, vel iii, semel, bis, saepiusve quotidie.

The following is the formula of the pilula scillae composita:

E singulis drachmis scillae formetur pilulae xii.
Dosis, i, ii, vel iii, bis, ter, quaterve quotidie.
Singulis pilulis interdum adde.
Digitalis foliorum contritorum gr. ss.

ARTHUR F. HERTZ, London, Eng.

Anterior Poliomyelitis: The Proper Method of Diagnosis

To the Editor:—In a letter to the *New York Medical Journal*, published several years ago, I made the suggestion, from analogy, that the first tonsil (Luschka's) was probably the site of infection in poliomyelitis. Dr. Bryant's recent article has confirmed this probability.

In a recent number of THE JOURNAL, Dr. Flexner reports that he and his collaborators have suggested that the nasopharynx acts in human beings as the portal of entry of the

virus into the central nervous system, as well as the source of its dissemination to other human beings. He also calls attention to the work of Osgood and Lucas showing that the virus can survive in the nasopharynx of the monkey for nearly six months. . . The importance of securing methods of early and certain diagnosis of anterior poliomyelitis, says Flexner, is self-evident. By taking advantage of the changes which regularly occur in the cerebrospinal fluid it is possible, early in the course of the infection, to arrive at a certain diagnosis.

As it would be comparatively easy both to diagnose and to treat this disease by going at once to the place which is now known to be the site of infection in this and in all air-borne infections, I would suggest the following method: In a patient suspected of harboring the germs, sterilized cotton carriers should be inserted through the nose to the nasopharynx. These infected carriers with their bits of cotton are returned to the tubes and later used to infect either monkeys or guinea-pigs. This procedure of passing the cotton into the nasopharynx suggests the proper method of sterilizing this space, namely by wetting the cotton in hydrogen peroxid.

EDMUND D. SPEAR, M.D., Boston.

The Secret Commission Evil

To the Editor:—I read in THE JOURNAL, March 11, Dr. Lord's article on "The Secret Commission Evil."

I have been making furrows in these muddy country roads for seven winters and have driven through the dust for seven summers. On my rounds I have seen and studied many cases. On one occasion I was sent to consult a big surgeon concerning a case which was causing a great deal of worry to the whole family. I saw the surgeon, and after our consultation, I was asked: "Where do you send your surgical cases?" I proudly answered, "I operate whenever I can get the consent of the patient, doctor." This surgeon did not take me along to dinner, although he had remarked previously that he was on his way, nor did he seem to enjoy my company thereafter.

On another occasion, an old classmate introduced me to some of his specialist friends. They also asked: "Where do you send your patients?" I answered: "My territory is pretty far away, doctor." Our visit was perceptibly less sociable afterward. What would the proposition have been if the answers had been more pleasing to the surgeon and the specialists?

I feel that I missed some good entertaining or perhaps "fee-splitting." Maybe these gentlemen needed finances more than patients. Where does "fee-splitting" start?

AUGUST BECHTOLD, M.D., New Athens, Ill.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF IMPACTED CERUMEN FROM EAR

To the Editor:—I have been interested in the query of Dr. Blackly, in THE JOURNAL, March 11, regarding removal of impacted cerumen from ear. Filling the ear at night with olive oil and following this by hot irrigation next morning with biborate of soda solution will remove the impaction very easily. The patient is advised to sleep with the affected ear uppermost. If the opposite ear is also in need of attention the same treatment may be used on the following night.

ERNEST BOSTON, M.D., Taylor, Texas.

ODOR FROM ASPARAGUS

To the Editor:—What is the peculiar odor noticed in urine after eating asparagus? Have any harmful effects been known as a result of eating this vegetable? I have a faint recollection of hearing a medical instructor caution against its use in kidney disease.

A. I. L.

ANSWER.—The odor in urine after eating asparagus is due to asparagin—a crystalline substance which exists in smaller quantities also in lettuce, potato, marshmallow and other vegetables and is said to have diuretic and sedative properties. The eating of asparagus is not generally thought to have harmful effects.

BACTERIOLOGY OF COLDS

To the Editor:—Please give me the facts known with regard to the bacteriology of "colds." Is the influenza bacillus usually responsible for ordinary colds or are other germs sometimes the cause? Also, does the infection spread along the mucous membrane from the first site or is the blood concerned in its propagation?
B. S. PENN, Humboldt, Tenn.

ANSWER.—The actually known facts regarding the relations of bacteria to "colds" are somewhat meager. It is believed by many authorities that the essential factor in a "cold" is congestion due to vasomotor changes, not necessarily connected with bacterial action, the association of bacteria with such changes being merely secondary. Other "colds" follow the direct action of irritants, prominent among which may be bacteria-laden dust. In other cases there is proliferation of bacteria already domiciled on the mucous membrane. The ordinarily latent microorganisms spring into renewed activity when the resisting power of the individual is diminished. A number of organisms have been found in the nasal secretions in "colds." Among these may be mentioned *Micrococcus catarrhalis*, streptococci, staphylococci, the pneumococcus, an unnamed diplococcus and the influenza bacillus. Some "colds" are evidently contagious, but their microbic cause has not been discovered. The influenza bacillus does not seem to be usually responsible for ordinary "colds." Even in epidemics, characterized by the symptoms of influenza, the influenza bacillus has not been demonstrated in all cases. So far as clinical observation goes, it would appear that the infection spreads by contiguity along the mucous membrane in most cases. An infection by way of the blood is possible, not probable.

CHINESE DO NOT PAY PHYSICIANS TO KEEP THEM WELL

To the Editor:—Ever since I was a boy I have met with occasional references in books and newspapers to the "Chinese custom of paying their physician when they are well and stopping payment when they are sick." Is there any truth in this statement? Has this been the custom in China, or is it merely a traveler's yarn or a utopian fancy?
C. U. S.

ANSWER.—Contracting to keep a patient in health is at least extremely rare in China. All authorities acquainted with China agree that the method is so seldom met with as practically not to exist. Were there such a custom the physician (though that is hardly the term to apply to the native malpractitioner) would promptly go out of business, for his clientele would speedily develop real and imaginary cause for reducing his income to zero. The misstatement is often seen in the literature, but must be classified with the fabrication that the Chinese eat rats, or that they did not wear long hair till compelled to do so by the Manchu conquerors.

TREATMENT OF ACIDOSIS

To the Editor:—Please give the most satisfactory treatment, both dietetic and medicinal, for acidosis.
I. W. C.

ANSWER.—Acidosis is due primarily to insufficient oxidation, and secondarily to an insufficient supply of carbohydrates, the organism being obliged in that case to break up proteins or fats to sustain life. The dietetic remedy, therefore, is a supply of carbohydrates sufficient to spare the fats which are regarded as the chief source of the acid. In diabetes this supply of carbohydrates should be sufficient to avoid the dangers of acidosis but not enough to increase to a dangerous extent the amount of sugar in the blood and urine. Medicinally it is theoretically correct to administer remedies which will increase oxidation. Alkalies are believed to have this power and are the chief remedies employed in the treatment of acidosis.

The Public Service

Medical Department, U. S. Army

Changes for the week ended March 18, 1911.

Lowe, Thomas S., M.R.C., ordered to proceed from Whipple Barracks, Ariz., to Fort Apache, Ariz., for temporary duty.
Jones, George B., M.R.C., left Fort Benjamin Harrison, Ind., with the 10th Infantry, en route to Fort Sam Houston, Texas.
Vose, William E., major, left Jackson Barracks, La., with 164th Co. Coast Artillery en route to Galveston, Texas.
Holmes, R. W., lieutenant, left Plattsburg Barracks, N. Y., with troops en route to Texas.
Whitecomb, C. C., and Crabtree, George H., majors, promoted to major, Medical Corps, to rank from Jan. 1, 1911.
Kelly, John P., M.R.C., ordered to Fort Hamilton, N. Y., for duty.
Marietta, Shelley U., M.R.C., resignation accepted by the President.
Walker, Thomas C.; Koyle, Fred T., and Eliot, Henry W., M.R.C., ordered to proceed to Newport News, Va., for assignment to duty on transports.
Daywalt, George W., M.R.C., is honorably discharged from the service of the United States, his services being no longer required.

Hoff, John Van R., colonel, ordered to proceed to Albany N. Y., to read a paper at the meeting of the Medical Society of the State of New York, on or about April 18 and 19, 1911, on the subject of "Experience of the Army with Vaccination as a Prophylactic Against Small-pox."

Hess, Louis T., major; Weed, Frank W., captain; Burket, John A., and Fisk, Owen C., lieuts., ordered to proceed to Galveston, Texas, and report for duty with the field hospital to be organized at that place.

Reynolds, F. P., major, in addition to his other duties will perform the duties of medical superintendent of the transport service at Newport News, Va.

O'Connor, C. H., major, ordered to proceed to San Antonio, Texas, and assume command of Ambulance Co. 38, to be assembled at that place.

Field, Peter C., major, granted leave of absence for two months, about June 1, 1911.

Johnson, Thomas H., lieutenant, left Fort Baker, Cal., en route to San Diego, Cal., for duty with 30th Infantry.

Gilchrist, H. L., major, reports for duty at Fort Sam Houston, Texas.

Etter, Harry B., lieutenant, left Fort Snelling, Minn., with 2d Squadron, 4th Cavalry, en route to El Paso, Texas.

Campbell, George F., M.R.C., left Fort Wingate, N. Mex., en route to Fort Sam Houston, Texas, with Co. A, 18th Infantry.

Hanson, Louis H., captain, left Fort Hamilton, N. Y., with troops en route to Texas.

Knox, Howard A., lieutenant, left Fort Hancock, N. J., with troops en route to Texas.

Gosman, George H. R., major, left Fort Barrancas, Fla., en route to Galveston, Texas, with 15th and 20th Cos. Coast Artillery.

Hutton, Paul C., major, left Fort Snelling, Minn., with the 28th Infantry, en route to Fort Sam Houston, Texas.

Bowen, A. S., lieutenant, and Maynard, E. B., M.R.C., left Fort Snelling, Minn., with the 28th Infantry, en route to Fort Sam Houston, Texas.

Patterson, Robert U., major, left Fort Banks, Mass., en route to San Antonio, Texas.

Long, Charles J., D.S., reports for temporary duty at Fort Constitution, N. H.

Phillips, Hiram A., lieutenant, left Fort Banks, Mass., en route to Fort Monroe, Va.; reported March 10 for duty on the *McClellan*.

Hopwood, L. L., captain, left Fort Monroe, Va., en route to Galveston, Texas.

Mount, James R., lieutenant, left Fort Sheridan, Ill., en route to St. Louis, Mo., for temporary duty at supply depot.

Rich, Edward W., captain, reported for duty with the 4th Reg. Prov. Coast Artillery, presidio of San Francisco, Cal., for duty in field.

Welles, E. M., Jr., lieutenant, left presidio of Monterey with troops for duty at San Diego, Cal.

Wales, Philip C., major, left presidio of Monterey with troops en route to San Diego, Cal.

Eckwurz, George M., major, left Fort Mackenzie, Wyo., with headquarters and two battalions of 18th Infantry en route to Texas.

Van Poole, Gideon M., major, left Fort Sheridan, Ill., en route to Fort Brady, Mich., for temporary duty.

Ragan, Charles A., captain, relieved from treatment at the Walter Reed General Hospital, Takoma Park, D. C., and from further duty in the Philippines division and assigned to temporary duty at the Walter Reed General Hospital.

Cole, Blase, M.R.C., resignation accepted by the President.

Manly, C. J., major, now at San Antonio, Texas, will proceed without delay to Galveston, Texas, and report to the commanding general, 1st Separate Brigade, for assignment to duty.

Davis, William B., colonel, granted leave of absence for two months and nine days, to take effect on his arrival in San Francisco, Cal.

Purnell, Harry S., captain, ordered to the Army General Hospital, San Francisco, Cal., for duty.

Bartlett, William H., captain, ordered to proceed from San Antonio, Texas, to Fort Oglethorpe, Ga., for temporary duty.

Richardson, William H., captain, reported for duty to commanding officer, 4th Prov. Reg. Art., at presidio of San Francisco, Cal., for field duty.

Tuttle, George B., M.R.C., left San Francisco, Cal., for duty in the field.

Ashburn, James A., M.R.C., left Fort Assiniboin, Mont., accompanying troops to Fort D. A. Russell, Wyo.

Hartscock, F. M., major, reports arrival at San Antonio, Texas.

Baker, David, major, and Darby, Taylor E., lieutenant, report arrival at camp near Fort Sam Houston, Texas., with the 17th Infantry.

Frick, Euclid B., lieutenant-colonel, and Tasker, Arthur N., lieutenant, left presidio of San Francisco en route with the 30th Infantry to San Diego, Cal., for field service.

Fletcher, John P., lieutenant, left Fort D. A. Russell, Wyo., with the 9th Cavalry to Fort Sam Houston, Texas.

Dutcher, Basil H., major, reports arrival at San Antonio, Texas, to assume command of the field hospital.

Fauntleroy, P. C., major; Beery, Harry R., lieutenant, and Jones, George B., M.R.C., report arrival at Camp San Antonio, Texas, with the 10th Infantry.

Mills, Fred H., M.R.C., left Fort Missoula, Mont., en route to Fort Assiniboin, Mont., detached duty.

Reynolds, F. P.; Fauntleroy, P. C.; Clayton, Jere B.; Bispham, William N.; Dean, Elmer A., majors; Bevans, James L., and Thomas, Henry D., captains. Orders directing the above officers to take a course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kan., is revoked.

Stone, Frank P., D.S., left presidio of Monterey, en route to Fort Rosecrans, Cal., for temporary duty.

Long, Charles J., D.S., reported for temporary duty at Fort Williams, Maine.

Medical Corps, U. S. Navy

Changes during the week ended March 18, 1911.

Morris, L., surgeon, detached from the naval supply depot, navy yard, New York, and ordered to the *Hancock*.

Benton, F. L., surgeon, detached from the *Franklin* and ordered to the *Idaho*.

Phummer, R. W., surgeon, detached from the *Idaho* and ordered to the *Franklin*.

Cook, F. C., surgeon, detached from the *North Carolina* and ordered home to await orders.

Lykes, J. R., P. A. surgeon, detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the navy yard, Portsmouth, N. H., and to additional duty in connection with the *Southern, Topeka*, and naval hospital at that place.

Old, E. H. H., P. A. surgeon, detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the *North Carolina*.

Hoyt, R. E., P. A. surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the *Buffalo*.

McDowell, R. W., asst.-surgeon, detached from the Naval Academy and ordered to the Bureau of Medicine and Surgery, Navy department.

Michels, R. H., A. A. surgeon, appointed acting assistant surgeon from March 10, 1911.

Richardson, R. R., surgeon, detached from the *Prairie* and ordered to the *Virginia*.

Ohnesorg, K., surgeon, detached from the *Virginia* and ordered to the *Prairie*.

Crandall, R. P., surgeon, detached from the *Hancock* and ordered to treatment at the Naval Hospital, New York.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended March 15, 1911.

Anderson, J. F., P. A. surgeon, directed to proceed to Trenton, N. J., on special temporary duty.

Collins, G. L., P. A. surgeon, directed to proceed to Boston, and report to the medical officer in command for duty and assignment to quarters.

Salmon, T. W., P. A. surgeon, granted six months' leave of absence from April 18, 1911, without pay.

Frost, W. H., P. A. surgeon, directed to proceed to Savannah, Ga., on special temporary duty.

Simpson, Friench, P. A. surgeon, granted fifteen days' leave of absence from March 20, 1911.

DeForest, C. M., A. A. surgeon, granted two weeks' leave of absence from April 25, 1911, without pay.

Duke, B. F., A. A. surgeon, granted fifteen days' leave of absence from Feb. 14, 1911, on account of sickness.

Horning, Henry, A. A. surgeon, granted seven days' leave of absence from March 8, 1911, under paragraph 191, Service Regulations.

Kuhn, C. F., A. A. surgeon, granted thirty days' leave of absence from April 15, 1911, with pay, and two months without pay, from May 15, 1911.

Weeks, A., A. A. surgeon, granted thirty days' leave of absence from March 6, 1911.

Wright, F. W., A. A. surgeon, granted eight days' leave of absence from March 18, 1911.

Board of medical officers convened to meet at the Marine Hospital, Portland, Maine, on call of the chairman, to conduct a medical survey of an officer of the Revenue Cutter Service. Detail for the board: Surgeon C. E. Banks, chairman; Surgeon J. M. Eager, recorder.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Los Angeles, June 27-30.

Alabama, Medical Society of the State of, Montgomery, April 18.
Am. Assn. of Pathologists and Bacteriologists, Chicago, April 14-15.
American Gastro-Enterological Assn., Philadelphia, April 19-20.
California, Medical Society of State of, Santa Barbara, April 18.
District of Columbia, Medical Association of, Washington, April 25.
Georgia, Medical Association of, Rome, April 19-21.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 25-27.
Mississippi State Medical Association, Jackson, April 11.
New York, Medical Society of the State of, Albany, April 18.
South Carolina Medical Association, Charleston, April 19-21.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Annual Meeting, held in Chicago, Feb. 27-28, 1911

(Continued from page 844)

The address of the president, Dr. John A. Witherspoon, will appear in full in THE JOURNAL.

Entrance Requirements for Admission to the Medical Course

DR. GEORGE EDWIN MACLEAN, President of the University of Iowa: The entrance requirements should be met absolutely without conditions. The work of the medical college is so heavy that the student should not be permitted to drag any entrance conditions after him. The success of the instruction in the first year is imperiled if the student must divide his attention between his current studies and back work. The abolition of conditions removes opportunities for college

authorities, overzealous about attendance, or tempted to dishonesty in administration, to evade the published requirements. If the ideal requirement is adhered to, not less than two years of college work, there is little or no sense for one to seek admission to the medical school with a condition.

I would have the preliminary education consist of graduation from an accredited high school, normal school or academy, plus two years taken in an accredited college of liberal arts, with a course of at least one year each devoted to physics, chemistry and biology. The entrance requirements to the collegiate work should be made more flexible, the number of specifically required subjects in the secondary education being reduced in view of the fact that the two years in liberal arts round out the four years of the secondary school. In the period of six years there should be not less than two years of Latin or Greek, or four years of modern languages with the elements of Latin grammar, two years of mathematics, two years of English, one year of history and one year each of physics, chemistry and biology, preferably done in college. If, temporarily, some schools must be allowed the liberty of admitting on a four-year high school basis, and therefore think it necessary to specify rather particularly certain entrance requirements, might it not be possible to permit such colleges as require the two years of collegiate study for admission not to require specific subjects beyond Latin, physics, chemistry and biology? Practically every high school student will offer a reasonable amount in English, history and mathematics. The wider range of time given in which to complete the required subjects would largely do away with the evil of estimating equivalents and the frauds sometimes perpetrated in these estimates. This would also gain time for the extension of the professional courses, including hospital work.

The unit of measurement should be the "unit." Such terms as "count," "point" and "credit" should be discontinued. With reference to examinations, I would suggest that they total not less than fifteen units in required and elective subjects. I would select major topics in the four fields of language and literature, history, mathematics and science, instead of giving detailed examinations in all the subjects enumerated. The examiner should be an expert university or college examiner, meeting the few individuals who have prepared by tutoring or in unaccredited schools or through misfortune and age, come up without institutional training. He should size up these personalities in connection with all the records presented and use his discretion in giving a chance for these individuals in the college of medicine. We must preserve opportunities for individuals in this day of emphasis on institutionalism. The examiner can be depended on to conserve standards.

The entrance requirements, then, should be fifteen units of secondary school work in an accredited school, plus thirty hours of college work, the secondary and collegiate work embracing the required subjects of not less than two units of Latin or Greek, or four units of modern languages, provided an examination is passed in the elements of Latin grammar, two units of mathematics, one unit of history, two units of English, one unit or year hour each of physics, chemistry and biology. The candidate for admission should not be permitted to enter the college of medicine with conditions. The administration of these standards is to be by boards empowered by statute to administer them, and by accredited schools and colleges, and by authorized examiners not members of the medical colleges concerned.

DISCUSSION

DR. EGBERT LEFEVRE, University of Bellevue Hospital Medical College: One of the biggest stumbling blocks in the way of the medical colleges is the attitude of the universities not connected with the state toward this two-year college requirement. In the West the high school and university courses are correlated. In the East there is no such correlation. We have dissociated universities and colleges so that there is a great impediment to students passing from one to the other, and that makes it doubly hard for a high school pupil to get

two years of college work and then pass smoothly into college work. We demand an intensive course preparatory to a professional education which cannot be given in the professional or technical school, but in making this demand we place our students at a disadvantage because of this attitude on the part of the universities who do not wish to modify their curriculum to suit these two-year men. Until they accept it as a part of their duty to correlate their entrance requirements with the generally accepted and accredited high schools, there is going to be great difficulty in advancing men from the high school into the college to meet the requirements Dr. MacLean has mentioned.

DR. RANDOLPH WINSLOW, University of Maryland: I wish to endorse the suggestion that any man who has been unfortunate enough not to be able to secure the necessary collegiate training should have the right to get a medical education if he is capable.

DR. H. D. ARNOLD, Boston: I think we may admit that the strict regulations which we have tried to place about our examinations are due to the fact that we are not living up to our present standards. What we need more than anything else is a minimum that will be lived up to.

DR. J. S. FERGUSON, Cornell University: It seems to me anomalous that the same effort that tends to elevate the degree of M.D. should lower the degree of A.B. If we would endeavor to exercise our influence with the colleges not to do that, we would be able to secure preparatory medical courses in the non-state-supported institutions.

DR. ARTHUR DEAN BEVAN, Rush Medical College: Modern medicine demands a certain preliminary training. It demands that a man have a well-rounded secondary school education and a training in chemistry, physics and biology. The colleges which do not require that are doing poor, inefficient work in the light of the demands of modern medicine. Medical education also demands one year of practical training in a hospital where the student is part of the hospital machinery for the care of patients.

Administration of Entrance Requirements

DR. B. D. HARISON, Michigan State Board of Registration in Medicine: The proper method of administering requirements is by the board itself, covering credentials and credits, and in the event of an applicant not having the required qualification, he should be referred to a board of preliminary examiners, consisting of not less than four high school principals or superintendents for regular examination on the standard set by the board, covering a high school credential and its symmetrical features. This board reports its findings to the medical board. A properly constituted board of this kind will, in my experience, refuse the proper certificate to at least 75 per cent. of the applicants. This is not only an honest administration, but a practical one.

(To be continued)

AMERICAN CONFEDERATION OF RECIPROCATING EXAMINING AND LICENSING MEDICAL BOARDS

Ninth Annual Meeting, held in Chicago, March 3, 1911

The President, DR. WILLIAM A. SPURGEON, Muncie, Ind., in the Chair

Officers Elected

Dr. Spurgeon was reelected president and Dr. B. D. Harison, secretary; Dr. A. W. Alvord, Battle Creek, Mich., was elected vice-president.

Report of Secretary

Dr. Harison reported that the following states (fourteen) are now in membership in the confederation: Georgia, Indiana, Iowa, Kansas, Maryland, Michigan, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, Utah, West Virginia and Wisconsin.

The following states (nineteen) reciprocate on the basis of the qualifications adopted by the confederation, but are not in membership: Arkansas, Colorado, Delaware, District of Columbia, Illinois, Kentucky, Louisiana, Maine, Minnesota,

Missouri, New Hampshire, New Jersey, New York, South Carolina, Tennessee, Texas, Vermont, Virginia and Wyoming.

From Jan. 1, 1910, to Jan. 1, 1911, 1,000 reciprocal registrations were made by twenty-five states, 894 on the basis of Qualification No. 1 and 106 on the basis of Qualification No. 2.

Report of Committee on College Inspection

Dr. Spurgeon, chairman, reported that the following constituted the committee on college inspection: W. A. Spurgeon, Indiana, chairman; A. W. Alvord, Michigan; H. A. Barbee, West Virginia; H. H. Baxter, Ohio; I. H. Goss, Georgia; E. A. Carr, Nebraska; J. V. Stevens, Wisconsin. It was recommended that any inspection made be in the company of some representative of the state board of the state wherein the inspection was made, since each state board was the court of last resort regarding these matters in its own state. It was resolved also that the examiner should cooperate with the Council on Medical Education of the American Medical Association and with the Association of American Medical Colleges. The standard of rating was to be the standard adopted by the confederation in 1908.

Dr. J. V. Stevens, secretary, reported that it was decided to ask the colleges to pay the expense of the inspection. The work cannot be completed before the next meeting of the confederation, and no information can be given out now.

Report of Committee on Amalgamation with the National Confederation

Dr. Harison, chairman, reported that a conference was held with a committee from the national confederation in June, 1910, but that no definite action was taken at that time. It was considered desirable that the two confederations unite, but the basis for such a merger could not be made mutually agreeable then. The following communication bearing on this subject was then presented:

CHICAGO, March 2, 1911.

At the call of Dr. W. P. Harlow, dean of the School of Medicine of the University of Colorado, and president of the Association of American Medical Colleges, the following persons met in an informal conference for the purpose of discussing how a union of the two confederations of state examining and licensing boards might be effected:

Dr. Arthur Dean Bevan and Dr. N. P. Colwell, chairman and secretary, respectively, of the Council on Medical Education of the American Medical Association; Dr. Charles A. Tuttle and Dr. George H. Matson, president and secretary, respectively, of the National Confederation of State Medical Examining and Licensing Boards; Dr. William A. Spurgeon and Dr. B. D. Harison, president and secretary, respectively, of the American Confederation of Reciprocating Examining and Licensing Medical Boards; Mr. Abraham Flexner of the Carnegie Foundation for the Advancement of Teaching; Dr. William P. Harlow and Dr. Fred C. Zapffe, president and secretary, respectively, of the Association of American Medical Colleges.

On motion of Dr. Bevan, Dr. Harlow was made chairman and Dr. Zapffe secretary of the conference.

On motion of Dr. Bevan, seconded by Dr. Harison, it was voted that it be the sense of the conference that it is desirable that there be in this country one strong organization of state examining and licensing boards.

On motion of Dr. Matson, seconded by Dr. Colwell, it was voted that the name of such an organization might well be the National Federation of State Medical Boards.

On motion of Dr. Harison, seconded by Dr. Matson, it was voted that the membership of such an organization should consist of members, fellows and associates; that state boards only to be entitled to membership, with power to vote; ex-state board members to be elected to fellowship, without vote, and physicians, not members of an examining or licensing board, who are interested in medical education and state licensure, to be elected to associate membership (without vote) by a two-thirds vote of the members present at any meeting. Only fellows are to be exempt from the payment of dues.

WILLIAM P. HARLOW, Chairman.
FRED C. ZAPFFE, Secretary.

By a resolution presented by Dr. A. W. Alvord, it was voted that the president and secretary of the confederation with three others selected by the president constitute a committee to meet with a similar committee representing the national confederation for the purpose of effecting an amalgamation of the two organizations. The committee appointed consists of Drs. A. W. Alvord, Michigan; E. A. Carr, Nebraska; H. H. Baxter, Ohio; William A. Spurgeon, Indiana, and B. D. Harison, Michigan.

By another resolution presented by Dr. Spurgeon, it was voted that specific education provisions in a medical practice act tend to weaken the law and to limit the educational standards in the state; that the confederation recommends the conferring of discretionary powers on the board of registration in the matter of educational control, and that the law should provide that the board make, establish and require such rules and regulations for the control of medical colleges as shall keep the educational standard of the state at least on a par with the average standard of surrounding states.

Entrance Requirements

DR. B. D. MYERS, University of Indiana, discussed the present requirements for admission to medical colleges demanded by fifteen medical colleges beyond the high school graduation, and presented some data compiled by the secretary of the Council on Medical Education of the American Medical Association, showing the lack of uniformity in these requirements. Six schools demand sixty hours of work, or two years of college work, in addition to the four years of high school work; eight demand from sixty-one to sixty-nine hours, and one school demands as high as eighty-two hours. Among the required subjects are physics (twelve colleges); botany and zoology or either (thirteen colleges); vertebrate anatomy (four); embryology (two); osteology (one); English (eleven); modern language (twelve); chemistry (fourteen); psychology (seven); Latin (one); economics, sociology, history and political science (eight); mathematics (five); hygiene (one); military drill (one); electives offered (seven). Four colleges offer electives to the extent of twenty-one, twenty-four, thirty-two and thirty-three hours, respectively, out of a total of sixty hours.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—Fourth Weekly Meeting

PUERPERAL INJURIES

INJURIES OF THE PELVIC FLOOR: Varieties: 1. Superficial median tears. 2. Deep median tears, involving sphincter. 3. Lateral tears involving sulci. Pathology and diagnosis of each.

TREATMENT OF PERINEAL LACERATIONS: Indications and contra-indications for primary and for secondary operations. Technic of repair (a) of deep (complete) laceration, (b) of laceration involving sulci.

After-treatment of operations for repair of perineal lacerations.

INJURIES OF CERVIX UTERI

VARIETIES: Bilateral, unilateral, stellate.

SYMPTOMS: Backache, bearing-down feeling, headache, leukorrhea, menstrual disorders, sterility, abortion.

Indications and contra-indications for repair of laceration of cervix.

Preliminary and preparatory treatment.

Technic of trachelorrhaphy, of amputation of cervix.

Monthly Meeting

The Differential Diagnosis of Ovarian Cysts.

The Non-Surgical Treatment of Retrodisplacements of the Uterus.

The Symptoms and Diagnosis of Fibromyomata of the Uterus.

The Prophylaxis and Treatment of Puerperal Injuries of Cervix and Perineum.

Book Notices

AN INTRODUCTION TO VERTEBRATE EMBRYOLOGY. Based on the Study of the Frog, Chick and Mammal. By Albert Moore Reese, Ph.D. (Johns Hopkins), Professor of Zoology in West Virginia University. Second Edition. Cloth. Price, \$1.50 net. Pp. 340, with 118 illustrations. New York: G. P. Putnam's Sons, 1909.

Since the development of man and other mammals is, in most particulars, strikingly like that of the chick, a study of the latter is helpful. In this book the author presents an outline of the main facts of the embryology of the chick—also of the frog—keeping in mind particularly the needs of the medical student. The description considers periods of development: all the changes that take place during a certain period are described in one section, instead of describing at one time the complete development of any one organ. This method is not only pedagogically correct but enables the student to grasp facts better and more quickly. Theoretical discussions are carefully avoided. The author has added a chapter of forty pages on "The Development of the Mammal," in which are pointed out the main differences between the embryologic processes of the chick and those of man.

WE YOUNG MEN. The Sexual Problem of an Educated Young Man Before Marriage: Purity, Strength and Love. By Hans Wegener. Introduction by Sylvanus Stall. Paper. Price, 70 cents. Pp. 204. Philadelphia: Vir Publishing Co., 1911.

It was a most commendable piece of work to translate this German book, thereby making it available for young men who read English. As the advertisements state, it is a square talk face to face. It is a delicate but vigorous presentation of clean living. Some will object to the frank way in which the author takes for granted that some young men seriously consider the breaking of various moral laws concerning sexual indulgence. For this very reason, however, the book will have greater weight with this class of men than the numerous books already on the market which preach to young men. We do not mean to suggest that this book is not on a high plane, for it is full of noble and lofty appeal to the best that is in a man; but it meets young men on their own level, and it has the valuable quality of convincing the reader that the author has been in pretty close touch with these problems. The book is a good one to succeed "The Boy's Venereal Peril," being intended for youths who are a little more mature.

RADIUM: ITS PHYSICS AND THERAPEUTICS. By Dawson Turner, B.A., M.D., F.R.C.P., Edin., Lecturer on Medical Physics, Surgeons' Hall, Edinburgh. Cloth. Price, \$1.75 net. Pp. 86, with 27 illustrations. New York: William Wood & Co., 1911.

This is a little octavo book of only 86 pages, hardly larger than some of the elaborate papers on radium therapy, but it satisfactorily covers the subject. The essential facts in the physics and the principles of the therapeutic application of radium are clearly and simply given, without any of the complexity usually found in articles on the subject, which indicates more than anything else a hazy knowledge on the part of the writer. It may be specially noted that Turner considers carefully the histologic changes produced by radium in both healthy and diseased tissues—a topic which would seem to be of obvious importance in any consideration of radium therapy, but one, so far as we know, which no other book on the subject has given in detail. The book is a fine example of how simply and briefly a rather muddled subject can be stated by one who understands it and who has the ability to think clearly and distinguish essentials from trivialities.

PRACTICAL PHYSIOLOGY. Edited by M. S. Pembrey. By Various Contributors. Third Edition. Cloth. Price, \$4 net. Pp. 480, with 255 illustrations. New York: Longmans, Green & Co., 1910.

In this book not only are the facts of the physiology of the human organism taught according to the latest deductions and conclusions, but each is demonstrated by an abundance of experiments, both elementary and more advanced, and the practical application made with reference both to normal and pathologic function in the practice of medicine. Physiologic chemistry, in both its elementary and its more advanced aspects, is clearly treated, Part IV being devoted to the latter. The impression conveyed in an examination is that this book constitutes not a mere enumeration of the facts of physiology, but a helpful, practical work on physiology, from the standpoint of the student or the practitioner.

Medicolegal

Expert Evidence Without Statement of Facts and Right to Show Latter

The Court of Appeals of New York holds, in the homicide case of *People vs. Faber* (92 N. E. R. 674), that there was no error in allowing physicians to express their opinions in regard to the sanity of the defendant without previously stating in detail the observations on which the opinions were based.

The court says that in the early history of the courts of England mere opinion evidence was wholly rejected. The admission of opinions as evidence by persons specially qualified by skill and experience to speak as experts has been a matter of development both in England and in this country. The history of the admission of such evidence with illustrations from decisions of the courts is given by Wigmore in his exhaustive work on Evidence, and in connection therewith he refers to the practice of admitting opinion evidence by experts based on observation, and concludes that evidence by experts of conceded skill and experience may be received when based on the observation of the witness without in the first instance necessarily requiring that the facts observed be stated to the court and jury. There is a great difference in the decisions of the courts of the states on this subject, but this court is in accord with the conclusions reached by Mr. Wigmore.

In common practice in the courts a physician who has examined a patient is allowed to testify directly as to the disease from which the patient is suffering. There seems to be no good reason for requiring a physician to specify in detail his observations before expressing an opinion as to the sanity or insanity of a person examined by him any more than he should be required to recount such observations in advance of expressing an opinion as to whether a person had typhoid fever or was suffering from an epileptic fit. It is competent, however, for a person offering an expert as a witness, for the purpose of showing the strength of the opinion which he is about to express, to specify in detail the observations on which the opinion is based. It is also, of course, competent for the opposite party on cross-examination to call for the observations, and probe the underlying facts to the fullest extent for the purpose of thus affecting, so far as possible, the strength of the opinion expressed or to form a basis on which other experts may be asked to contradict or explain the opinion first expressed.

Weight to be Given Expert Testimony

The Supreme Court of Georgia holds, in *Rouse vs. State* (69 S. E. R. 180) that, there being no statute prescribing the weight which shall be given to the testimony of an expert, what consideration such evidence is entitled to is a question solely for the jury. Under this principle, it was error to charge the jury that, "When the experience, honesty, and impartiality of the expert is undoubted by the jury, his testimony is entitled to great weight. It is not, however, so authoritative that the jury is bound to be governed by it. It is advisory merely, and such testimony is intended to assist you in coming to a correct conclusion." Moreover, such charge was error despite the fact that witnesses both for the state and for the accused testified on the trial of the case.

Crime Not Affected by Lack of Skill in Treatment of Wounds

The Supreme Court of Georgia holds, on the appeal of *Perdue vs. State* (69 S. E. R. 184), a homicide case, that, where one inflicts on another a wound with a weapon likely to produce death, and the person wounded actually dies in consequence of the wound, the quality of the act of the slayer cannot be affected by a lack of skill and care on the part of those who treat or attempt to treat the wounds and administer remedies therefor.

Current Medical Literature

[In the abstract of the case report of "Heroin Poisoning," made from the *Kentucky Medical Journal*, February 15, in *THE JOURNAL*, March 11, 1911, p. 777, the dose should have been 1/12 of a grain of heroin, instead of 1/2.]

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

March 9

- 1 *Dependence of Intestinal Indigestion on Gastric Disturbances. A. E. Austin, New York.
- 2 *The Possible Effect of Salvarsan on the Auditory Labyrinth. G. Alexander, Vienna.
- 3 Treatment of Fistula in Ano. T. C. Hill, Boston.

1. **Dependence of Intestinal Indigestion on Gastric Disturbances.**—Austin concludes that diarrhea does not always accompany an achylia nor a hypochlorhydria, nor can one, from the presence of connective tissue in the stool, always deduce the state of the gastric juice. Furthermore, while hyperchlorhydria is usually accompanied by constipation, there may be diarrhea, or the bowels may be regular, while with gastric myasthenia constipation is the rule, as it is in hypersecretion. A functional chronic catarrh of the small intestine may exist associated with any of these gastric conditions, with excessive or no free hydrochloric acid, and with increased or impaired motility, so that one can only say that improperly prepared food is poured into the small intestine which, either on account of this extra burden or on account of some antecedent inflammatory disturbance, undergoes a functional impairment that usually manifests itself by the increased motility.

2. **Effect of Salvarsan on the Auditory Labyrinth.**—Personal observations lead Alexander to recommend caution in the use of salvarsan in cases of acute syphilis of the auditory nerve. Especially is caution in the use of the remedy recommended in the presence of acute or chronic disease of the auditory nerve in cases of recent syphilis, as here it is to be feared that the ear symptoms will be made worse. It appears to make no difference whether the disease of the auditory nerve is of itself of syphilitic origin or not. An unfavorable influence is also to be feared in cases of acute syphilitic affection of the auditory nerve in old cases of syphilis or latent chronic syphilis. In cases of hereditary syphilis, in the presence of acute manifestations of trouble with the auditory nerve, it is advisable to wait before giving the injection. On the other hand, there are a large number of cases of ear disease in which the dangers from the injection cannot be considered as dependent on it. Here belong the cases of chronic syphilitic affection of the auditory nerve with slight diminution of hearing power and considerable tinnitus, as well as the cases of chronic labyrinth dizziness. Alexander found that the injection has a good effect in cases of chronic labyrinth disease in chronic syphilis.

Medical Record, New York

March 11

- 4 *Pellagra as We See It in Italy; Old and New Theories; Report of Cases Seen in New York City. A. Caccini, New York.
- 5 *A New Variant for Ventral Hernioplasty. A. G. Gerster, New York.
- 6 *Hypodermic Injections of the Salicylates in Rheumatism. A. Seibert, New York.
- 7 Treatment of Acute Mania. C. P. Noble, Philadelphia.
- 8 Unilateral Chyluria Caused by the Filaria Sanguinis Hominis Treated by Salvarsan. P. M. Pilcher and J. T. Pilcher, Brooklyn, N. Y.
- 9 *Artificial Muscles in the Early Treatment of Infantile Paralysis; a New Method. R. O. Meisenbach, Buffalo, N. Y.
- 10 Climatic Indications of Egypt in Otology and Laryngology. Dr. Goldman, Cairo, Egypt.

4. **Pellagra.**—While holding that we should follow with attention the new theories and the result of the researches on the etiology of pellagra conducted through new lines far apart from the theory well established by Lombroso, based on the use of Indian corn, and to its late modifications, Caccini urges caution in casting aside the result of careful inves-

tigations (based on well-established data) to embrace in our enthusiasm mere suggestions of young observers. Sambon's and Alessandrini's theories, that would tend to make of pellagra a disease of protozoal or parasitic nature, respectively, he would consider as mere suggestions, rather than theories or even intuitions of a new theory. As to the development in the United States, pellagra has been present in the United States in sporadic cases for a long time, but it has lately been diffused everywhere in the different states, assuming an epidemic character. The disease assumes a more acute course in contrast to its characteristics in Europe, and particularly in Italy, where, although very common, it has always the character of chronicity and the erythema never assumes the severe character which it does in the United States.

5. New Variant for Hernioplasty.—The procedure employed by Gerster in a case of large ventral hernia, without adhesions, is described as follows: An oval portion of the central area was excised as far as it was found to be thin and anemic, then the hernial aperture in the parietes was dissected out until the aponeuroses of the rectus and the oblique came into view under the laterally detached skin-flaps. After this, seven sutures of quadruple stout chromic catgut were used to approximate and keep in contact the edge of the rectus and the musculo-aponeurotic line of the oblique muscles, the sutures passing through the sheath of the rectus. Above this, a second row of single catgut sutures was superimposed, widening the surfaces of contact. Thus there were formed two redundant, cockscorn-shaped flaps of aponeurosis and stout cicatricial material, that met with their peritoneal faces above the stout sutures. Of these the external one was twice scored, thus scalloped into three digits, the inner one receiving three corresponding stabs, which would form three slits comfortably admitting the three fingerlike processes. Each process having been passed through its corresponding fenestrum was sutured at its extreme end to the underlying fascia of the rectus; the inner square edge of the fenestrated flap being likewise sutured to the aponeurosis of the underlying external oblique muscle by six or seven stitches. Over all this the skin was brought together and sewed with interrupted fine silk sutures.

6. Salicylates in Rheumatism.—That a salicylate solution could be injected hypodermically without discomfort to the patient, and that a sufficiently large injection of salicylic acid or sodium salicylate would destroy the vitality and inhibit the pathogenic action of rheumatic organisms in the human body in a few hours without causing symptoms of salicylic poisoning, is the belief Seibert holds as the result of observation. In acute rheumatic infection of joints, heart, pericardium, pleura and central nervous system (chorea), he injected 10 c.c. of a 20 per cent. sterilized solution of fresh sodium salicylate to 100 pounds of body weight, fifteen minutes after an appropriate cocaine solution had been injected under the same spot. If the injections are made earlier than this, he found that the solution caused pain. This dose is repeated every twelve hours. In severe cases, with many localizations of the rheumatic process, he says that the dose may be increased to 15 c.c. of the solution to 100 pounds of body weight. He considers it essential to the success of this treatment that the above doses be used. Smaller doses will be without effect. The effect may be noticed within three hours after the first injection. Joint stiffness, pain, fever and pulse-rate diminish and the general feeling of the patient improves. If the injections are continued regularly, every twelve hours, the improvement also continues; if they are omitted for twenty-four hours in severe cases, the symptoms will grow worse; but in milder cases the improvement may continue, proving that a sufficient amount of the salicylate had already been injected to destroy all rheumatic organisms in that case.

In chronic cases 10 c.c. to 100 pounds of body weight of the following oily solution are injected every twenty-four hours: Acid salicylic, 10 grams (2½ drams); olei sesami, 80 grams (20 drams); alcohol, pure, and gum camphor, 5 grams (1¼ drams) each. This mixture is sterilized before the alcohol is added, but must not be exposed to the air, as the alcohol will evaporate and the salicylic-acid crystals will precipitate. The effect of the injection in chronic cases is noticed sooner when

multiple localizations of the rheumatic process are present than when but one joint is affected. In the former, pain and stiffness usually improve after the first, in the latter, after the third injection. The addition of camphor (from 5 to 20 per cent.) has been found beneficial in stimulating the heart, especially in pericarditic and endocarditic cases. The weaker the heart, the more camphor may be given in the oil. The entire absence of all the toxic symptoms which are sometimes seen when salicylates are given by mouth, is said to be one of the pleasantest features of this method of treatment. The technic of injection is described fully.

9. Artificial Muscles in Infantile Paralysis.—Artificial rubber muscles are made to take the place of paralyzed or weak muscles by Meisenbach. For the construction of artificial muscles an ordinary rubber dam is used. The method is chiefly applicable to the ankle, the knee, the wrist and shoulder joints. By the use of artificial muscles the lost power may be supplied temporarily until the paralyzed muscles have recovered, and contractures of opposing groups may be prevented. The rubber over the affected muscles causes a local stimulation which is noted by active hyperemia and perspiration of the skin beneath the artificial muscle. Its use does not immobilize the joint, nor does it interfere with other prescribed treatment, namely, passive motion, massage, or electrical contractions. Its efficiency is continuous and its simplicity does not interfere with the clothing or the bathing. It is not intended to be used in advanced cases after the contractions have taken place.

Cleveland Medical Journal

February

- 11 Typhoid in Cleveland in Relation to Pollutions of Lake Erie. R. G. Perkins, Cleveland.
- 12 The Legal Duty of Physicians to Report Venereal Diseases. R. B. Newcomb, Cleveland.
- 13 The Reporting of Venereal Diseases. F. Oakley, Cleveland.
- 14 *Submucous Resection of the Nasal Septum, with a Description of the Author's Special Instruments. M. Metzenbaum, Cleveland.
- 15 Infantile Paralysis. H. O. Feiss, Cleveland.
- 16 Support of the Pelvic Viscera. E. O. Houck, Cleveland.
- 17 Management of Prostatic Hypertrophy. D. S. Gardner, Massillon, Ohio.

14. Also published in the *Laryngoscope*, February, 1911.

Bulletin of the Johns Hopkins Hospital, Baltimore

March

- 18 *Cirrhosis of the Liver. Five Different Types of Lesions from Which It May Arise. F. B. Mallory, Boston.
- 19 *Typhoid Spine; Report of Two Additional Cases with Bony Changes in the Vertebrae. T. McCrae, Baltimore.
- 20 *Erythema Multiforme Iris During the Course of Typhoid. H. P. Parker and H. H. Hazen, Washington, D. C.
- 21 *Acute Tuberculous Endocarditis. P. G. Woolley, Cincinnati.
- 22 *A Case of Extensive Thierseh Skin Graft. W. D. Gatch, Baltimore.
- 23 Two Cases of Congenital Hemolytic Jaundice with Splenomegaly. W. S. Thayer and R. S. Morris, Baltimore.

18. Cirrhosis of the Liver.—According to Mallory, at least five different types of lesions may terminate in cirrhosis (sclerosis) of the liver; one is acute, the other four more or less chronic in character. Toxic cirrhosis (following extensive central necrosis) demonstrates clearly the following three facts: 1. When all the liver cells of a lobule are destroyed the bile ducts grow out a certain distance toward the hepatic vein, but do not produce liver cells. 2. Liver cells regenerate only from liver cells, never from bile duct epithelium. 3. Fibroblasts (connective tissue cells) do not proliferate when liver cells alone are destroyed. The other four types of lesions terminating in cirrhosis show that fibroblasts multiply (regenerate) only when fibroblasts themselves have been injured or destroyed and thus lead to increase of the connective tissue. The so-called alcoholic type of cirrhosis is characterized by a peculiar hyaline degeneration of the cytoplasm of the liver cells preceding necrosis. In this same type of cirrhosis the contraction of the connective tissue frequently compresses groups of liver cells so that they may resemble bile ducts; in these compressed liver cells it is often possible to demonstrate large fat vacuoles or hyaline material due to degeneration in the cytoplasm, neither of which occurs in true bile duct epithelium. In toxic cirrhosis the connective tissue

thickens from contraction, but does not increase in amount because the fibroblasts have not been injured. In infectious cirrhosis the fibroblasts are destroyed along with the liver cells; hence there is active regeneration and much production of connective tissue. In syphilitic infection of the liver the primary injury is done to fibroblasts; in consequence they proliferate (regenerate), often in excess; the contraction later of the collagen fibrils produced by them results in compression and more or less atrophy of the included liver cells. In pigment and alcoholic cirrhosis the proliferation of the fibroblasts is apparently due to injury caused mechanically by cells of exudate origin stretching the connective tissue; the reaction is similar to that produced in the lungs and peribronchial lymph nodes by endothelial leukocytes filled with carbon packing themselves in the finer lymph spaces.

19. Typhoid Spine.—These two cases are reported fully by McCrae. In the first case symptoms of typhoid spine were present in March, 1909, four months after the recovery from typhoid, and again in April. One point of interest is the occurrence of a relapse or second attack between five and six months after the original attack. Whether this should be termed a relapse or a second attack, McCrae found it difficult to decide, for there is no period which can be set as a dividing line between a relapse and a second attack. The case here reported is much like one previously described by McCrae, in which the original attack began on June 2, the patient being convalescent in March when the symptoms of typhoid spine appeared. He was admitted to the hospital on July 4 of the same year for the spinal symptoms, and a week later the second attack (or relapse) of typhoid began. In both of these cases there was an interval of months between the attacks, in which the symptoms of spondylitis appeared. One explanation of the cause of typhoid spondylitis is that there are local lesions in the bone in which typhoid bacilli are present. McCrae was tempted to suggest that this focus may have been the source of the second infection in these cases. However, our knowledge of what determines relapses is not very satisfactory and it would be easier to regard the second febrile attack in these two cases as a second attack rather than as a relapse. Besides, the retention of typhoid bacilli in the body after recovery from an attack of typhoid is so common (e. g. in the gall-bladder) that we should not attach too much importance to such a source of reinfection.

The second case is unusual in several particulars. In the first place it shows that typhoid spondylitis may occur without any severe pain. The symptom of pain has been regarded as the most essential one in "typhoid spine" and it is very evident in this case that but for the radiogram the diagnosis of spondylitis could not have been made. In this event the condition in the popliteal nerve would have been regarded as a posttyphoid neuritis and the causal influence of the local process in the spine would not have been recognized. The involvement of the nerve root on the opposite side to that on which the deposit of bone occurred is seen not infrequently in cases of spondylitis. McCrae thinks it may be regarded as an established fact that "typhoid spine" is a spondylitis or a perispondylitis with definite local changes which may lead to the formation of new bone and so result in more or less fixation of the spine. Judging from spondylitis generally, this permanent change is less likely to occur if the proper treatment is instituted early. Many cases of spondylitis clear without permanent changes.

20. Erythema Multiforme Iris.—The authors regard it as certain that the patient had typhoid on two occasions, the second attack occurring within a week after recovery from the first. During the height of the first attack he had the following symptoms characteristic of the erythemas: annular and macular skin lesions, and swelling and redness of the carpalophalangeal joints. During the height of his relapse he suffered from edema of the upper lip (giant urticaria), erythema at points of pressure and hemoptysis. The fact that these lesions occurred only when the infection was young and active, the authors think would seem to indicate that the typhoid toxemia was responsible for them.

21. Acute Tuberculous Endaortitis.—The case reported by Woolley is the eleventh of acute tuberculous endaortitis. The aortic tubercles were the result not of extension, but of metastasis from chronic lesions in the kidney. The general miliary tuberculosis that co-existed with the chronic tuberculosis, was not the result of dissemination of organisms from the aortic lesions. The bacilli in the aortic lesions showed bizarre forms with a tendency to branching.

22. Extensive Thiersch Skin Graft.—The case reported by Gatch has two points of chief interest: the large size of the area grafted, and the demonstration, by repeated trials, that only homografts would take in this patient. He was admitted to hospital on Nov. 21, 1909, for flame burns of the back and of the left forearm and hand which he had received fourteen hours before admission. The burn of the back was of the second degree, the others of the first. The area of this burn was 430 square inches. As the total area of the patient's body is about 2,800 square inches, the burn occupied between a sixth and a seventh of his entire cutaneous area. The patient recovered from the immediate effects of the injury rapidly and with little general systemic disturbance. While the sloughs were separating, the wounds were dressed with a single layer of dry gauze, which was left in place for periods of a week or more, and then changed after giving the patient a prolonged warm bath. Absorbent dressings, changed as often as necessary, were placed over the gauze. This dressing proved very clean and comfortable. In less than two weeks the burned surface was covered with healthy granulations. Now followed a long series of attempts to cover the large raw area with skin. None of the isografts applied to this patient lived, though applied under the same conditions as the homografts—practically all of which did take.

Bulletin of the American Academy of Medicine, Easton, Pa.
February

- 24 Educational Principles Involved in the Combined Course in Arts and Medicine. A. R. Hill, Columbia, Mo.
- 25 *Is the Profession Losing Its Grip? C. McIntire, Easton, Pa.
- 26 *Should Universities Grant the Degree of Ph.D. for Graduate Work in the Surgical Sciences? A. E. Hertzler, Rosedale, Kan.
- 27 *The Cooperation of School Health Departments with Other Health Agencies. E. B. Hoag, San Francisco.
- 28 *The School System and the Child. A. L. Benedict, Buffalo.

25, 26, 27 and 28. Abstracted in THE JOURNAL, July 16, 1910, p. 243.

Journal of the Tennessee State Medical Association, Nashville
February

- 29 Manic-Depressive Insanity. J. W. Stevens, Nashville.
- 30 Surgical Aspect of Calculus in the Kidney. J. A. Crisler, Memphis.
- 31 Maternal Impressions. H. E. Christenbery, Knoxville.

Journal of Biologic Chemistry, Baltimore
March

- 32 Formation of d-Gluconic Acid by Bacterium Savastanoi Smith. C. L. Alsberg, Washington, D. C.
- 33 Cholesterol Bodies in Soils: Phytosterol. O. Schreiner and E. C. Shorey, Washington, D. C.
- 34 Influence of Urethane in Production of Glycosuria in Rabbits After the Intravenous Injection of Adrenalin. F. P. Underhill, New Haven, Conn.
- 35 *Sources of Error in the Folin Method for the Estimation of Creatinin. A. E. Taylor, Berkeley, Cal.
- 36 *The Cutaneous Elimination of Nitrogen, Sulphur and Phosphorus. A. E. Taylor, Berkeley, Cal.
- 37 Estimation of Urea. A. E. Taylor, Berkeley, Cal.
- 38 Composition of Invertase. A. P. Mathews and T. H. Glenn, Chicago.
- 39 Method for Estimation of Reducing Sugars. S. R. Benedict, New York.
- 40 Study of Autolysis by Physicochemical Methods. R. Chiari, Vienna.
- 41 Nucleases. P. A. Levene and F. Medigrescu, New York.

35. Estimation of Creatinin.—The greatest defect of this method, in Taylor's opinion, lies in the absence of a standard light. If the Folin method is to attain to that general usefulness and reliability to which its intrinsic qualities entitle it, he says that a light must be found, standard in quality and intensity. Under ideal conditions, the method will enable one to estimate 10 milligrams of creatinin with an accuracy of plus or minus 0.1 milligram. Under desirable conditions of concentration, urinary pigmentation and light, the plus or minus error in the estimation may be at least a milligram. Accurate estimations that can close agreements in the deter-

minations of creatinin are greatly to be desired because in this case we deal with a fundamental metabolism, the full understanding of which we are just beginning to appreciate.

36. **Cutaneous Elimination.**—Taylor presents the results of two metabolic experiments, in which, for the purpose of securing normal data, the attempt was made to secure quantitative determinations of the magnitudes of the cutaneous eliminations of nitrogen, sulphur and phosphorus. He found that in all probability the cutaneous elimination of nitrogen and sulphur is, under constant conditions of work, clothing and temperature, a constant for each individual, and in no wise dependent on the total metabolism of nitrogen and sulphur in the individual. The cutaneous elimination of phosphorus may be said to be *nil*.

Wisconsin Medical Journal, Milwaukee

February

- 42 Enlargements of the Liver. L. M. Warfield, Milwaukee.
- 43 Symptoms and Diagnosis of Extranterine Pregnancy. V. F. Marshall, Appleton.
- 44 Extranterine Pregnancy. W. E. Fairfield, Green Bay.
- 45 Clinical Significance of High Blood-Pressure; Its Causes and Treatment. P. McKittrick, Eau Claire.
- 46 *The Nursing Mother from the Baby's Standpoint. A. W. Myers, Milwaukee.

46. Abstracted in THE JOURNAL, July 23, 1910, p. 344.

Archives of Pediatrics, New York

February

- 47 Effects of Vaccines. S. McC. Hamill, Philadelphia.
- 48 *Food Reactions in the Infant's Stomach Compared with Those in Vitro. D. M. Cowie and W. D. Lyon, Ann Arbor, Mich.
- 49 Methods of Examining Infants' Stools. Their Value. F. B. Talbot, Boston.
- 50 *A Method of Dealing with Ill-Nourished Infants. F. H. Glazebrook, Morristown, N. J.
- 51 Arthritis Deformans in Children. A Case of Still's Disease. E. C. Jones, Philadelphia.

48. Abstracted in THE JOURNAL, May 21, 1910, p. 1710.

50. An article by H. D. Chapin on the same subject appeared in the *Medical Record*, Feb. 18, 1911, and was abstracted in THE JOURNAL, March 4, 1911, p. 693.

Journal of the Minnesota State Medical Association, and the Northwestern Lancet, Minneapolis

March 1

- 52 Magnesium Sulphate in Tetanus. C. J. Holman, Mankato.
- 53 *Septic Thrombosis of the Sigmoid and Lateral Sinus, Complicating Case of Double Mastoiditis. F. C. Todd, Minneapolis.
- 54 Meckel's Diverticulum. D. Balfour, Rochester, Minn.
- 55 Medical Inspection in Schools. C. H. Keene, Minneapolis.

53. **Septic Thrombosis of the Sigmoid and Lateral Sinus.**—This is a case of double acute suppurative otitis media, complicated by mastoid abscess on one side, followed later by mastoid abscess and septic sinus thrombosis on the other side. Operations required: first on one mastoid, then on the other, with resection of the internal jugular and opening of the sinus. Complete recovery ensued.

Pennsylvania Medical Journal, Athens, Pa.

February

- 56 *Recent Progress in Medical Sociology. C. H. Miner, Wilkes-Barre.
- 57 *Relative Value of the Various Methods for the Determination of Functional Kidney Sufficiency. B. A. Thomas, Philadelphia.
- 58 Surgical Aspects of Infantile Spinal Paralysis. DeF. Willard, Philadelphia.
- 59 Temperature in Enlarged Tonsils and Adenoids. J. H. McCready, Pittsburg.
- 60 A Method of Removing the Faucial Tonsil, Using a Soft Silver-Wire Snare. A. A. MacLachlan, Pittsburg.
- 61 The Tonsil and the Singer. M. D. Ritchie, Pittsburg.
- 62 Indications for Removal of the Faucial Tonsils, and Dangers Connected with This Procedure. C. C. Sandels, Pittsburg.
- 63 *Treatment of Croupous Pneumonia. G. W. Norris, Philadelphia.
- 64 *Public and Private Aspects of the Pneumonia Question. W. C. White, Pittsburg.
- 65 A Case of Progressive Universal Pneumonia with Recovery, Presenting Some Very Unusual Features. W. H. Mercur, Pittsburg.
- 66 The Business Career of the Physician and Some Suggestions as to Safe Investments. L. Ott, Philadelphia.

56. Abstracted in THE JOURNAL, Oct. 29, 1910, p. 1580.

57. Abstracted in THE JOURNAL, Nov. 19, 1910, p. 1838.

63 and 64. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1671

Monthly Cyclopedia and Medical Bulletin, Philadelphia

February

- 67 Acromegaly: Pierre Marie's Disease. P. E. Launois and M. H. Cesbron, Paris.
- 68 *Should the Pharmacopeia Contain Only Useful and Efficient Drugs? N. S. Davis, Chicago.
- 69 *What Constitutes a Useful Drug, and Shall the Preparations of a Useful Drug Be Limited to One or Two? J. M. Anders, Philadelphia.
- 70 *Revision of the United States Pharmacopeia. J. P. Remington, Philadelphia.
- 71 What Is the Attitude of the Medical Profession Toward Osteopathy? J. M. Taylor, Philadelphia.
- 72 Acne Rosacea and the Sebaceous Glands. J. C. Rommel, Philadelphia.
- 73 Anesthesia from the Anesthetist's Standpoint. H. W. Dingman, Grand Rapids, Mich.
- 74 *Galactagogue Action of the Thymus, Corpus Luteum, and the Pineal Body. I. Ott and J. C. Scott, Philadelphia.

68 and 70. Abstracted in THE JOURNAL, May 28, 1910, p. 1812.

69. **What Constitutes a Useful Drug?**—According to Anders, a valuable drug is: (1) One that has a definite physiologic action, which is applicable to the relief of a disordered physiologic process; (2) one that by repeated careful clinical observations has been found to be followed in the majority of instances by a definite clinical result, care being taken to exclude the influence of accessory circumstances; and (3) one that is used for the purpose of diluting a substance of too great concentration or making palatable an otherwise disagreeable remedy. In accordance with this definition, it has seemed to Anders that the following, among other agents, should be omitted from the official remedies to be found in the U. S. Pharmacopeia: Anthemis, berberis, calamus, calendula, cassia fistula, chimaphila, chirata, chondrus, cypripedium, eriodictyon, eugenol, eupatorium, fluidextractum berberidis, fluidextractum calami, fluidextractum chimaphilæ, fluidextractum chiratæ, fluidextractum cypripedii, fluidextractum eriodictyi, fluidextractum eupatorii, fluidextractum frangulæ, fluidextractum geranii, fluidextractum grindeliæ, fluidextractum lappæ, fluidextractum matico, fluidextractum mezerei, fluidextractum rubi, fluidextractum sabinae, fluidextractum staphisagriae, fluidextractum tritici, fluidextractum viburni opuli, frangula, geranium, gossypii cortex, gossypium purificatum, granatum, grindelia, hedeoma, lappa, manna, marubium, mastiche, matico, matricaria, mezereum, myristica, oleum betulae, oleum coriandri, oleum hedeomæ, oleum myristicæ, pilulae aloes et mastiches, pimenta, prunum, rubus, sabina, safrolum, staphisafria, styrax, tinctura calendulae, triticum, ulmus, viburnum opulus, xanthoxylum and zea. On the other hand, among unofficial substances that he thinks might be advantageously added to the U. S. Pharmacopeia are diacetylmorphin and silver vitellin.

74. **The Galactagogue Action of the Thymus.**—In experiments on the goat with the glands containing internal secretions, Ott and Scott found that the thymus and corpus luteum increased the quantity of milk fourfold in five minutes. The ovary minus corpus luteum had no effect. Infundibulin is still the most powerful galactagogue, increasing the secretion of the milk one hundredfold. The amount of butter fat was about the same in the augmented secretion by thymus, corpus luteum and infundibulin, though occasionally it was increased. Intravenous injection of this body increases the secretion of milk eightfold. The pineal gland, as in previous experiments, was rubbed with distilled water and filtered. Normal saline solution, according to Biedl, has been shown to increase the secretion of milk.

American Journal of Urology, New York

January

- 75 The Normal and Pathologic Posterior Urethra and Neck of the Bladder. L. Buerger, New York.
- 76 Technic of the Hyperemic Treatment of the Urethra by Hot Sounds. M. Porosz, Budapest, Hungary.
- 77 Roentgenologic Examinations of the Kidneys. A. Holding, Albany, N. Y.
- 78 Treatment of Acute Gonorrheal Epididymitis. J. C. Spencer, San Francisco.
- 79 Position Drainage in Suprapubic Prostatectomy. H. J. Scherck, St. Louis.

Journal of the Missouri State Medical Association, St. Louis

February

- 80 Sixteen Syphilitic Patients Treated with Salvarsan. M. F. Engman, W. H. Mook and J. W. Marchildon, St. Louis.
- 81 *Keeping Track of Sponges. T. F. Lockwood, Butler.
- 82 Tuberculin Therapy. G. C. Crandall, St. Louis.

- 83 A Plea for the Merit System in the Selection of Officers and Employees for the State Hospitals of Missouri. M. A. Bliss, St. Louis.
- 84 Surgical Treatment of Exophthalmic Goiter. W. Bartlett and W. P. Glennon, St. Louis.
- 85 Examination of Children. H. S. Marsh, Tipton.
- 86 Dedication of the Barnard Free Skin and Cancer Hospital, St. Louis. W. E. Fischel and C. H. Huttig, St. Louis.

81. **Keeping Track of Sponges.**—The plan outlined by Lockwood, briefly, is as follows: In making gauze sponges, have a numeral sewed in colored silk or stamped with indelible ink, of a harmless character, in one corner of each sponge. This renders the figures indestructible in sterilizing the sponge. Have three packages of sponges arranged as follows: first package must contain small sponges, fifteen in all, numerals running from 1 to 15. This completes the first series and the package is to be labeled A 15. The letter A designates the size of sponges contained in the package and the numeral the number it contains. The second series must be a size larger than the first, running from 1 to 10, labeled thus: B 10. Third series is still larger than B, running from 1 to 5, labeled C 5. This package should contain five large sponges or napkins used both for absorbing sponges and viscera towels in abdominal sections. Have sponges made uniformly, each package maintaining a regulation size. The letter on the package indicates the size of sponges contained therein.

When the operation is finished, whether minor or major, count out the sponges by actual notation and if any number be lacking to complete the restored series, never cease searching until the missing number is found. If one or more packages of sponges are used in an operation it is as easy to complete the count in several series as it is in a single series, except that it takes more time. If all the sponges are not used in any one package in a given operation, count out the unused sponges along with the rest to complete the full number in that particular series. While this may seem strenuous and an undue precaution imposed on the surgeon, yet Lockwood believes that such methods would completely avert the possibility of leaving sponges and other materials in the abdominal cavity. A similar numbering plan is suggested for instruments.

Journal of the Kansas Medical Society, Kansas City

February

- 87 Medical Inspection of School Children. H. N. Moses, Salina.
- 88 Cancer of the Uterus. O. D. Walker, Salina.
- 89 Diagnosis of Diseases of the Nervous System. O. S. Hubbard, Parsons.
- 90 The Diagnosis and Treatment of Submucous Fibroid. A. Smith, Parsons.
- 91 Medical Jurisprudence. W. H. Clark, Hoxie.
- 92 Drug Reform. L. E. Sayre, Lawrence.
- 93 A Case of Gangrenous Stomatitis Probably Caused by the Bacillus Necrophorus. F. Campbell and F. W. Shaw, Kansas City.

Archives of Internal Medicine, Chicago

February

- 94 *Diagnostic Value of the Orthodiagram in Heart Disease. J. G. Van Zwaluwenburg and L. F. Warren, Ann Arbor, Mich.
- 95 *Studies of Malaria in Panama. Treatment of Blackwater Fever. W. Brem, Cristobal, Canal Zone.
- 96 *Meralgia Paresthetica Due to Pressure of the Corset. J. L. Miller, Chicago.
- 97 *Energy Metabolism of Mother and Child Just Before and Just After Birth. T. M. Carpenter, Boston, and J. R. Murlin, New York.
- 98 *The Ameboid Activity of Megaloblasts. W. S. Thayer, Baltimore.
- 99 *Function of the Sino-Auricular Node. A. E. Cohn and L. Kessel, New York.
- 100 *Biology of and Immunity Against the Bacillus of Leprosy. C. W. Duval and F. B. Gurd, New Orleans.
- 101 A Blood Crisis Occurring with Primary Sarcoma of the Stomach. L. H. Briggs, Oakland, Cal.
- 102 *Technic of the Cambridge Reaction and of the Substance Giving Rise to the So-Called Typical Crystals. J. C. Roper and R. G. Stillman, New York.
- 103 Allergy. C. E. Von Pirquet, Baltimore.

94. **The Orthodiagram in Heart Disease.**—After having examined sixty patients Van Zwaluwenburg and Warren believe that they are justified in the conclusion that an abnormal index is an early evidence of the increase in size of one or more chambers of the heart and may occur before such increase can be demonstrated by other means; that a decrease in the index results from left ventricular hypertrophy and dilatation, and an increase indicates a dilatation of the auricles with or without hypertrophy of the right ventricle. In com-

binations of these two antagonistic factors the index will depend on the predominance of the one or the other. The wide variation shown in valvular diseases should make the index valuable in the diagnosis of doubtful or combined lesions and they hope that the smaller fluctuations found associated with renal conditions may sometime be of diagnostic and prognostic value.

95. This paper was referred to in an editorial on blackwater fever in THE JOURNAL, Feb. 18, 1911, p. 514.

96. **Meralgia Paresthetica.**—In Miller's case, a circumscribed area of tenderness was located below and slightly outward from the anterior superior spine of the ilium; surrounding this was an ill-defined area of hyperesthesia; no analgesia, anesthesia or thermalgesia. In examining to determine if pressure of the clothing could be responsible for the trouble, it was noted that the lower edge of the corset hooked over the anterior superior spine, pressing into the thigh so that when standing erect it was with difficulty that the finger could be introduced between the corset and the thigh. Following instructions, the patient cut out a portion of the corset over this region. Within a few days relief was marked, and after the lapse of ten days the attacks of pain entirely disappeared, only slight numbness remaining. The woman returned to her work and reported three months later that, except for slight numbness, she considered herself cured. It was suggested that she purchase a new corset of the same style as that previously worn. After wearing this a few days, the pain again recurred, and the patient of her own accord cut out a piece of the corset as before, the pain promptly disappeared and now after the lapse of five months she complains only of slight numbness.

97. **Energy Metabolism of Mother and Child.**—In agreement with results previously obtained on the dog, Carpenter and Murlin find that the curve of total energy production of mother and child suffers no deflection at birth. The extra metabolism of the pregnant woman at the culmination of pregnancy, due in part to the accessory structure as well as to the fetus, is just equaled by the extra metabolism set up in the new-born child by exposure of its body to the outside world, and in the mother by activity of the mammary glands, etc. The energy metabolism, expressed per unit of weight, of the pregnant woman is about 7 per cent. less than that of the same woman newly delivered, and about 4 per cent. more than that of women in complete sexual rest. Expressed per unit of surface ($12.3\sqrt{W^2}$) the energy metabolism of the pregnant woman is specifically higher than that of women in complete sexual rest, probably because of a higher metabolism in the uterus and because of more rapid conduction of heat through the abdominal wall. In the newly delivered and nursing mother the metabolism is likewise higher per unit of surface than that of either the pregnant or normal woman. This is probably due in part to the activity of the mammary glands and in part to the dynamic action of protein liberated by the involution processes. The energy metabolism of the new-born child expressed per unit of weight and found by subtracting the metabolism of mother alone from that of mother and child together, is two and a half times that of the mother. Expressed per unit of surface (same formula) the energy metabolism of the new-born child is not greater than that of the nursing mother, but is higher than that of a woman in complete sexual rest.

98. **Ameboid Activity of Megaloblasts.**—In the study of the blood in a case of Addisonian anemia of a chronic course, Thayer observed characteristic ameboid movements in a megaloblast. This observation is apparently the first of this nature. This megaloblast showed typical ameboid movements. Small round pseudopodia were projected into which the colored protoplasm flowed in the same manner seen with the ordinary intestinal amebas. Slight changes in shape occurred at times in the nucleus. The movements of the cell were marked, strikingly like those in leukocytes, and entirely unlike the gradual changes of shape sometimes seen in red blood-corpuscles in the fresh specimen. The pseudopodia that projected were exactly like those seen in the movements of a polymorphonuclear leukocyte; that is, on the edge of the

cell there appeared sometimes very small round buds, several at a time, which coalesce and form larger processes. The absolute homogeneity of the protoplasm did not allow Thayer to observe the rolling motion so clearly as in the case of *Amaba coli* or a leukocyte containing granules. At times, however, the movement was really rather active. Thayer concludes that in the early stage of development represented by the megaloblast, the red blood-corpuscle is, probably, a cell with powers of active progression.

99. Function of the Sino-Auricular Node.—The experiments reported by Cohn and Kessel were done on the excised hearts of small dogs, which had been perfused with Locke's solution. The plan differed from the other series of experiments, in that, first, an attempt was made to excise only the known node-bearing area, and, second, to show that even multiple incisions did not influence the rate (except to accelerate it), while a final incision which cut away the window that had been made on three sides, in ten of sixteen experiments did successfully cause the stoppage of the entire heart. In two the stoppage is not noted in the protocol, though the rates fell from 114 to 81.9 in one, and from 121.5 to 63 in another. In three others the node is probably not excised, and in a fourth final incision was not made. The experiments gave a fairly uniform result. The authors conclude that normal impulse formation takes place and normal rate is produced in the sino-auricular node.

100. Bacillus of Leprosy.—Pure cultures of *B. lepræ* have been obtained by Duval and Gurd directly from the infested leprous tissue on a variety of special media including tryptophan and glycerinated blood-agar without first growing them in the presence of amebas and their symbiotics. From two cases of leprosy they have cultivated in pure growth the specific organism directly from the tissues on Novy-McNeal rabbit blood-agar to which 1 per cent. glycerin had been added. As a rule, multiplication of *B. lepræ* on artificial medium takes place slowly, but once the growth has started it can be readily accelerated by frequent transplantation. They have succeeded in cultivating *B. lepræ* from the cutaneous nodules in eight cases of leprosy, two cases of nasal discharge, and from the experimental lesion in a number of monkeys and white and Japanese dancing mice. That the cultures are leprosy bacilli, and not some other acid-fast species, has been definitely proved by cultural and animal tests. Their experimental study on the virulence and viability of leprosy bacilli shows the necessity of early diagnosis and the need of strict segregation of certain types of the disease. The length of time *B. lepræ* will live and retain its infectiousness outside the body indicates plainly the risk to a community in allowing leper patients at large, in particular those who have open lesions. Especially dangerous from the standpoint of source of infection are the patients discharging the bacilli in the secretions from the nasal mucous membrane. These patients are a constant menace to those with whom they associate because of the possibility of indirect transmission of the bacilli that are unconsciously deposited on articles about the household where the leper resides. The mere fact that the organism lives for so long a time outside of the animal body may, the authors believe, explain why the disease continually reappears in households that have harbored a leper. The bacilli escaping from the infected individual, who for months may not be aware of his malady, are a constant menace to others of the household or to subsequent tenants, even though it be years after the direct source of infection has been removed.

The animal experiments do not tend to support the view that leprosy may reside for years in the human body before manifesting any outward signs of the disease. Direct inoculation from man to man may occur, but it is the exception. On the other hand, in the light of present knowledge the indirect evidence of transmission is by far the more significant. Their investigations also confirm the belief that the mucous membrane of the nasal pharynx is the port through which the bacilli gain entrance to the body, as well as the chief source from which infection spreads. The results of animal experimentations demonstrate the fact that direct communication of the disease may take place from individual to individual

without the presence of the bed-bug or other parasites as intermediate hosts. In the examination of blood from patients suffering from leprosy the serum has been shown to contain specific antibodies of different kinds against certain constituents of the *B. lepræ*. In addition to the presence of specific bodies, they have demonstrated that complement is present in normal quantities. Agglutinins are present, though not in very large amounts. The opsonic content is probably affected at different stages of the disease, but with reference to the activity of this body their researches have so far not proved conclusive.

102. Technic of the Cammidge Reaction.—That the "C" reaction proposed by Cammidge, for the demonstration of a characteristic substance in the urine of patients suffering from diseases of the pancreas, does not rest on a sound scientific basis, is the claim made by Roper and Stillman, as not all the glycuronic acid is removed in every instance by the technic of this reaction. The formation of the typical crystals is due to the presence of glycuronic acid. As this substance is present in the urine of persons in normal health, and is increased in amount in many conditions in no way associated with disease of the pancreas, the demonstration of these so-called typical crystals can have no diagnostic value.

American Journal Orthopedic Surgery, Philadelphia

February

- 104 *Osteochondritis Dissecans: Its Nature and Relation to Formation of Joint Mice. A. H. Freiberg and P. G. Woolley, Cincinnati.
- 105 *Relaxation of the Annular Ligament of the Ankle-Joint as a Cause of Weak and Flat Foot. J. T. Rugh, Philadelphia.
- 106 *Osteophytes of the Os Calcis. J. D. Griffith, Kansas City, Mo.
- 107 *Operation for the Relief of Anterior Metatarsalgia, Including Morton's Disease. A. M. Forbes, Montreal.
- 108 *Treatment of Flat-Foot. E. H. Bradford, Boston.
- 109 Vaccines in Operative Treatment of Tuberculous Joints. W. W. Plummer, Buffalo, N. Y.
- 110 *Uses and Limitations of Vaccine Therapy in the Management of Arthritis. C. F. Painter, Boston.
- 111 *Value of Tuberculin in Tuberculous Joint Diseases. J. Ridlon, Chicago.
- 112 Antogenous Vaccines in the Hospital for Ruptured and Crippled. V. P. Gibney and G. E. Bennett, Washington, D. C.
- 113 Operation for Treatment of Anterior Dislocation of the Head of the Radius. G. G. Davis, Philadelphia.
- 114 Trigger-Finger. F. J. Cotton, Boston.
- 115 The 1909 Epidemic of Acute Anterior Poliomyelitis in Nebraska. H. W. Orr, Lincoln, Neb.
- 116 Juxta-Epiphyseal Fracture of the Upper End of Femur. Importance of the Use of Position in Its Treatment. F. H. Albee, New York.

104 to 108, 110 and 111. Abstracted in THE JOURNAL, July 2, 1910, pp. 49, 50 and 51.

Old Dominion Journal of Medicine and Surgery, Richmond

February

- 117 The Need of More Practical Examinations by State Boards of Registration in Medicine. R. C. Cabot, Boston.
- 118 *Medical Treatment of Pneumonia. A. Newlin, Philadelphia.
- 119 Chronic Diarrhea: Diagnosis and Treatment. G. A. Ezekiel, Richmond.
- 120 *New Facts Concerning Poliomyelitis—Its Etiology, Early Diagnosis and Treatment. T. A. Williams, Washington, D. C.

118. Abstracted in THE JOURNAL, Feb. 4, 1911, p. 375.

120. Also published in the *Journal of the South Carolina Medical Association*, November, 1910; *Monthly Cyclopedia and Medical Bulletin*, November, 1910, and the *Medical Press and Circular*, Dec. 14, 1910.

Virginia Medical Semi-Monthly, Richmond

February 24

- 121 Surgical Treatment of Anasarca Due to Kidney Disease. G. P. LaRoque, Richmond.
- 122 Modification of Mothers' Milk. G. Baughmann, Richmond.
- 123 Care and Treatment of Crippled Children. R. T. Taylor, Baltimore.
- 124 Physiologic Action of Certain Electric Currents. C. M. Hazen, Richmond.
- 125 Ignorance. L. W. Ely, Denver.
- 126 A Plea for the Trained Nurse as Anesthetist. A. L. Bruton, Norfolk.

Long Island Medical Journal, Brooklyn, N. Y.

February

- 127 *Diseases of the Stomach and Duodenum from a Surgical Standpoint. W. J. Mayo, Rochester, Minn.
- 128 Diagnosis and Treatment of Hyperthyroidism. A. T. Bristow, Brooklyn.
- 129 American Surgery. L. S. Pileher, Brooklyn.
- 130 The Use of Salvarsan. J. M. Winfield, Brooklyn.

127. Also published in the *New York State Journal of Medicine*, January, 1911, and the *St. Paul Medical Journal*, January, 1911.

Atlanta Journal-Record of Medicine

February

- 131 Transfusion of Blood. H. P. Cole, Mobile, Ala.
- 132 Chronic Appendicitis. W. C. Cook, Columbus, Ga.
- 133 A Case of Cardiospasm. C. A. Dexter, Columbus, Ga.
- 134 Diphtheritic Paralysis. Syphilis of Nasal Passages and Ear. Gunshot Wound of Eye. T. E. Mitchell, Columbus, Ga.
- 135 Pathogenesis of Tabes Dorsalis. T. A. Williams, Washington, D. C.

Albany Medical Annals

February

- 136 Rural Hygiene. A. W. Freeman, Richmond, Va.
- 137 Quarantine, Isolation and Disinfection. W. A. Howe, New York.
- 138 The Tuberculosis Campaign. C. W. Fetherolf, New York.
- 139 Public Health and the Dental Profession. W. G. Ebersole, Cleveland.

Detroit Medical Journal

February

- 140 Iodin Sterilization of Skin. G. H. Palmerlee, Detroit.
- 141 *The Medical Profession Must Change Its Tactics. W. J. Robinson, New York.
- 142 Value and Significance of the Wassermann Test. R. G. Owen, Detroit.
- 143 Have We a New Mind Cure Based on Science? S. Bell, Detroit.
- 144 Influence of Glandular Pharyngeal Tissue in the Causation of Rheumatism and Endocarditis. B. R. Shurly, Detroit.
- 145 Therapeutics of the Circulatory System. W. J. Wilson, Jr., Detroit.

141. Published in THE JOURNAL, Jan. 14, 1911.

Western Canada Medical Journal, Winnipeg

February

- 146 Ureteral Calculus. A. Paling, Winnipeg, Man.
- 147 A Case of Lipoma of the Scrotum. F. Lachance, Winnipeg, Man.

American Medicine, New York

February

- 148 The West Coast of Norway for Health and Recreation. H. L. Shively, New York.
- 149 Legal Obligations of Physicians. J. I. Green, New York.
- 150 A Case of Hysterical Hemiplegia Due to Autosuggestion. C. W. Burr, Philadelphia.
- 151 Asthma Relieved by an Intranasal Operation. C. J. Imperatori, New York.
- 152 Studies in Gynecology. F. A. Rhodes, Pittsburg.
- 153 Feet. R. G. Moore, New York.
- 154 Unusual Effects from Gunshot Wounds of the Skull. H. Crutcher, Roswell, N. Mex.
- 155 Physiologic vs. Anatomic Results Following Gynecologic Operations. G. W. Jarman, New York.
- 156 Brief Summary of Arsenic Treatment of Syphilis Antedating Salvarsan. E. Ehlers, Copenhagen.

Medical Fortnightly, St. Louis

February

- 157 Clinical Aspects of Urogenital Tuberculosis. L. W. Bremerman, Chicago.
- 158 Gases in Their Relation to the Body. A. L. Benedict, Buffalo.
- 159 Nosology. C. F. Wahrer, Fort Madison, Iowa.

Vermont Medical Monthly, Burlington

February

- 160 An Epidemic of Diphtheria at Vermont Industrial School. G. F. B. Willard, Vergennes, and E. H. Buttles, Burlington.
- 161 Paranoia. H. D. Bone, Waterbury.
- 162 Purpura Hemorrhagica. C. W. Peck, Brandon.

Woman's Medical Journal, Cincinnati

February

- 163 First Aid to the Injured Eye. M. Buchanan, Philadelphia.
- 164 Medical Experiences in the Philippine Islands. M. S. Bailey, Manila.
- 165 Physiology and Chemistry of Digestion. G. Lusk, New York.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 25

- 1 Differential Diagnosis in Cases of Albuminuria. H. French.
- 2 *Digitalis in Heart Disease and Dropsy with Fibrillation of the Auricles. J. D. Windle.
- 3 *Two Cases of Death from Postanesthetic Acid Intoxication. G. Brown.
- 4 Radium in Cancer. C. J. Morton.
- 5 *Curative Influence of Roentgen Rays in Malaria. B. Skinner and H. W. Carson.
- 6 Thyroid Extract in Carcinoma. E. H. Jones.
- 7 "Sensory Tetany." "Vasomotor Tetany." Acroparesthesia, and Raynaud's Symptoms. F. P. Weber.
- 8 *Operations for Calculus in the Male Bladder. W. F. Haslam.

2. Digitalis in Heart Disease.—Dropsy in cases of heart disease, in which the auricles are in a state of "fibrillation" and functionally inactive, Windle says, is present in a large proportion of cases of severe heart failure, whatever the nature of the underlying lesion may be. He has found the benefit derived from the administration of digitalis in cases of severe heart failure variable, even when classical indications for its use are present. In some patients improvement is rapid and maintained—the heart decreases in size, the edema quickly disappears; its power for good is limited—improvement occurs to a certain extent, and then comes to a standstill; again, particularly in cases of mitral stenosis with regular pulse, and those resulting from arterial disease, digitalis is often impotent or even harmful—the heart continues to dilate, and dropsy increases under its use. The mode of action of digitalis in fibrillation is as yet imperfectly understood. There are good reasons for the supposition that the drug acts by depressing the conductivity of the *a-v* bundle; its full effect is to block the passage of stimuli from auricle to ventricle; cut off from the influence of the auricle, the ventricle beats an independent rhythm. However this may be, the fact remains that the character of the heart's action under the full influence of digitalis in this condition is comparable in every way to that occurring in complete heart-block. The rhythm of the heart at times becomes regular, with a rate of 40 or thereabouts; further, a frequent effect of continued full doses is the occurrence of "coupled heart beats." The weaker beat of this coupled rhythm, which occurs with notable regularity, arises in response to a ventricular stimulus, and it is supposed that a condition of complete heart-block is present.

While the majority of cases of fibrillation respond in a marked manner to digitalis, it is found, as a matter of experience, that reaction varies under different circumstance of etiology and rate of pulse. Cases which respond most certainly and rapidly are those resulting from old rheumatic lesions, in which the rate of pulse is not greatly above normal, and symptoms of failure arise gradually. There is another type of case, also of rheumatic origin, in which fibrillation occurs suddenly, and heart failure soon becomes extreme; in these cases the pulse is usually rapid and reaction is uncertain. Fibrillation not uncommonly ensues in the course of arteriocardiosclerosis; generally the reaction is slight or absent, occasionally the heart slows to some extent, but improvement in the general symptoms is not proportionate. Exceptionally typical reaction occurs. Generally speaking, Windle says, improvement in cases of this kind is proportionate to the degree of slowing of the heart; and digitalis must be given in sufficient doses to reduce the rate at least to the normal, and in most cases considerably lower, to get the best results. On commencing treatment, 15 minims of the tincture should be given four times a day until the pulse slows to from fifty to sixty a minute, which it will do, as a rule, within a week. In most patients the improvement with this rate of pulse is maintained, when the same dose should be given three times a day and its effect watched. In others the case hangs fire; the drug should then be pushed until its full physiologic effect on the pulse is produced. The evidence of this is either a regular slowing of the heart to about forty beats a minute, or the occurrence of coupled heart beats. A pulse of fifty or over is always characteristically irregular; when the rate falls below fifty, it exceptionally becomes regular, the number of heart beats being the same as the pulse. More frequently, the full effect is shown by the occurrence of coupled beats; these are readily recognized on auscultation—two heart beats follow quickly on each other, succeeded by a long pause, the first beat is strong, the second short and feeble.

From a large number of observations, Windle has found that the total amount of tincture of digitalis required to produce runs of coupled beats or regular slowing is, on the average, 450 minims—that is, in about ten days with doses of 15 minims. Digitalis should be stopped when long runs of coupled heart beats or regular slowing occur; no further good can follow its continued use; the full effect is transient; within two or three days the pulse quickens and is again

characteristically irregular. The drug should now be given again in increasing doses of from 10 to 15 minims, three times a day, until the pulse slows to a rate approximating that at which the double beats previously occurred; it is with this rate of pulse that the patient will generally be at his best. The guide for dosage during treatment is the effect on the heart, and this can be determined by auscultation, the rate and rhythm of the beats furnishing the necessary indications.

3. Death from Postanesthetic Acid Intoxication.—Since the occurrence of these cases reported by Brown, the urine of every child in the Liverpool Royal Infirmary is tested for acetone, on admission; if this be present the operation is delayed, if possible, till the acetone has been eliminated, and treatment is continued after the operation. Inasmuch as an individual deprived of carbohydrates excretes acetone and diacetic acid, but the exhibition of carbohydrates rapidly causes the disappearance of these substances, glucose is employed as a prophylactic. All patients admitted to surgical wards for operation (usually admitted 2:30 p. m.) receive (1) glucose 1 dram, at 4, 6 and 8 o'clock on the day of admission and at 4, 6 and 8 o'clock on the following morning. If the child is 8 years or older, 2 drams are given. (2) Sodium bicarbonate, in the strength of 1 dram to 4 ounces of water, is given instead of plain "wash-out" before operation. If acetone is present in the urine on admission: (1) glucose is continued at two-hourly intervals during the day-time; (2) the sodium bicarbonate is given every two hours during the day and every four hours at night. Liquid glucose is more satisfactory than solid, and children take it as well as a sweet. Sodium bicarbonate solution is frequently taken by children only after a struggle. Since the initiation of this measure no serious symptoms have developed in any patient; but the treatment has not been in force long enough to give a reliable comparison, though the post-anesthetic vomiting has been less.

5. Roentgen Rays in Malaria.—The effect of heat applied over the splenic area in relieving the pain attendant on an attack of malarial fever gave Skinner and Carson the idea that the Roentgen rays also might have a therapeutic action as the immediate effect of their similar application. That these conjectures were not without base is evidenced by the eleven cases reported. The application of Roentgen rays in cases of malarial fever relieves splenic pain and reduces recent engorgement; the temperature falls and does not usually rise again, and recovery is not attended by the anemia usually present in patients treated with quinin. The authors have not had to fall back on quinin in patients treated by the Roentgen rays, while they have had patients who resisted quinin and yielded promptly to the rays (quinin being discontinued).

8. Also published in the *Lancet*, Feb. 25, 1911.

Lancet, London

February 25

- 9 *Immunity Reaction in Diagnosis, Especially of Tuberculosis and Syphilis. W. d'E. Emery.
- 10 *Operations for Calculus in the Male Bladder. W. F. Haslam.
- 11 *Treatment of Pneumonia. D. B. Lees.
- 12 Education of the Deaf. M. Yearsley.
- 13 Examination, with Negative Results, of the Central Nervous System in a Case of Cured Human Trypanosomiasis. F. W. Mott.
- 14 Salvarsan in Syphilis. C. F. Marshall.
- 15 The Physiology and Pathology of the Assimilation of Albumin. S. A. Arany.
- 16 *A Case of So-Called Insusceptibility to Vaccination. J. D. Staple.

9. Immunity Reaction in Diagnosis.—Quantitative estimations of the strength of a serum in antibodies, as estimated by the Bordet-Gengou reaction, are not, in Emery's opinion, applicable in all cases, at least so far as tuberculosis is concerned. What it may be expected to give is a measure of the amount of tuberculous substances in the serum, which in association with the clinical facts, may have great value in diagnosis, and perhaps also in prognosis and treatment. He examined thirty-four individuals with diseases other than tuberculosis and healthy persons. The average complement absorption time was 18.1 minutes, the maximum 35 minutes,

and the minimum $2\frac{1}{2}$; this shortened time was present in but three persons who were not thought to be tuberculous. In tuberculous individuals the most usual thing is to find the absorption time greatly reduced. In Emery's cases the average time was 7.4 minutes, and times of less than $2\frac{1}{2}$ minutes were found in 25 out of 56 serums examined, or 44.6 per cent. Thus, he says, if we regard an absorption period of $2\frac{1}{2}$ minutes as affording the criterion for the presence or absence of the test, we find it in 44.6 per cent. of the tuberculous and 8.8 per cent. of non-tuberculous individuals. If we take 5 minutes, we find it in 66 and 11.7 per cent., respectively. Further, tuberculous persons do not always give a shortened absorption period. Very short absorption times are usually encountered in chronic cases in which the patients are doing well, and in quite general terms are, in definite tuberculosis, longer in cases in which the patients are progressing rapidly. The process, therefore, has some value in giving a clue to the prognosis. But it is very far from being absolute. Thus it appears that a prolonged absorption time may be due (1) to the presence of antibodies in minute amounts only (this occurs in health or in tuberculosis, and as a rough general rule indicates a progressive disease); and (2) to the presence of this inhibiting substance (this does not necessarily indicate a bad prognosis). Judging from the few cases in which Emery has been able to put the matter to the test, he concludes that a prolonged absorption time in a case of undoubted tuberculosis indicates a high degree of susceptibility to tuberculin, whether applied to the skin or injected; but a patient with a shortened time will also react.

10. Also published in the *British Medical Journal*, Feb. 25, 1911.

11. Treatment of Pneumonia.—Lees presents a review of well-known facts and does not offer anything new.

16. So-Called Insusceptibility to Vaccination.—The "one-mark vaccination" is strongly condemned by Staple. It is perfectly obvious, he says, that if a child is vaccinated in only one place there is less likelihood of the operation being successful than if it were performed in the orthodox number of places. Staple regrets that when a certificate of insusceptibility is filled up the practitioner is not required to certify that the child has been unsuccessfully vaccinated in three or four marks on three separate occasions.

Journal of Obstetrics and Gynecology of the British Empire, London

February

- 17 Indications for, and Technic of, Cesarean Section and Its Alternatives, in Women with Contracted Pelves, Who Have Been Long in Labor and Exposed to Septic Infection. A. Routh.
- 18 *An Experimental Study of the Anaphylactic Theory of the Toxemia of Pregnancy. R. W. Johnstone.
- 19 Acute Torsion of Normal Ovaries and Fallopian Tubes with Hematosalpinx. J. N. Stark.
- 20 Three Cases of Cesarean Section in Non-Contracted Pelvis. H. Simson.
- 21 Keratinizing Adeno-Carcinoma of the Uterus. Miss Ivens.
- 22 Adenomyoma in a Tuberculous Fallopian Tube. Miss Ivens.
- 23 Chorion-Epithelioma of the Uterus Preceded by Vesicular Mole and Accompanied by Unusual Nervous Symptoms. Miss Ivens.

18. Placental Anaphylaxis.—The idea underlying Johnstone's theory of placental anaphylaxis was that some alien protein might pass from the fetus or placenta into the maternal circulation, and supersensitize the mother; and that a subsequent transference of the same substance after a suitable interval might account for the onset of convulsions and other symptoms. His experiments were confined to the use of the placenta only. They fall into five groups. In the first group he used an extract of placenta from an eclamptic patient. In the second group he carried out similar experiments in twelve female rabbits with the juice of normal healthy placenta. In the third group, the conditions were made as realistic as possible, pregnant animals being injected with the juice of placenta from another of the same species. In the next two groups Johnstone used powdered placenta suspended in normal saline solution. Anaphylactic symptoms were obtained by the use of normal placenta juice in eight out of twelve rabbits. This indicates that human placenta juice contains

some complex protein body which is capable of acting as a toxin for other animals. No results followed the use of eclamptic placenta juice. So far as it goes, this may be taken to lend support to the view that the toxic element had passed out of the placenta into the patient's body. No result followed the use of extracts of animals of the same species. Finally, no results followed the use of powder of placenta, either human or of animals of the same species.

The question remains: Were such anaphylactic symptoms as were obtained, due to a placental toxin, or to the small quantity of blood-serum inevitably present? It is impossible to wash all the blood out of a placenta by any method yet devised—either the simple one employed in Johnstone's experiments, viz., washing the minced placenta in a muslin bag under running water, or the more elaborate, but not more effectual one, of injecting water into the umbilical vein immediately after birth. The results of these experiments, particularly the failure to confirm Anderson and Rosenau's results with homologous placental extract, in Johnstone's opinion appears to support the view that there is no evidence of anything of the nature of anaphylaxis, so far as we at present understand that subject, in the commoner manifestations of the toxemia of pregnancy.

Journal of Tropical Medicine and Hygiene, London

February 15

- 24 A Case of Sleeping Sickness Occurring in Northern Nigeria. D. Alexander.
25 Betanaphthol and Thymol as Anthelmintics. B. Nicol.

Clinical Journal, London

February 22

- 26 Common Gynecologic Affections. T. G. Stevens.
27 *Absence of Abdominal Respiratory Movement as an Indication of Pericarditis. W. E. Wynter.

27. **Absence of Abdominal Respiratory Movement an Indication of Pericarditis.**—The sign suggested by Wynter is inhibition of the action of the diaphragm, indicated by suppression of normal abdominal respiratory movement. In acute pericarditis, on the other hand, the cessation of phrenic action is bilateral and, consequently, absence of abdominal respiratory movement is as obvious as in abdominal disorders, though other abdominal manifestations, such as muscular rigidity and general tenderness, are lacking. The author says that when the front of the body is fully exposed, the stillness of the abdomen is very striking, suggesting peritonitis, unless, as sometimes happens, there is inspiratory recession, which might mislead unless the want of correspondence with the movement of the upper chest is noticed. The inertness of the diaphragm is not merely inferred, but by Roentgen-ray screen examination can be actually observed, the midriff mounting high into the thorax and exhibiting no contraction; in some instances there is an actual rising of a quarter of an inch with each inspiration. In one case the contents of the upper abdomen, such as the kidneys and opaque masses in the intestines, could be seen to participate in this upward respiratory movement. Concomitant and consequent phenomena are: a tendency to dilatation of the hollow abdominal organs, especially the stomach; collapse and loss of function in the lower lobes of the lung; slight upward displacement of the heart, and of the organs beneath and in contact with the diaphragm. Loss of abdominal movement, as a sign of pericarditis, is the more valuable in that it may precede and outlast the other indications and so afford grounds for anticipatory or retrospective diagnosis. The condition affords a reasonable explanation of the cyanosis and dyspnea so usual in the complaint, and of the upright position so commonly assumed by the patient, the former expressing the effect of respiration restricted to the function of the upper lobes of the lungs, and the latter pointing to an unconscious effort on the part of the patient to utilize the weight of the abdominal viscera to depress the passive diaphragm and enlarge the thoracic area. Restriction of abdominal movement is apparently more marked in fibrinous than in effusive pericarditis, movements being more productive of local irritation in the former than in the latter condition, as is the case in other serous sacs, such as the pleura and peritoneum.

Medical Press and Circular, London

February 22

- 28 Empyema. T. R. Whipple.
29 Salvarsan in Syphilis. W. D. O'Kelley.
30 *Surgical Aspect of Glycosuria and Diabetic Gangrene. C. A. Morton.
31 *Treatment of Heroinomania and Morphinomania. P. Duhem.
32 Two Cases of Abscess of the Liver Complicating Appendicitis. J. J. Clarke.

30. **Surgical Aspect of Glycosuria.**—Amputation for diabetic gangrene is favored by Morton, but he says that we ought to consider carefully in what cases of diabetic gangrene amputation is called for. If the area is small, and the gangrene is not spreading, he sees no reason why amputation should be done, unless the process of separation of the dead tissue is so tedious that the patient desires to have an operation which may hasten matters. If so, a thorough removal of sloughs may suffice; but if the gangrene is spreading, or is associated with great pain in the living margin of tissue, or there is pyrexia due to septic absorption from the gangrenous area, then the question of amputation must be considered seriously. If the most scrupulous care is taken as to antiseptic details, and spinal anesthesia is used, the risk of amputation should not be great. Morton reports three cases:

CASE 1.—Dry gangrene of the great toe, due to atheroma of the arteries associated with diabetes. S. C., aged 66, was admitted to the General Hospital in October, 1907, with dry gangrene of the great toe. The necrotic area in part separated, and was in part removed, but the gangrene spread to the next toes, and the neighboring part of the foot. No pulsation could be felt in either the posterior tibial or the dorsalis pedis artery in either foot, and the radials were thickened. The popliteal arteries could be felt pulsating on both sides. Glycosuria persisted during the six months the man was in the hospital, but considerably decreased on antidiabetic diet. Amputation was performed through the knee joint under spinal anesthesia which acted well. The popliteal artery was very rigid and thick, and the arteries of the amputated leg were found to be extensively affected by atheroma. The lumen of the posterior tibial was almost completely blocked, and that of the anterior was very small. Primary union occurred except at one minute point and the patient was in no way the worse for the operation.

CASE 2.—Moist gangrene of all the toes, of an inch of the foot close to them, and a large patch of gangrene extended down the sole almost to the heel. Amputation was performed successfully through the knee-joint under spinal anesthesia.

CASE 3.—Spreading moist gangrene of foot associated with perforating ulcers. Amputation through knee-joint was successful.

31. **Heroinomania and Morphinomania.**—Instead of attempting to wean the patient in five or six days, Duhem devotes two or three weeks or more to the suppression of injections. He encourages the elimination of toxic products, the disengagement of the glandular canals, and the renovation of the epithelial tissues by all possible means. He makes use of any symptomatic treatment for which there may be an indication.

Annales de Gynécologie et d'Obstétrique, Paris

February, XXXVIII, pp. 65-128

- 33 Retroperitoneal Cysts in or Around the Ovary. Three Cases. J. Vanvert and H. Paucot.
34 *Fibromas Complicating Pregnancy. J. Mouchotte.
35 Experimental Research on Starch-Producing and Starch-Digesting Activity of the Placenta. (Sur l'activité amylgénétique et amylolytique du placenta.) S. Delle Chiage.
36 Metabolism During Pregnancy. (Recherches sur les échanges organiques chez les femmes enceintes.) C. J. C. van Hoogenhuyze and A. Ten Doeschate. Commenced in No. 1.

34. **Fibromas Complicating Pregnancy.**—Recent discussions of this subject in French medical societies have shown that the pregnancy generally runs a normal course to term, notwithstanding the presence of the fibroma. Only when serious disturbances are threatening is it necessary to interfere. At the same time it is conceded that the disturbances must not be allowed to reach such a stage that operative measures are liable to come too late. Mouchotte's patient was pregnant for the first time at the age of 38. The uterus was found studded with fibromas. A large one was attached to the uterus only by a pedicle, seeming to belong to some other

organ, especially as a loop of intestine had become interposed between the uterus and the body of the big fibroma. The serious symptoms seemed to be characteristic of intermittent hydronephrosis, owing to the compression of the left ureter, sigmoid flexure and the iliac blood-vessels which complicated the picture. When the abdomen was opened, the general fibromatous degeneration of the uterus and the slight possibility of effectual hemostasis, induced Mouchotte to remove the entire uterus as the only safe procedure. He emphasizes in conclusion that the outcome with fibroma of the pregnant uterus depends less on the size of the tumor than on its location, the accidents being more or less serious according to the organs compressed by it.

Annales des Maladies des Org. Génito-Urinaires, Paris

February 1, XXIX, No. 3, pp. 193-288

- 37 *Operative Treatment of Calculus in the Ureter. Fabricante.
- 38 Endoscopic Discovery of Deformity in the Urethra. J. Chadzynski.
- 39 Catheters Knotted in the Urethra or Bladder. (Bougies nouées dans l'urètre ou dans la vessie.) O. Pasteau.
- 40 *Supernumerary Kidney. (Rein surnuméraire constaté pendant la vie.) A. Isaya.

37. **Calculus in Ureter.**—Fabricante advocates, as giving the best access, a transverse incision around the iliac crest, parallel to Poupart's ligament. In very favorable cases in women, the stone might be removed through the vagina.

40. **Supernumerary Kidney.**—Isaya's patient was a woman of 27 with recurring attacks of pain since childhood. A tumor was discovered which proved to be a third kidney. But all three kidneys were apparently normal, and the pains were remedied by fixation of the transverse colon which was found sagging. All symptoms ceased after the operation. Isaya reviews the few similar cases of supernumerary kidneys on record.

Archives Générales de Chirurgie, Paris

December, IV, No. 12, pp. 1211-1320

- 41 *Ambulatory Splint for Fractured Leg. (Traitement des fractures de jambe par la "marche directe.") G. Worms and P. Hamand.
 - 42 Ulceration of Jejunum After Gastro-Enterostomy. P. D. Wilkie.
 - 43 *Chloroform Accidents. E. Vidal. Commenced in No. 11.
 - 44 Large Fibroma of Upper Jaw. P. Maucalire.
- January, V, No. 1, pp. 1-116
- 45 *Inversion of the Vagina Following Hysterectomy. P. Guibal.
 - 46 Bone and Joint Complications of Malta Fever. D. Zeeas.
 - 47 *Drainage of Ascites into Subcutaneous Cellular Tissues. P. Maucalire.

41. **Ambulatory Treatment of Fractured Leg.**—Worms and Hamand have applied Delbet's walking splints in a number of cases of oblique fracture of the leg or Dupuytren's fracture, and describe here the good results in eight typical cases. They illustrate the technic; the principle is to support the leg by plaster splints from a point above the fracture close to the condyle above, and below just above the bulge of the malleoli. These points sustain the two rigid splints which support the leg in the place of the fractured bones, the weight of the body thus being transmitted from the upper end to the lower end of the leg, leaving the focus of the fracture in repose. All that is necessary is a splint of plaster on each side of the leg, with a horizontal plaster bandage wound around just below the knee and another at the ankle including the heel. The simplicity of the technic and the excellent outcome are extolled. They apply the apparatus immediately after the accident, especially with simple fracture permitting easy and rapid reduction. If the limb is already much swollen, it is better to wait and use other means for immobilization until the effusion has been absorbed. Even compound fractures can be treated by the ambulatory dressing, they assert, if asepsis can be assured and the patient is not allowed to walk on the limb except with great caution until after the soft parts have healed.

43. **Treatment of Chloroform Accidents.**—Vidal concludes from study of the literature and his own experience that the main point in treating chloroform accidents is to supply the heart with a non-toxic fluid. He thinks that artificial respiration will generally answer the purpose when the trouble is merely arrest of breathing. Oxygen is required only exceptionally, but if the heart has stopped beating he advises (1) exposing at once a vein close to the heart and removing 300

gm. of blood by pressure on the chest; the vessel is then ligated; (2) keeping up artificial respiration constantly; (3) then injecting slowly, toward the heart, through a needle inserted in an artery on the right side, from 80 to 100 gm. of tepid Locke's solution; (4) then waiting two minutes before doing anything else; (5) then squeezing the heart through the diaphragm, superficially and slowly, not over thirty times a minute, keeping this up for one minute then (6) waiting for two minutes; (7) giving another injection of Locke's solution (only 60 gm.) and resuming massage after the fluid has been in the heart for two minutes. This outline of treatment is the only logical method, he thinks, and the success that has been obtained with other methods, he is convinced, was due to the fact that unconsciously some of these principles were followed. His formula for Locke's solution is sodium chlorid, 9 gm.; calcium chlorid, 0.2 gm.; potassium chlorid, 0.2 gm.; sodium carbonate, 0.2 gm.; glucose, 1 gm., and distilled water, 1,000 c.c. The benefit from this intracardiac lavage has been instructively shown in some recent communications, he states, that of Depage reporting the instantaneous revival of the heart, which forty-five minutes of massage had been unable to accomplish. He warns against too hasty massage, as that would force the non-toxic fluid out of the heart. The aim is to save for the heart the whole benefit of its first effort.

45. **Prolapse of the Vagina.**—Guibal discusses means to prevent and remedy inversion of the vagina, especially after hysterectomy, giving the details of six cases on record with one from his own experience. In his case he was obliged to excise part of the vagina and restore the perineum which had been lacerated at the last childbirth, twenty-five years before. Three months after vaginal hysterectomy, the vagina became completely inverted. He gives the details of the complicated operation which restored approximately normal conditions.

47. **Dangers of Drainage of Ascites into the Subcutaneous Cellular Tissue.**—Maucalire has treated six patients by inserting a T drain, the vertical branch projecting into the pelvis while the horizontal branches extended in the subcutaneous tissue. This provided a means for the ascitic fluid to escape into the cellular tissue, but the outcome was not good. Four of the patients rapidly grew weaker and soon succumbed. Another seemed to bear the drainage without disturbances but succumbed to progressive cachexia. The sixth patient recovered; the ascites in this case was tuberculous and the laparotomy alone might have sufficed for the cure. He wore the drain for three months without inconvenience and the ascites did not recur. It is possible that in the four fatal cases the ascitic fluid accompanying the cirrhosis or cancer was so toxic that it injured the patient when reabsorbed. Possibly the outcome might have been better if a smaller drain had been used instead of the No. 15 or 16 Charrière that had been selected. Maucalire thinks that the possible toxicity of the ascitic fluid and the danger of grafting tuberculosis or cancer should compel caution in these efforts for autodrainage of ascites.

Archives des Maladies du Cœur, Etc., Paris

February, IV, No. 2, pp. 65-144

- 48 *Precordial Dulness in Heart Disease in Children. (Matité précordiale dans les cardiopathies infantiles.) P. Nobécourt and R. Voisin.
- 49 Purpuric Diathesis Revealed by Casual Trauma. (Purpura localisé de l'avant-bras.) H. Gougerot and H. Salin.
- 50 Gonococcus Endocarditis. (Endocardite infectieuse des sigmoïdes aortiques avec anévrysme perforant d'un sinus de Valsalva au cours d'un rhumatisme blennorrhagique. Ictère terminal.) F. Mouisset and J. Chalié.

48. **Dulness Over the Heart in Cardiac Disease in Children.**—Nobécourt and Voisin compare the percussion findings in thirty-six children with various cardiac defects; in two the trouble was congenital, in two others of tuberculous origin. In the latter cases the heart area was little if any increased, and soon subsided to less than the normal area. Necropsy disclosed the heart much atrophied. In twelve cases the trouble was an acute cardiopathy, and in the others a chronic condition. If the apex is found at the same point on repeated examinations, while the general area has diminished, adherence to the chest wall may be assumed. In the course of an acute heart affection, an increase in the size of the precordial dulness may indicate restriction of fluids, venesection,

digitalis or epinephrin. Strict repose should be enforced during convalescence as long as the heart area is unduly large. Reduction in the area of the dulness is one of the last signs of improvement under heart tonics. It is not necessary, they add, to percuss the entire heart; determination of the apex and of the point of intersection of the upper margin of the liver with the right margin of the cardiac dulness is all that is generally necessary. These points can be readily percussed and the variations in the horizontal diameter instructively determined.

Journal de Chirurgie, Paris

January, VI, No. 1, pp. 1-136

51 *Cheiloplasty. H. Morestin.

51. **Cheiloplasty.**—Morestin gives an illustrated description of a number of typical cases in which all or part of the upper and lower lip was restored, with a number of technical points learned from his experience.

Presse Médicale, Paris

February 11, XIX, No. 12, pp. 105-112

52 An Auto-Observation of an Auto-Operation for Inguinal Hernia Under Jonnesco's Spinal Anesthesia. A. Fzalcou.

53 Subacute Ependymitis with Hydrocephalus and Lesions Suggesting Syringomyelia. H. Claude, C. Vincent and J. Levy-Valensi.

February 15, No. 13, pp. 113-120

54 *Value of Tincture of Iodin for Antisepsis. P. Reclus.

54. **Tincture of Iodin and Antisepsis.**—Reclus congratulates the profession on the present vogue of tincture of iodine which he regards as the most easily managed of all antiseptics, the least dangerous and the most powerful. He cites a number of instances from his own experience to sustain this, calling attention in particular to the ideal functional outcome in injuries of the hands treated with the tincture of iodine. The skin heals supple, the joints are not at all stiff and the skin grows out to cover the bare bone when conditions permit it in the slightest. The outcome is almost equally good when the iodine is not applied until after signs of local inflammation and even of septicemia have developed. In one case the hand had been crushed by a keg holding 500 liters and two days had elapsed, the tissues putrefying, and signs of general infection were already installed before the tincture of iodine was applied, and yet functioning was restored, except for disarticulation of the forefinger, in a manner little short of miraculous. In another case, he says, he operated only by a sort of professional reflex action as the patient seemed moribund from fulminating gangrene from a scrotal tumor resulting from puncture of a hematocele by unskilled hands. Reclus made the incision with the actual cautery which lighted the gas in the focus; it burned with a blue light. He then cleared out the clots and gangrenous tissues and painted the walls of the enormous cavity with tincture of iodine. It was a surprise to find the man alive the next day; by the end of forty days the immense cavity had nearly healed and the man is now completely restored to health.

Revue de Chirurgie, Paris

February 10, XXXI, No. 2, pp. 145-280

55 *Operative Treatment of Typhoid Angiocholecystitis. E. Quénu.

56 Treatment of Skull Wounds on the Battle Field. (Du traitement des blessures du crâne dans les formations de l'avant.) Weitzel.

57 *Ultimate Outcome of Dislocation of the Shoulder. (Pronostic éloigné des luxations de l'épaule.) L. Imbert and G. Dugas.

58 Treatment of Arterial and Arteriovenous Hematomas. C. Monod and J. Vanverts. Commenced in No. 1.

55. **Operative Treatment of Typhoid Gall-Bladder Disease.**—Quénu published two years ago a work on this subject, reviewing forty-five operations that had been done on the gall-bladder during typhoid fever or convalescence therefrom. He here completes the list to date and tabulates the details of the sixty-seven operations. Only one of the patients recovered of the twelve treated by an incomplete operation, while thirty-three recovered of the forty treated by cholecystostomy and all but two of the ten with cholecystectomy. [The only cases cited from THE JOURNAL are those of Lavinder and Prince.] The general conclusion from this material is that cholecystostomy alone answers in nearly every case. Only when the gall-bladder tissue is too friable, or when there is perforation or ulceration, is its removal indicated.

57. **End-Results of Dislocation of the Shoulder.**—Imbert and Dugas have been investigating the present condition of fifteen patients, the only ones they have been able to trace to date out of eighty patients treated for dislocation of the shoulder in the last few years. Only four of the fifteen were found in a satisfactory condition—all the others complained of more or less disturbance in the use of the arm. The patients were between 30 and 70, but the four with a satisfactory outcome were between 34 and 58. Delay in reduction of the dislocation does not seem to be the decisive factor for the outcome; in six of the cases with the poorest ultimate outcome reduction had been done in one hour, the same day or the second day. The reduced dislocation had been given careful treatment in all cases, in one for five months, in others for four months, etc., by experts in electric and mechanical therapeutic measures. In all the severer cases there had been periartthritis and the persisting pain and atrophy of the muscles indicate participation of the nerve terminals in the trouble. From the standpoint of industrial insurance it is important to bear in mind that even under the best conditions functional disturbance and pain may persist for several months or may become permanent so that it is impossible to judge definitely of the case under several months. Persisting incapacity is generally due to the periartthritis, and only exceptionally to traumatic paralysis of the brachial plexus.

Revue de Gynécologie, Paris

February, XVI, No. 2, pp. 97-208

59 *Metrorrhagia in Young Girls. (Etude histologique de la muqueuse utérine dans une forme particulière de metrorragie observée chez des jeunes filles.) A. Siredey and H. Lemaire.

60 Cysts in the Kidney and Cystic Disease of the Kidney. (Notes sur les kystes rénaux et péri-rénaux.) E. Papin and P. J. Christian.

59. **Metrorrhagia in Young Girls.**—Siredey and Lemaire report four cases of rebellious metrorrhagia in girls from 14 to 20 in which no benefit followed the usual measures and a cure was obtained only by curetting the uterus. The scrapings showed similar lesions in each—a tendency to adenomatous production, of obscure origin. The hemorrhages had kept up for several months but there were no other symptoms beyond the anemia.

Revue de Médecine, Paris

February, XXXI, No. 2, pp. 81-176

61 *Pathogenesis and Treatment of Beriberi. G. Barbézieux.

62 Part Played by the Nitrogen of Ammonia in Production of Urea. (Recherches sur la contribution de l'azote ammoniacal à la formation de l'urée dans l'organisme.) H. Labbé.

63 *Test Diet in Estimating Digestion. (Sur l'épreuve de la digestion par le régime.) J. Cecikas.

61. **Beriberi.**—Barbézieux writes from Indo-China to present arguments in favor of the assumption that beriberi is not a distinct morbid entity but a syndrome for which disturbances in the general nutrition are responsible. It develops only in the predisposed, that is, in those in whom the nervous system has been modified by some inherited diathesis. Acute rheumatism, malaria and dysentery may prove the occasional cause, equally with poverty, neurasthenia, overwork, grief, insufficient food or puerperal or alimentary intoxication. The sodium salts and especially sodium salicylate have not only a symptomatic efficacy but seem to arrest the degeneracy of the central or peripheral nerve tissue and to favor the regeneration of the nerve cells. The sodium salts, he says, seem to facilitate the exchanges and the interaction of the intracellular metallic ions. His experience has confirmed the preponderant rôle of sodium salicylate in the treatment and cure of beriberi. In a typical case reported, the beriberi followed acute rheumatism and sodium salicylate was given by subcutaneous injection for the rheumatism and the beriberi subsided with it. Since then he has been applying the method systematically in the clinic. The neuro-arthritis diathesis seems to be the most frequent and important factor, and this he has found extremely common in tropical countries.

63. **The Test Diet in Estimating Digestion.**—Cecikas has studied on a number of volunteers and patients the findings with Schmidt's test diet. His experience shows the value of the method in organic affections of the digestive tract, but his conclusions differ from Schmidt's in regard to the interpretation of the findings with functional disturbances.

Semaine Médicale, Paris

February 22, XXXI, No. 8, pp. 85-96

- 64 *Auscultation Sign of Glandular Disease in the Chest. (Le signe de D'Espine dans le diagnostic de l'adénopathie trachéobronchique de l'adulte.) M. Roch.

64. Vertebral Auscultation in Diagnosis of Bronchial Adenopathy.—THE JOURNAL, March 9, 1907, page 909, described D'Espine's sign of disease of the glands in the chest in children, namely, the peculiar resonance found in auscultation along the spine as the child speaks, or, preferably, whispers. He makes the test by having the child say the French words for 333, *trois cent trente-trois*. Roch has been studying this sign in adults, and states that it is proving equally instructive at all ages. He found it pronounced in thirty patients, mostly those with pulmonary tuberculosis. The peculiar resonance is the result of the transmission of the sound waves from the bronchial tree to the chest wall by intermediation of the diseased glands. Bending the head forward brings the trachea closer to the spine and this magnifies the characteristic findings. In two cases the findings gradually became negative as enlarged glands in the neck subsided to normal size; he accepts this as evidence that the bronchial glands share in a process affecting the submaxillary glands. With differential vertebral auscultation it must be borne in mind that the bifurcation is higher proportionately in the child than in the adult. Roch discusses the possible sources of error, but concludes from his experience that the sign is destined to prove of great clinical value. It is possible, he adds, that it may not only reveal incipient tuberculous lesions, but may disclose cancerous involvement of the glands in question in certain cases. [Gray's article on vertebral auscultation, to which Roch refers in the course of his article, was reviewed in these columns Aug. 22, 1908, page 709.]

Archiv für Verdauungs-Krankheiten, Berlin

February, XVII, No. 1, pp. 1-118

- 65 Changes in Gastric Mucosa with Gastric Ulcer. (Veränderungen der Magenschleimhaut beim Ulcus ventriculi rotundum.) F. Crämer.
66 *Movable Cecum. N. D. Straschesko.
67 Indican in the Urine. (Harnindikan.) W. v. Moraczewski.
68 Gastric Motor Functioning with Pyloric Ulcer and Spastic Stenosis. (Störung der Magenmotilität bei Ulcus ad pylorum und die spastische Pylorusstenose.) S. Jonas.
69 Injections of Fibrolysin in Treatment of Umbilical and Epigastric Hernia. F. Ehrlich.
70 The Gastric Ferment Tests. (Klinischer Wert der Magenfermentproben.) E. Fuld.
71 *Volvulus of the Stomach. (Volvulus des Magens. Nebst einem Beitrag: Röntgenbeobachtung des Magens beim Brechakt.) S. Mühlfelder.
72 Torsion of Hour-Glass Stomach. (Achsendrehung der Pylorus-hälfte eines angeborenen Sanduhrmagens.) A. Schüle and P. Walther.

66. Movable Cecum.—Straschesko reports from Kiev the case of a man of 34 subject to sudden transient attacks of abdominal pain without rise in temperature, but accompanied by distention of the abdomen, nausea and obstinate constipation, the attacks of colic sometimes terminating in transient diarrhea. Palpation gave different findings at different times, and the operation revealed an abnormally movable cecum with defective development of the ascending colon and a single mesentery for both ileum and cecum. The colic is the result of torsion or kinking and the following local peritonitis; the latter may entail adhesions which further complicate the picture and there may be incarceration. The syndrome is often mistaken for chronic appendicitis, but appendicectomy does not cure it. In Straschesko's case the patient was permanently freed from all trouble from this source by cecopexy, the cecum being fastened in the right iliac fossa with six catgut sutures to the parietal peritoneum. Palpation of the intestines is the best means to detect the trouble, Roentgen-ray examination confirming the findings. The kinked bowel became incarcerated in a fatal case recently reported by Heiler. Movable cecum does not cause symptoms in the majority of cases; it is comparatively common, Hausmann having collected 143 cases in six years.

71. Volvulus of the Stomach.—Mühlfelder gives the details of twenty-three cases on record and of a case in his own experience. All ages are represented in the list; most of the patients had had gastric disturbances for some time before, some even relating that they had had transient subjective sensations previously, like those of the definite volvulus. It

is inevitably fatal in a few hours or days unless it retrogresses or is surgically corrected. In some cases the abdomen was opened, but the true condition was not recognized even then, and the patients succumbed. There is no pathognomonic symptom; the main point is to bear in mind the possibility of volvulus and weigh carefully all the minor phenomena observed. In one case a man of 41 suddenly developed vomiting, with signs of obstruction of the bowel, distention of the abdomen, retching and regurgitation of food and drinks and a slowly increasing tumor in the left hypochondrium. The operation revealed that the large tumor, studded with patches of fresh fat necrosis and bound down by fresh adhesions, was the stomach; the transverse colon lay above it, and in replacing the colon in its normal position the stomach twisted around, showing that what had been supposed to be the front aspect was in reality the posterior. The patient recovered. In the personal case reported, a girl of 20 had had recurring appendicitis. The pains in the side and stomach, cough and vomiting after eating persisting after appendicectomy were ascribed to incipient tuberculosis, and tuberculin treatment was commenced. The epigastrium was tender, and on suspicion of complicating gastric ulcer, feeding was restricted to nutrient injections for a time, during which the pains in the stomach were arrested. On resuming fluid food, the vomiting returned with weak heart action and small pulse. The heart was entirely on the left side and the area of dullness differed on different examinations in a puzzling manner. There was no protrusion or pathologic resistance in the stomach region, and the patient could eat fluid food, and stool followed an enema. Suddenly an acute attack of tetany was observed. This referred the disturbances to the stomach, but the knowledge came too late, the patient dying in a second attack a few hours later; necropsy revealed the volvulus of the stomach. Mühlfelder seeks to explain the mechanism of volvulus and of the vomiting act, especially vomiting with gastropnoxis as a factor in the volvulus.

Beiträge zur klinischen Chirurgie, Tübingen

January, LXXI, No. 3, pp. 575-846

- 73 *Fracture of the Malleoli. W. Bergemann.
74 *Diverticulum in the Esophagus. A. T. Jurasz.
75 *Operative Treatment of Pancreatic Disease. P. Bode.
76 Vertical Posterior Retrocolic Gastro-Enterostomy. (Gastro-enterostomia v. Hacker-Kausch.) W. Katz.
77 *Slanting Gall-Bladder Incision. (Mein schräger Gallenblasenschnitt.) W. Kausch.
78 *Dovetail Method of Opening into the Knee. (Ein neues Operationsverfahren zur schonenden Eröffnung des Kniegelenkes.) M. Kirschner.
79 *Hour-Glass Stomach. (Zur Klinik und Therapie des Sanduhrmagens.) H. Finsterer.
80 *Gutter Operations. (Zwei Tausend Strumektomien.) A. Oberst.
81 Chondromas in Joints. (Gelenkchondrome.) E. Rehn.
82 Enlargement of the Cecum. (Typhlektasie.) F. Hofmeister.

73. Treatment of Fractured Malleolus.—Bergemann thinks that all the advantages are on the side of an adhesive plaster splint for a fractured malleolus. This permits proper functional treatment, obviates healing in a defective position, and the ultimate outcome is as good, he declares, as with Bardenheuer's extension treatment without its drawbacks, healing being complete much sooner and with less trouble for the patient. The correction by the adhesive plaster dressing is supplemented by traction from a broad piece of elastic webbing drawn around the sole and hooked to one of a row of hooks set in the anterior crossed broad strip of adhesive plaster. This permits graduation of the elastic traction, and the final results are good, as he shows by the tabulated details of twenty cases. Three illustrations show the exact technic advocated.

74. Diverticulum in the Esophagus.—Jurasz reports a typical case of a pharyngo-esophageal diverticulum resulting from pressure from within on a defect in the muscular coat. Analysis of the similar cases on record and the experiences with this case confirm the advantages of gastrostomy as a preliminary to the radical operation on the diverticulum which, especially with Lexer's technic for care of the stump, ensures a primary and permanent cure.

75. Operative Treatment of Pancreatic Disease.—Bode analyzes sixteen operative cases; the operation was done on account of cysts in the pancreas in two cases, for cancer in

one, for acute suppuration in the pancreas in three, for chronic pancreatitis in five, and for hemorrhage in the pancreas in five cases. This material is reviewed in detail, especially from the standpoints of etiology, diagnosis and technique. His observation has convinced him that necrosis of the pancreas is not a special affection, but merely one symptom that may be encountered with various affections of the pancreas, the result of inflammation or hemorrhage. Fat necrosis is found most constantly in connection with hemorrhage, probably on account of the fact that the accumulating blood destroys the epithelium and membrane, allowing the pancreatic secretion to get into the tissues between the acini. He warns against puncture for an assumed pancreatic cyst, with the abdomen unopened, as too dangerous to be attempted. Trauma was responsible for the hemorrhage in the pancreas in only one of the cases, but straining at stool may have been the causal factor in another case. Alcoholism was probably a cooperating factor in the others, and a tendency to obesity in some. Most writers describe the syndrome of hemorrhage in the pancreas and of acute suppurative pancreatitis as practically identical. In the cases reported by Bode the symptoms of hemorrhage came on suddenly after from two to six weeks of symptoms suggesting peritonitis or appendicitis. When the appendix was exposed, however, it was found intact in some of the cases, but signs of fat tissue necrosis pointed to the pancreas as the source of trouble. Only one patient recovered in this group of pancreas hemorrhage cases.

77. Slanting Gall-Bladder Incision.—Kausch makes the incision between and parallel to the course of the nerves in the abdominal wall, as he shows in two illustrations. If the umbilicus is in the way he excises it. All the soft parts are incised along the same line. The ultimate outcome seems to be good, as he has found on later examination of forty-eight patients.

78. Dovetail Incision to Obtain Access to the Knee Joint.—Kirschner describes his method of cutting into the extensor apparatus of the knee so as to open up the joint wide, while afterward restoring approximately normal strength to the extensor apparatus. Instead of a horizontal or median incision, he cuts out a trapezoidal indenture like the ordinary dovetailing method of fitting joists and boards together. A number of illustrations show the exact technique with which he is able to saw the extensor apparatus, the patella or upper part of the tibia to cut out the miter-shaped piece. The flap turned back permits ample access to the joint, while when the flap is replaced the broader trapezoidal top fits into its bed, conferring unusual strength and resistance on the severed parts. This dovetailing method may prove useful for other operations elsewhere, as for temporary resections, transplantation of muscles and tendons, etc., but he advises careful following of the directions he has formulated after extensive research on the cadaver. He adds that a little practice on the cadaver will much facilitate the cutting of the miter in bone. The method is scarcely adapted for children on account of possible injury to the epiphysis.

79. Hour-Glass Stomach.—Finsterer reports the details of five cases from the Graz clinic and summarizes sixty-six cases from the literature. The mortality has dropped from 100 to 13 per cent. since operative measures were introduced in its management, and this mortality is still declining as surgical treatment is instituted earlier. The indications for the operations are reviewed. He warns against general anesthesia on account of its injuring the stomach still further and possibly entailing acute dilatation.

80. Two Thousand Goiter Operations.—Oberst's communication issues from the Freiburg clinic; the patients were mostly from southern Germany and Switzerland, and the interval embraced in the statistics is from 1883 to date. Post-operative tetany developed in seven of the patients, and he emphasizes that every effort should be made to spare the parathyroids the slightest injury. This is easier said than done, he adds; perhaps the best plan is to refrain systematically from any interference with the region in which lies the recurrent nerve, as the parathyroids are generally in this part

Berliner klinische Wochenschrift

February 13, XLVIII, No. 7, pp. 281-324

- 83 *Treatment of Morphin Addiction. (Zur Behandlung der Morphinisten.) P. Schroeder.
84 Serodiagnosis of Cystadenoma of the Liver. J. H. Schultz.
85 Inhalation of Epinephrin in Treatment of Acute Catarrh of Upper Respiratory Tract. G. Zuelzer.
86 *Albumin Reaction in Sputum. M. Gantz and R. Hertz.
87 Reciprocal Interaction of Internal Secretions. (Experimentelle Untersuchungen über gegenseitige Wechselwirkungen innerer Sekretionsprodukte.) R. Balint and B. Molnar.
88 What Occurs with the Tuberculin Produced in the Body? (Was geschieht mit dem im Körper produzierten Tuberkulin?) J. Geszti.
89 Results with Salvarsan to Date. A. v. Torday.
90 *Left-Handed School Children. (Die Linkshänder in den Berliner Gemeindeschulen.) M. Schaefer.
91 *Urine Reaction in Infants. (Das Wesen der Engel-Turnau'schen Harnreaktion.) F. Boschan.

83. Morphin Addiction.—Schroeder has not found the results of sudden and complete deprivation of morphin any more serious than when the drug is tapered off. He gives the details of five typical cases to sustain his advocacy of sudden suppression under constant supervision.

86. Abstracted in THE JOURNAL, March 4, page 702.

90. Left-Handed Children.—Schaefer found that 692 of the 17,074 school children examined at Berlin were left-handed. This is a proportion of 4.06 per cent., but the boys nearly twice outnumbered the girls. Inheritance of the tendency was evident in 60.2 per cent. He discusses the anatomic causes for left-handedness, and denounces the present system in vogue which takes no account of the natural instinct to use the left hand as the main instrument, and compels all the children to use the right hand. Instead of training the left hand to expert skill, the training is wasted, he says, on the hand which Nature did not intend to have serve as the main instrument, and which will never attain the skill which the other might have attained.

91. Reaction in Infant's Urine.—Boschan's communication was summarized in Abstract 67 in THE JOURNAL, March 11, page 782.

Deutsche medizinische Wochenschrift, Berlin

February 16, XXXVII, No. 7, pp. 289-336

- 92 Puerperal Self-Infection. F. Ahlfeld.
93 *Herpes Zoster and Kidney Colic. (Beitrag zur Kenntnis der Head'schen Zonen.) A. Bittorf.
94 Arsenophenylglyzin in Sleeping Sickness. Sehers Schmidt.
95 *The "Tuberculin Titer" Test. (Ueber kutane und intrakutane Tuberkulinimpfung unter Verwendung abgestufter Dosen und ihre Bedeutung für die Diagnose der Tuberkulose.) S. Möller.
96 Abdominovaginal Operation for Carcinoma Involving Rectum, Uterus and Bladder. (Zur abdominalen Radikaloperation des Gebärmutterkarzinoms.) L. Seeligmann.
97 *Physical Properties of Drugs in Treatment of Syphilis. J. Traube.
98 Serodiagnosis of Leprosy. (Fehlen freier Komplementes im Blute Lepröser.) J. Eliasberg. (Komplementbindung bei Lepra mit leprösem Antigen.) R. Biehler and J. Eliasberg.
99 Peculiar Pigmentation of Internal Organs of Cameroon Negroes. M. Löhlein.
100 Iodism and Thyroidism. Berg.

93. Herpes Zoster and Renal Colic.—Bittorf describes a case in which intermittent hydronephrosis in a wandering kidney induced occasional attacks of colic and during a recent severe attack herpes zoster developed, its location then corresponding exactly to the eleventh dorsal segment. The condition of irritation in the spinal ganglion evidently afforded a predisposition for the herpes zoster. In other cases on record, herpes zoster developed in Head's zone corresponding to the internal organ suffering from a painful affection. With an affection of the aorta, pain and hyperalgesia in the ulnar side of the left forearm may be the most important subjective symptom of the cardiovascular trouble. He has encountered this a number of times with pronounced sclerosis of the aorta.

95. "Tuberculin Titer" Test.—Möller has been applying the graduated technique introduced by Ellermann and Erlandsen [mentioned in THE JOURNAL, March 18, 1911, page 856]. His findings in 250 patients confirm those reported by others, but he does not think that any of the tuberculin superficial tests are able to determine positively whether the tuberculosis is active or latent. At the same time, when the tuberculosis is in the first or second stage a reaction to the entaneous and intradermal tuberculin tests occurs with minute doses, too

small to induce any reaction in the non-tuberculous. Of nineteen patients in this group ten reacted positively to 0.0000002 gm. tuberculin, but 11.2 per cent. of 125 clinically free from tuberculosis gave likewise a positive reaction to this dose. There was a family history of tuberculosis in nearly all these positive cases. He thinks that the reaction in these cases indicates a tendency for the latent tuberculous focus to become active. Every patient giving a positive reaction should be given the benefit of special measures as if already clinically tuberculous, and should be frequently reexamined.

97. Treatment of Syphilis.—Traube states that the changes in the physical properties of drugs and in the blood under the influence of the drugs deserve greater attention. He has been studying them with his stalagmometer; this records the number of drops in a given volume of the fluid, comparing them with the standard number of drops of water. His research seems to show that the action of salvarsan is due essentially to its basic and precipitating properties, and he thinks that it may be possible to find other elements possessing the same physical properties and which thus may prove equally effectual in therapeutics while free from the drawbacks of the arsenic compounds. He is convinced that the physical properties of drugs rank in importance over their chemical properties, while chemotherapeutic research seems to have overlooked this fact mostly to date.

Medizinische Klinik, Berlin

February 12, VII, No. 7, pp. 249-288

- 101 *Treatment of Chronic Catarrh of the Large Intestine. R. Kolisch.
- 102 Otolgic Findings in Reference to Trauma of the Head. (Verwertung otologischer Untersuchungsmethoden bei der Begutachtung Kopfverletzter.) Rhese.
- 103 Prophylaxis and Treatment of Contractures. P. Zander.
- 104 *Technic for the Fresh-Air Cure. (Fortschritt in der Liegekur der Lungenkranken.) R. Nöhring.
- 105 Tonsillotomy or Tonsillectomy? F. Kobrak.
- 106 Nematode Disease of Plants. M. Schwartz.

February 19, No. 8, pp. 289-326

- 107 *Senile Chorea. H. Eichhorst.
- 108 Head's Superficial Temperature Sense. (Ueber Henry Heads Lehre von Temperatursinn der Haut.) A. Goldscheider.
- 109 Determination of Acidity of Gastric Juice. (Bestimmung der Azidität des Magensafts.) M. Bönniger.
- 110 Appendicitis at Greifswald, 1901-1910. H. v. Tappeiner.
- 111 Scapula. (Ein häufig vorkommende Anomalie des Schulterblattes.) W. W. Graves (St. Louis).
- 112 *Venesection in Treatment of Polycythemia. (Ueber Polyzythämie mit besonderer Berücksichtigung grösserer Aderlässe.) A. Hörder.
- 113 The Sympathetic Nervous System. (Das vegetative Nervensystem.) A. Frölich.

101. Chronic Catarrh of the Large Intestine.—Kolisch concludes his summary of the progress in late years in treatment of catarrh of the large intestine with the assertion that the only progress has been in the dietetic treatment, and this only by the better differentiation of the individual conditions by the functional tests, permitting regulation of the diet to conform to existing conditions. The possibility that the stomach may be primarily responsible for the intestinal trouble should never be forgotten.

104. Fresh-Air Reclining in Severe Climates.—Nöhring has the windows of the halls used for fresh-air reclining closed at night and the heat turned on in the morning, so that the floor and walls never get thoroughly chilled through although the big windows are all open to the floor during the day while the patients are reclining there. If the day is dry, he has a temperature as low as 32 F. in the halls but if the weather is damp he does not let the halls get colder than 50 or 52 F. Five years' experience has convinced him that this modification of the rigorous northern climate gives far better ultimate results than attempts to enforce the actual climatic conditions.

107. Senile Chorea.—Eichhorst describes two cases of typical chorea in a man of 80, and a woman of 73. In both the chorea developed after emotional stress; in both the chorea was on one side only and the necropsy findings were negative. The man died the fourth week after the onset of the right-sided chorea, and the woman during the fifth year of chronic left-sided chorea. In fifty-three cases of senile chorea on record, emotional stress was cited as a causal factor in 17 per cent.; 25 per cent. of the total fifty-five patients died

soon after the onset of the chorea, and it became chronic in 49 per cent. In Bourneville's case, the chorea developing in a woman of 64 continued for twenty-four years. There was more or less mental disturbance in 43.6 per cent. of the cases; in 23.6 per cent. the chorea was unilateral.

112. Polycythemia.—Hörder adds another to the seventy or eighty cases on record of primary polycythemia. His patient was a man of 51, healthy until five years ago when enlargement of the spleen began to cause discomfort and a year later the signs of polycythemia became pronounced. Hörder regards the disease as a morbid entity involving the composition and distribution of the blood. Venesection, large amounts of blood being withdrawn, gave constant although transient relief in this case, the number of red corpuscles dropping by three or four millions and the other disturbances becoming attenuated after each blood-letting. It was repeated six times in the course of two months, from 150 to 700 c.c. of blood being withdrawn. The first count showed 10,700,000, with hemoglobin 130 per cent.; the last count, nine days after the fifth venesection, showed 9,500,000 reds.

Münchener medizinische Wochenschrift

February 14, LVIII, No. 7, pp. 337-392

- 114 *Ovarian Origin of Uterine Hemorrhage in Some Cases. (Wechselbeziehung zwischen Uterus und Ovarien, ein Beitrag zur Behandlung gynäkologischer Blutungen.) M. Henkel.
- 115 *Albumin (Casein) Milk in Infant Feeding. (Zur Technik und Indikation der Ernährung mit Eiweissmilk.) H. Finkelstein and L. F. Meyer.
- 116 *Importance of Appetite in Estimation of Stomach Function. (Einfluss des Appetits auf die Magentätigkeit und seine Bedeutung für die funktionelle Magendiagnostik.) O. Fischer.
- 117 *Importance for Prognosis of Invasion of Blood by Germs. (Prognostische Bedeutung des Uebertritts von Keimen ins Blut.) E. Sachs.
- 118 *By-Effects of Salvarsan. (Nebenwirkung des Salvarsans.) W. Gilbert and J. Sellei.
- 119 *Direct Lavage of the Duodenum. (Direkte Berieslung des Duodenums.) M. Gross.
- 120 Color Scale for Estimation of Pigmentation. (Entwurf einer Farbenskala zur Bestimmung physiologischer und pathologischer Pigmentierungen.) F. B. Solger.
- 121 Ovarian Therapy. (Beitrag zur Eierstock-Therapie.) R. Einhauser.
- 122 *Typhoid Meningitis. (Typhusbazillen in der Cerebrospinalflüssigkeit.) A. Stühmer.
- 123 *Nascent Mercury in Treatment of Syphilis. F. Hubbes.
- 124 Infant Consultations, Milk Stations, etc., in Munich. (Zwei Jahre offene Säuglingsfürsorge.) A. Uffenheimer. Commenced in No. 6.

114. Reciprocal Relations Between Uterus and Ovaries.—Henkel has had opportunity to examine these relations in 150 operative cases during the last few years. The findings can generally be classified in two groups: those in which there is an unusual number of follicles and those in which they are unusually scanty. In the first group the irritation from ripening of an unusually large number of follicles induces changes in the uterine mucosa which are liable to entail uterine hemorrhage. The hemorrhage in such cases must be regarded as a menstrual phenomenon, as it is the expression of the participation of the uterine mucosa in the abnormally frequent ovarian processes. In such cases partial resection of the ovaries has proved an effectual means of removing the cause for this atypical menstruation. He found that it generally cured also any existing tendency to dysmenorrhea. In the other group, in which the organ is abnormally small and defectively developed, ovarian treatment seems to promote the further development of the ovaries and to cure the tendency to uterine hemorrhage. Palpation usually enables the two forms of ovaries to be distinguished. He makes it a principle to remove the ovaries with the uterus in case of myoma requiring laparotomy; the after-effects were no worse than when the ovaries were left, while the operative results were much better. His idea is that the uterus forms an integral part with the ovaries of the genital apparatus, and that the loss of one or the other destroys the functioning of the one left.

115. Albumin Milk.—Finkelstein and Meyer relate their further experiences with the albumin milk and emphasize the fact that it is not a food for healthy infants, and should not be given in conjunction with other food or milk. [The method of its preparation was described in THE JOURNAL, July 2, 1910, page 93.] They summarize here the special indications for this casein food.

116. **Influence of Appetite on Test Gastric Functioning.**—Fischer declares that the ordinary test meal pays too little attention to the appetite; a meal that is more palatable gives a much better oversight of gastric functioning. He has found extremely useful a breakfast in which the patient is allowed to select his beverage from the list: milk, coffee, tea, bouillon and weak lemonade, each 300 c.c. With this is allowed a roll or slice of bread (75 gm. bread), butter 20 gm. and 70 gm. of scraped raw meat, ham or sausage or two eggs or a herring. Comparative tests with this and the ordinary test breakfast showed that the "appetite breakfast" supplied much better information in regard to the secretory and motor functioning than the ordinary test breakfast.

117. **Conditions in Which Germs Pass Into the Blood.**—Sachs points out that the prognosis is very different when the germs are forced into the blood by some mechanical influence or primary absorption. The organism is generally able to conquer the germs invading the circulation in these cases. Conditions are different when there is chronic absorption of the germs and they are found to be proliferating in the blood; this indicates extra virulence.

118. **By-Effects of Salvarsan.**—Gilbert injected 0.2 gm. of salvarsan into the left gluteal muscle of a 9-year-old girl with parenchymatous keratitis; there was slight spastic paresis in the right leg and the Wassermann reaction was positive, although the parents denied syphilis. At the age of 6 there had been an obscure nervous attack and the paresis was possibly the sequel of a syphilitic meningitis at that time. Eighty-one hours after the injection the child was found unconscious in collapse, and epileptiform seizures developed, increasing in number and severity, with pulse 160, extreme cyanosis and foam at the mouth, so that a fatal outcome seemed inevitable, but the child gradually recovered in four or five days. If the collapse had occurred in the night, it is scarcely probable that the child would have been saved. Gilbert adds that slight paresis suggesting a possibility of meningitis in the past should contra-indicate salvarsan unless the patient can be kept under constant clinical supervision.—Sellei reports three cases of recent syphilis in which injection of salvarsan was soon followed by disturbances in hearing; in another case a syphilitic injury of the auditory nerve subsided under an injection of salvarsan.

119. See THE JOURNAL, April 23, 1910, page 1365.

122. **Typhoid Meningitis.**—Stühmer reports a case in which typhoid infection seemed to have localized exclusively in the meninges, typhoid bacilli being found in the cerebrospinal fluid obtained by lumbar puncture. The latter, he asserts, had an unmistakably curative effect on the meningitic symptoms. He has found eight cases of typhoid meningitis in the literature, in all but three of which the patients recovered.

123. **Inhalation of Nascent Mercury in Syphilis.**—Hubbes heats cinnabar (red mercuric sulphid) and has the patient inhale the fumes of the nascent mercury. In order to get rid of the sulphur he adds pure iron to the cinnabar; this binds the sulphur in the form of ferrous sulphid. Without the iron the sulphur forms the dangerous sulphur dioxid, but this is obviated by adding a corresponding amount of chemically pure iron. This nascent mercury seems to have an intensely toxic action on the spirochetes and combining with the hemoglobin follows them to the remotest parts in the body. He has seen the severest syphilis subside without recurrence to date under eight or ten sittings in the course of four or five days. He has had two and one-half years' experience with this method and has never had a failure, and affirms that with this method of using mercury there is no need to go farther afield for any other remedy.

Virchows Archiv, Berlin

February, CCIII, No. 2, pp. 161-320

- 125 Lipoma Containing Bone in the Tuber Cinereum. H. Zuckermann. Commenced in No. 1.
126 Lipoma in Pla Mater. B. Hecht.
127 Intestinal Emphysema. S. Ciechanowski.
128 *Obstruction of Mesenteric Blood-Vessels. (Verschluss der Mesenterialgefässe.) G. Bolognesi.
129 Congenital Membranous Stricture of the Prostatic Urethra. R. Lederer.
130 Thyroid Deformity. (Missbildungen der Schilddrüse.) P. Schilder

128. **Obstruction of the Mesenteric Blood-Vessels.**—Bolognesi summarizes the clinical and experimental experiences in this line on record, and reports extensive personal research on rabbits.

Wiener klinische Wochenschrift, Vienna

February 16, XXIV, No. 7, pp. 227-262

- 131 Extracellular Action of Leukocytes. (Aphagozidie.) E. Weil.
132 Bismuth Paste in Treatment of Chronic Suppuration. (Behandlung chronischer Eiterungen mit Wismutpaste nach Beck.) H. H. Schmid.
133 Salvarsan. (Zur therapeutischen Bedeutung des Arsenobenzols.) W. Reiss and F. Krzyszczalowiez. (Zur Applikationsweise des Salvarsans.) J. Hahn.
134 Comparative Study of Registration of Auricle Pulsation within the Esophagus and the Electrocardiogram. (Vergleichende Berechnung des Oesophagogramms mit dem Elektrokardiogramm.) W. Janowski.

Zentralblatt für Chirurgie, Leipsic

February 18, XXXVIII, No. 7, pp. 225-264

- 135 *Dangers of Diverting Urine into Intestine. (Zur Operation der Blasenektomie bzw. zur Versorgung des Harnleiters nach Blasenexstirpation.) K. Spannaus.
136 *Treatment of Ankylosis of the Patella. A. Schanz.

135. **Dangers of Implantation of Ureter in Intestine.**—Spannaus reports two cases in which he successfully implanted the ureters in a stretch of bowel according to the technics recently advocated by Fink and by Goldenberg. Theoretically, the operation seems promising but in both of his cases the diversion of the urine into the intestine proved disastrous, the intestine evidently having absorbed noxious elements of the urine with resulting uremia, while the urine had a distinctly injurious action on the bowel mucosa. His first patient, a man of 43, had the bladder removed on account of hemorrhagic papilloma; a receptacle for the urine was formed out of an excluded stretch of ileum fastened outside the peritoneum. The wound healed smoothly but diarrhea developed two weeks later to which the man succumbed. The second patient was a woman of 40 with cancer developing on exstrophy of the bladder. The ureter was implanted in the excluded stretch of ileum and the wound was healing when symptoms of uremia became manifest and the woman died the seventh day.

136. **Ankylosis of the Patella.**—Schanz comments on the unsatisfactory results of the present methods of treating adhesion of the patella to the femur. When the adhesion is broken up, it has been only a question of time before the parts grew together again. This is avoided by the simple device of transferring the bursa between the patella and the skin to the space between the patella and the femur—thus merely changing the position of the bursa from the front to the back of the patella. He has done this in two cases and the procedure was so simple and easy and the result so ideal that he commends it for general adoption in treatment of ankylosis of the knee. The nutrition of the skin over the patella did not seem to suffer in the least in his two cases after removal of the bursa between.

Zentralblatt für Gynäkologie, Leipsic

February 18, XXXV, No. 7, pp. 257-296

- 137 Care of Wound After Abdominal Hysterectomy. (Zur Wundversorgung bei der abdominalen Radikaloperation.) W. Hannes.
138 Drainage of Abdominal Cavity. (Was beabsichtigen wir mit der Bauchhöhlendrainage zu erreichen?) A. Sippel.
139 *Progress or Going Backward? (Vermeintlicher Fortschritt und Rückzug.) E. Roth.

139. **Progress Forward or Backward?**—Roth thinks that the time has come to take stock of the boasted progress of the last fifteen years in medicine and see whether all of it can be regarded as an actual onward advance. Science has not escaped the blight of restlessness and haste characteristic of the age. New conceptions and methods are constantly being promulgated in the medical press and they are hailed as progress on account of the modern longing for change, but whether they really represent progress is another question. He strives to answer this in regard to allowing parturients to leave the bed early, Cesarean section for placenta prævia, extraperitoneal Cesarean section, vaginal methods for operations on the uterus, and the transverse incision (*Fascienquerschnitt*)—all popular in certain quarters in Germany. His conclusions are to the effect that the drawbacks of allowing women to get up before the seventh or eighth day outweigh

the benefits, and a retreat should be sounded. The advantages of a little early exercise can be obtained without leaving the bed. Cesarean section as a systematic method of managing placenta prævia is another evil which should be abandoned, he argues, as also the tendency to too exclusive use of the vaginal route. The by-injuries with vaginal operations are increasing in number, as, for example, the case of the woman whose sterility it was sought to cure by a salpingostomy; during this there was so much hemorrhage that the uterus had to be removed to arrest it. Dührssen's mortality in 441 vaginal operations was 13, while Krönig's was only 2 in 485 abdominal operations. The transverse incision is also proving unsatisfactory on account of the difficulty of restoring anatomic conditions afterward, as he shows by statistics from various clinics. Here, too, he declares, a retreat should be sounded. The enthusiasm for extraperitoneal Cesarean section has also subsided as it has been shown that it is not suited any better than the classic technic for suspicious cases. So of all this boasted progress nothing, he declares, has stood the test of time.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 7, XXXII, No. 17, pp. 179-186

- 140 Pathogenesis of Acromegaly. G. A. Pari.

February 12, No. 19, pp. 195-210

- 141 Importance of Stomach Content in Dubious Cancer Cases. (Importanza dell'esame del contenuto gastrico nelle forme gastro-intestinali delle persone avanzate in età, progressivamente gravi.) L. Marchetti.

Policlinico, Rome

February 12, XVIII, No. 7, pp. 197-228

- 142 Antolysates of Tissnes in Treatment of Tumors. G. Fichera.
143 Restoration of Duct of Steno. (Escisione di un tratto di condotto di Stenone e reintegrazione del canale.) G. Baccolini.

Riforma Medica, Naples

February 13, XXVII, No. 7, pp. 169-196

- 144 *Formation of Specific Antibodies and Fixation of Complement in Malaria. L. Ferrannini.
145 *Possible Cause of Error in Hydrostatic Test of Infant's Lung. A. Cevdalli.

144. **Fixation of Complement in Malaria.**—Ferrannini has been applying the complement-fixation test in malaria with extracts of malarial spleens for the antigen. The findings were constantly negative, and the negative findings of other investigators with different technics all apparently confirm the fact that malarial infection does not induce the production of antibodies. This confirms the clinical experience that an attack of malaria does not confer immunity; there is no production of agglutinins or precipitins. This explains the difficulty in radically curing the disease and the susceptibility to subsequent attacks although it is possible that a racial immunity may be gradually developing. He is inclined to suspect possibly latent syphilis in the positive findings with the Wassermann test reported by DeBlasi in 52 per cent. of his malarial patients examined and by Boehm in about 30 per cent.

145. **Hydrostatic Test of Infant's Lung.**—Cevdalli reports actual experiences which demonstrate that if the fetus gets any of the amniotic fluid in its lungs, the sebaceous smegma in the fluid is liable to make the lung float whether the child has breathed or not.

Ugeskrift for Læger, Copenhagen

February 16, LXXIII, No. 7, pp. 212-251

- 146 *Toothache in the Toothless. (Tandsmerter hos Tandløse.) M. Melchior.

146. **Toothache in the Toothless.**—Melchior warns against ascribing to the teeth what may be neuralgia from pressure on the nerve by some minute focus in the jaw. Or the trouble may be a reflex neuralgia from constipation, uterine disease, etc. In one patient, the "toothache" had persisted for a long time involving the upper jaw on both sides and persisting after all the upper teeth had been extracted. On suspicion of syphilis, potassium iodid was then given when the pain soon entirely subsided. Careful study of the case, especially noting the definite point where the pain begins, may point to the exact site of the hidden causal lesion

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

INTRODUCTION TO PRACTICAL ORGANIC CHEMISTRY. Including Qualitative and Quantitative Analysis and Preparations. With Special Appendix on the London University Syllabus, and Schemes of Analysis for Stages 1 and 2 of the Board of Education Syllabus. By A. M. Kellas, B.Sc. (Lond.), Ph.D. (Heidelberg), Lecturer on Chemistry at the Middlesex Hospital, 1910. Cloth. Price, \$1.35 net. Pp. 204, with 50 illustrations. New York: Oxford University Press, 1910.

A SYSTEM OF OPHTHALMIC OPERATIONS. Being a Complete Treatise on the Operative Conduct of Ocular Diseases and Some Extraocular Conditions Causing Eye Symptoms. Edited and Partly Written by Casey A. Wood, M.D., C.M., D.C.L., Late Professor of Ophthalmology and Head of the Department, Northwestern University Medical School. Complete in Two Volumes. Volumes I and II. Cloth. Price, \$15. Pp. 1824, with 968 illustrations. Chicago: Cleveland Press, 1911.

LA BASE DE TOUTE RÉFORME. Santé, Richesse et Liberté Assurées à la Société et à Chaque Individu par l'Alimentation Rationnelle. Exposé concis de la question alimentaire à la lumière des découvertes récentes de la physiologie et de l'anatomie humaines et comparées, de la chimie, de la géologie, de l'histoire et de la philosophie. Par Otto Carque. Paper. Price, 2 francs. Pp. 85, with illustrations. Paris: A. Maloine, 25-27, rue de l'Ecole de Médecine.

A TEXT-BOOK OF GYNECOLOGIC SURGERY. By Comyns Berkeley, M.A., M.D., B.Cantab., Gynecologist and Obstetrician to the Middlesex Hospital, and Victor Bonney, M.S., M.D., B.Sc.Lond., Assistant Gynecologist and Assistant Obstetrician to the Middlesex Hospital. Cloth. Price, \$5 net. Pp. 720, with 392 illustrations. New York: Funk & Wagnalls Co., 1911.

DER LUPUS: SEINE PATHOLOGIE, THERAPIE, PROPHYLAXE. Für den praktischen Gebrauch geschrieben. Von Prof. Dr. L. Philippson, Direktor der Dermatologischen Universitätsklinik zu Palermo. Aus dem italienischen Manuskript übersetzt von Dr. Fritz Juliusberg. Paper. Price, 2 marks. Pp. 42, with 14 illustrations. Berlin: Julius Springer, 1911.

HISTORY OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION. With Biographies of its Presidents, Complete Roster of its Officers, Programs of its Meetings, and the Past and Present Laws Relating to the Practice of Medicine in Mississippi. Cloth. Pp. 171. Dr. E. F. Howard, Secretary, 506 First National Bank Building, Vicksburg, Miss., 1910.

FOODS AND THEIR ADULTERATION. Origin, Manufacture and Composition of Food Products; Infants' and Invalids' Foods; Detection of Common Adulterations, and Food Standards. By Harvey W. Wiley, M.D., Ph.D. Cloth. Second Edition. Price, \$4 net. Pp. 641, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

NEW YORK STATE LIBRARY YEAR-BOOK OF LEGISLATION, 1908. Edited by Clarence B. Lester, Legislative Reference Librarian. Legislation Bulletins 37, 38 and 39, Digest of Governors' Messages 1908. Index of Legislation 1908, Review of Legislation 1907-1908. Cloth. Price, \$1. Pp. 513. Albany: University of the State of New York, 1910.

DIAGNOSTIC AND THERAPEUTIC TECHNIC. A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic. Cloth. Price, \$4 net. Pp. 775, with 815 illustrations. Philadelphia: W. B. Saunders Co., 1911.

PHOTOGRAPHIC ATLAS OF RADIOGRAPHY OF THE MASTOID REGION AND OF THE NASAL ACCESSORY SINUSES. By Joseph C. Beck, M.D., Clinical Professor of Oto-Laryngology, College of Physicians and Surgeons, University of Illinois. Half Morocco. Price, \$8. St. Louis: The Laryngoscope Co., 1911.

ACUTE ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS). A Précis by Wade H. Frost, Passed Assistant Surgeon. Prepared by Direction of the Surgeon General. Pub. Health Bull. 44, February, 1911. U. S. P. H. and M.-H. S. Paper. Pp. 52. Washington: Government Printing Office, 1911.

DIE BEHANDLUNG DER FRAUENKRANKHEITEN. Für die Praxis Dargestellt. Von Dr. J. Veit, Professor und Direktor der Universitäts-Frauenklinik in Halle a.S., Geh.Med.-Rat. Paper. Price, 8.20 marks. Pp. 242, with 34 illustrations. Berlin: S. Karger, Karlstrasse 15, 1911.

PUBLIC HYGIENE. By Thomas S. Blair, M.D., Neurologist Harrisburgh, Pennsylvania, Hospital. Assisted by Numerous Contributors. In Two Volumes. Volume I and II. Cloth. Price, \$10 net. Pp. 644, with 158 illustrations. Boston: Richard G. Badger, (1911).

REPORTS OF THE TRUSTEES, RESIDENT OFFICERS AND VISITING COMMITTEE OF THE MAINE INSANE HOSPITAL AND EASTERN MAINE INSANE HOSPITAL. For the Year Ending Nov. 30, 1910. Paper. Pp. 42, with illustrations. Henry W. Miller, M.D., Superintendent, 1911.

HAND-BOOK OF THE SURGERY OF THE KIDNEYS. By W. Bruce Clarke, M.A., M.B. (Oxon.), F.R.C.S., Senior Surgeon to St. Bartholomew's Hospital. Cloth. Price, \$4 net. Pp. 199, with 50 illustrations. New York: Oxford University Press, 1911.

TWENTY-EIGHTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF INDIANA. For the Fiscal and Board Year Ending Sept. 30, 1909. Statistical Year Ending Dec. 31, 1909. To the Governor. Cloth. Pp. 638. J. N. Hurty, Secretary, Indianapolis, Ind.

DIGITALIS STANDARDIZATION AND THE VARIABILITY OF CRUDE AND OF MEDICINAL PREPARATIONS. By Worth Hale. Hyg. Lab. Bull. 74, January, 1911. U. S. P. H. and M.-H. S. Paper. Pp. 53. Washington: Government Printing Office, 1911.

REPORT OF THE SUPERINTENDENT MINNESOTA SCHOOL FOR FEEBLE-MINDED AND COLONY FOR EPILEPTICS. Biennial Period, Ending July 31, 1910. Paper. Pp. 235, with illustrations. A. C. Rogers, M.D., Superintendent, 1910.

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Dr H B Ward
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Vol. LVI, No. 12

535 Dearborn Avenue, CHICAGO, ILL.

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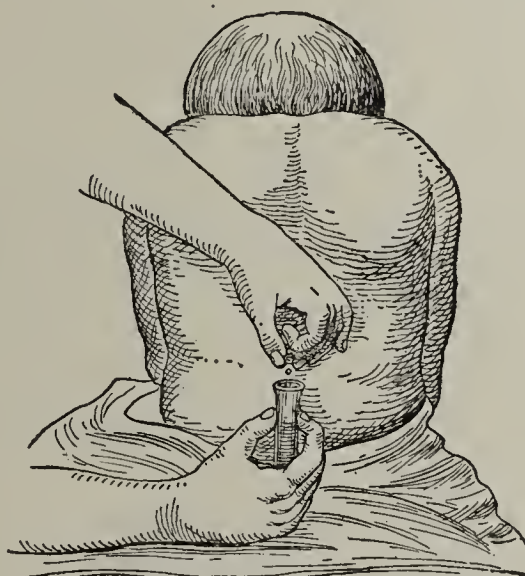
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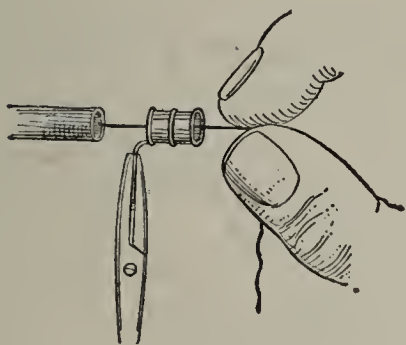
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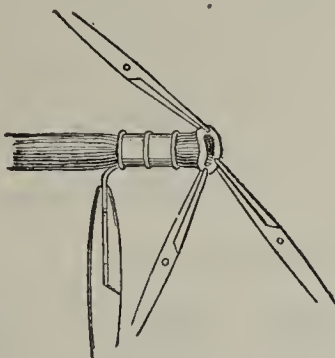
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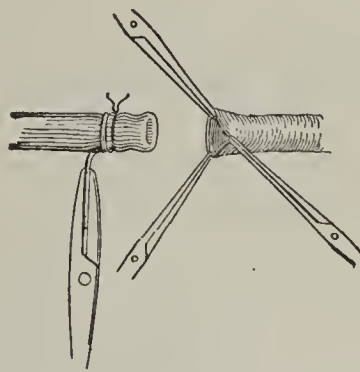
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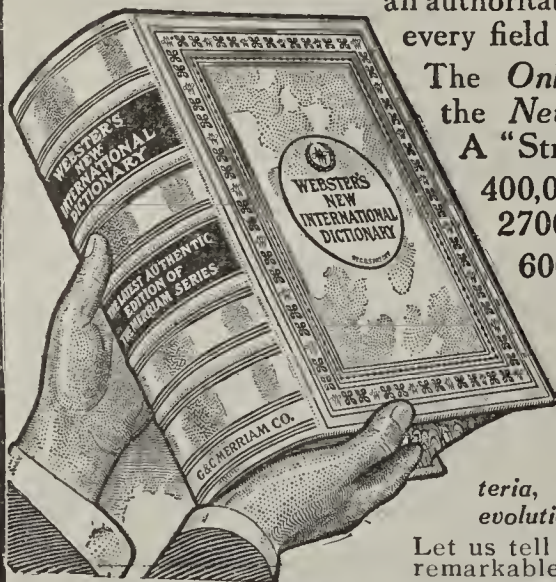
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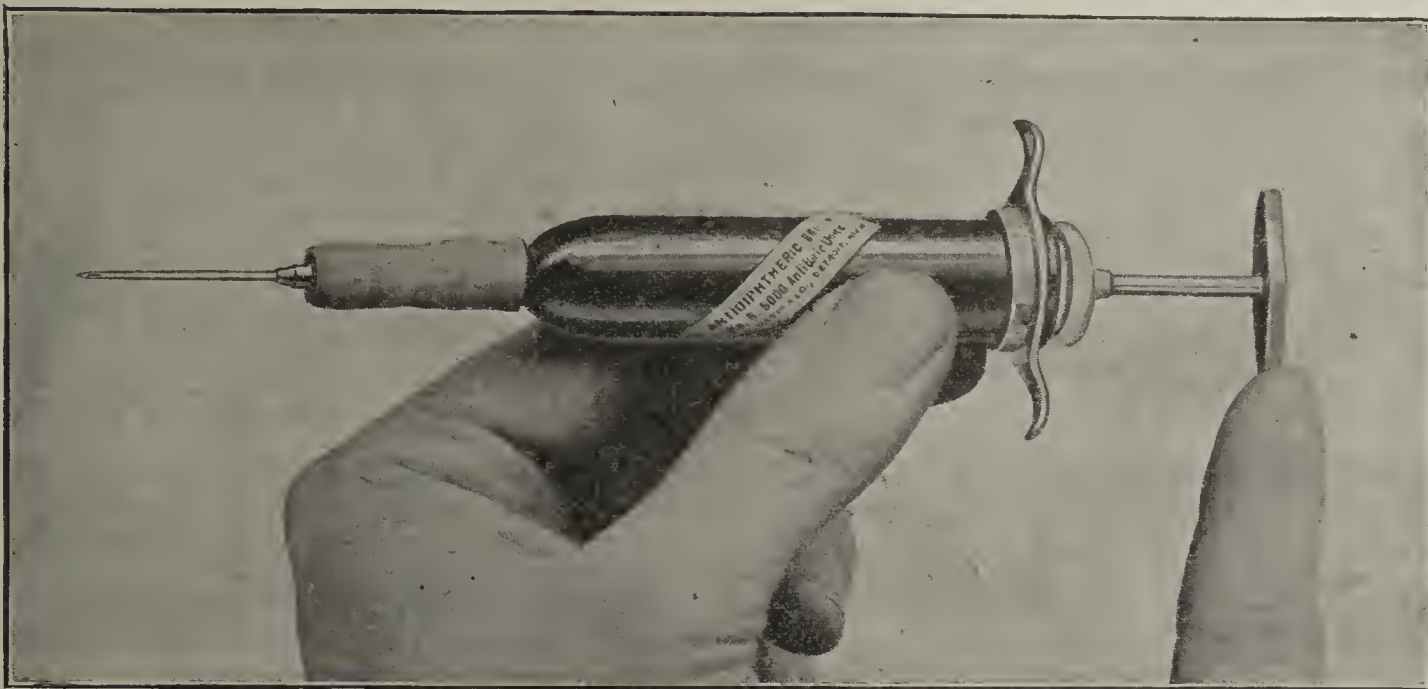
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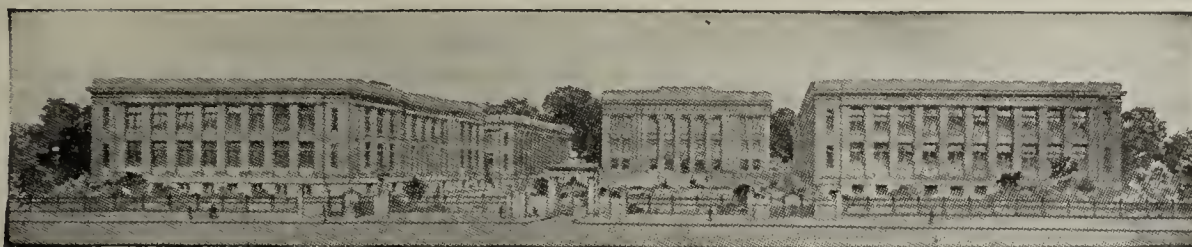
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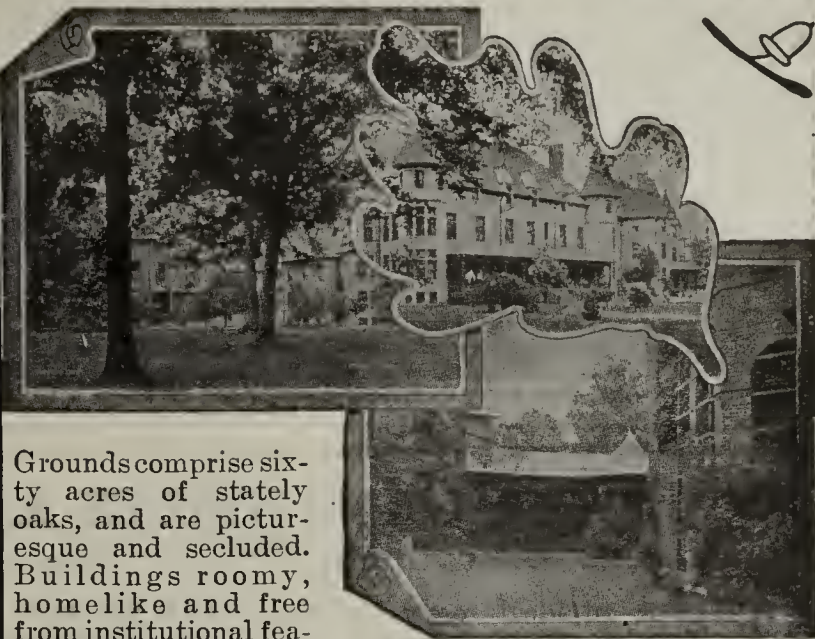


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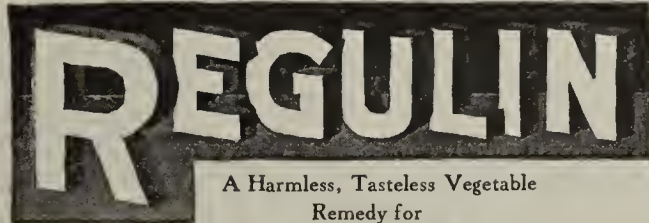
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LIST OF NATIONAL MEDICAL SOCIETIES

This information is correct to date of going to press, so far as we have been able to obtain it from the secretaries of the various societies. Officers or others are requested to notify us of any errors or required changes. For further information concerning any society address the secretary.

SOCIETY.	PRESIDENT.	SECRETARY.	NEXT ANNUAL MEETING.
AMERICAN MEDICAL ASSOCIATION....	Wm. H. Welch, Baltimore.....	Geo. H. Simmons, 535 Dearborn Ave., Chicago	Los Angeles, June 27-30, 1911.
American Academy of Medicine.....	C. S. Sheldon, Madison, Wis.....	Charles McIntire, Easton, Pa.....	Los Angeles, June 23-26, 1911.
Academy of Ophthal. and Oto-Laryng..	John J. Kyle, Indianapolis.....	Geo. F. Suker, 103 State St., Chicago.....	Indianapolis, Sept. 25-27, '11.
Anatomists, Association of.....	Geo. A. Piersol, Philadelphia.....	G. Carl Huber, Ann Arbor, Mich.....	December, 1911.
Association of Genito-Urinary Surgeons.	Chas. L. Gibson, New York.....	E. L. Keyes, Jr., 109 E. 34th St., New York	New York, May 1-3, 1911.
Association of Obstetricians and Gyn..	Herman E. Hayd, Buffalo.....	Wm. W. Potter, 238 Delaware Ave., Buffalo	Louisville, Sept. 26-28, 1911.
Assn. of Pathologists and Bacteriologists	E. R. LeCount, Chicago.....	H. C. Ernst, Harvard Med. School, Boston....	Chicago, April 14-15, 1911.
Association of Railway Surgeons.....	A. R. Mitchell, Lincoln, Neb.....	Louis J. Mitchell, 67 Wabash Ave., Chicago...	Montreal, Can., June 13-14, '11.
Climatological Association	John W. Brannan, New York.....	Guy Hinsdale, Hot Springs, Va.....	Boston, May 25-27, 1911.
Dermatological Association	D. W. Montgomery, San Francisco...	James M. F. Winfield, 47 Halsey St., Brooklyn	Philadelphia, Sept. 6-7, 1911.
Electro-Therapeutic Association.....	Frederick De Kraft, New York City...	J. W. Travell, 27 E. 11th St., New York.....	Philadelphia, April 19-20, 1911.
Gastro-Enterological Association	W. B. Cannon, Boston.....	C. D. Aaron, 32 W. Adams Ave., Detroit....	Atlantic City, May 23-25, 1911.
Gynecological Society	Reuben Peterson, Ann Arbor, Mich..	LeRoy Broun, 148 W. 77th St., New York....	Philadelphia, May 29-31, 1911.
Laryngological Association	Jas. E. Logan, Kansas City, Mo.....	Jas. E. Newcomb, 118 W. 69th St., New York..	Atlantic City, June 1-3, 1911.
Larynx, Rhin. and Otol. Society.....	Chevalier Jackson, Pittsburg.....	Thos. J. Harris, 117 E. 40th St., New York..	Denver, Col., June 19-20, '11.
Medico-Psychological Association	Chas. W. Pilgrim, Poughkeepsie, N. Y.	Charles G. Wagner, Binghamton, N. Y.....	Baltimore, May 11-13, 1911.
Neurological Association	H. M. Thomas, Baltimore.....	Alfred R. Allen, 111 So. 21st St., Philadelphia	New London, Conn., July 11, '11
Ophthalmological Society	Emil Gruening, New York City.....	W. M. Sweet, 1205 Spruce St., Philadelphia	Cincinnati, May 15-17, 1911.
Orthopedic Association	A. H. Freiberg, Cincinnati.....	R. R. Fitch, 209 East Ave., Rochester, N. Y.	Atlantic City, June 26-27, '11.
Otological Society	Edw. B. Dench, New York.....	James F. McKernon, 62 W. 52d St., New York	L. Mohonk, May 31-June 2, '11.
Pediatric Society	Henry D. Chapin, New York.....	S. S. Adams, 1 Dupont Circle, Wash., D. C.	Atlantic City, May 9-10, '11.
Physicians, Association of.....	F. Forchheimer, Cincinnati.....	Geo. M. Kober, 1819 Q St., Washington, D. C.	December 27-30, 1911.
Physiological Society	S. J. Meltzer, New York.....	A. J. Carlson, University of Chicago.....	Los Angeles, June 26-27, 1911.
Proctologic Society	George J. Cook, Indianapolis.....	L. H. Adler, Jr., 1610 Arch St., Philadelphia	Havana, Cuba, Dec. 4-9, 1911.
Public Health Association.....	Chas. O. Probst, Columbus, Ohio.....	W. C. Woodward, 1766 Lanier Pl., Wash., D. C.	New Orleans, May 18-19, 1911.
Society of Tropical Medicine.....	W. S. Thayer, Baltimore.....	John M. Swan, Watkins, N. Y.....	Denver, June 19-21, 1911.
Surgical Association	Richard H. Harte, Philadelphia.....	Robt. G. LeConte, 1530 Locust St., Phila....	Boston, May, 1911.
Therapeutic Society	H. W. Wiley, Washington, D. C.....	N. P. Barnes, 212 Maryland Ave., Wash., D.C.	Chicago, Sept. 26-27, 1911.
Urological Association	Hugh Cabot, Boston.....	H. A. Fowler, The Cumberland, Wash., D. C.	Milwaukee, 1911.
Assn. of Military Surgeons of the U. S..	G. H. Torney, Washington, D. C.....	C. Lynch, 716 Union Trust Bldg., Washington	Washington, D. C., May, 1913.
Congress Am. Phys. and Surgs.....	Edw. L. Trudeau, Saranac Lake, N. Y.	W. H. Carmalt, 87 Elm St., New Haven, Conn.	Los Angeles, June 30-July 1, '11
Con. of State and Prov. Bds. of N. A....	J. Y. Porter, Jacksonville, Fla.....	H. M. Bracken, Capitol Bldg., St. Paul, Minn.	Oklahoma City, Oct., 1911.
Med. Association of the Southwest.....	M. L. Perry, Parsons, Kan.....	Fred H. Clark, El Reno, Okla.....	Nashville, Oct. 17-19, 1911.
Mississippi Valley Medical Association...	Robert H. Babcock, Chicago.....	Henry Enos Tuley, Louisville, Ky.....	St. Joseph, Mo., Mch. 16-18, '11.
Missouri Valley, Medical Society of the..	Donald Macrae, Council Bluffs.....	Chas. Wood Fasset, St. Joseph, Mo.....	Denver, June 20-21, 1911.
Nat. Assn. for Study and Prev. of Tuber.	Wm. H. Welch, Baltimore.....	H. B. Jacobs, 11 Mt. Vernon Pl., Baltimore..	St. Louis, June 16, 1911.
Nat. Assn. for Study of Epilepsy.....	M. L. Perry, Parsons, Kan.....	J. F. Munson, Sonyea, N. Y.....	Hattiesburg, Miss., Nov., 1911.
Southern Medical Association.....	Isadore Dyer, New Orleans.....	Seale Harris, Mobile, Ala.....	Wash'ton, D. C., Dec. 12-14, '11.
Southern Surgical and Gyn. Association..	Rudolph Matas, New Orleans.....	W. D. Haggard, Jr., 148 8th Av. N., Nashville	Kan. City, Mo., Dec. 18-19, '11.
Western Surgical and Gyn. Association..	A. W. Abbott, Minneapolis.....	Arthur T. Mann, Donaldson Bldg., Minneapolis	

LIST OF STATE MEDICAL SOCIETIES

This information is correct to date of going to press, so far as we have been able to obtain it from the various secretaries. Officers or others are requested to notify us of any errors or required changes. For further information concerning any society address the secretary.

SOCIETY.	PRESIDENT.	SECRETARY.	NEXT ANNUAL MEETING.
Alabama, Medical Assn. of the State of..	Wyatt H. Blake, Sheffield.....	J. N. Baker, 602 So. Perry St., Montgomery.	Montgomery, April 18, 1911.
Arizona Medical Association.....	John W. Foss, Phoenix.....	John W. Flinn, Prescott.....	Bisbee, May 2-5, 1911.
Arkansas Medical Society.....	R. C. Dorr, Batesville.....	Morgan Smith, 108 Louisiana St., Little Rock	Fort Smith, May 2-5, 1911.
California, Medical Soc. of the State of..	John C. King, Banning.....	Philip M. Jones, Butler Bldg., San Francisco	Santa Barbara, April 18, 1911.
Colorado State Medical Society.....	W. H. Swan, Colorado Springs.....	Melville Black, Metropolitan Bldg., Denver...	Steamboat Springs, Sept., 1911.
Connecticut State Medical Society.....	F. Hallock, Cromwell.....	Walter R. Steiner, 4 Trinity St., Hartford...	Hartford, May 24, 25, 1911.
Delaware State Medical Society.....	Presley S. Downs, Dover.....	G. W. K. Forest, 1000 Jackson St., Wilm'ton	Lewes, Oct. 10, 1911.
District of Columbia, Medical Assn. of...	Noble P. Barnes, Washington.....	L. H. Reichelderfer, 1721 Conn. Ave., Wash.	Washington, D. C., Apr. 25, '11.
Florida Medical Association.....	James D. Love, Jacksonville.....	J. D. Fernandez, Jacksonville.....	Tallahassee, May 10, 1911.
Georgia, Medical Association of.....	Edw. C. Davis, Atlanta.....	Wm. C. Lyle, Augusta.....	Rome, April 19-21, 1911.
Hawaiian Territorial Medical Society.....	W. G. Rogers, Honolulu.....	Wm. C. Hobdy, Honolulu.....	Boise, Oct. 11-13, 1911.
Idaho State Medical Association.....	John W. Givens, Orofino.....	Ed. E. Maxey, Boise.....	Aurora, May 16-18, 1911.
Illinois State Medical Society.....	Alfred C. Cotton, Chicago.....	Edmund W. Weis, Ottawa.....	Indianapolis, Sept. 28-29, 1911.
Indiana State Medical Association.....	Frederick C. Heath, Indianapolis...	Chas. N. Combs, Arcade Bldg., Terre Haute	Des Moines, May 17-19, 1911.
Iowa State Medical Society.....	Matthew N. Voldeng, Cherokee.....	V. L. Treynor, Council Bluffs.....	Kansas City, May 3-5, 1911.
Isthmian Canal Zone, Med. Assn. of.....	J. C. Perry, Ancon.....	J. W. Ross, Jr., Ancon.....	Paducah, Oct., 1911.
Kansas Medical Society.....	O. P. Davis, Topeka.....	Chas. S. Huffman, Columbus.....	Shreveport, May 30-June 1, '11.
Kentucky State Medical Association.....	J. E. Wells, Cynthiana.....	Arthur T. McCormack, Bowling Green.....	Augusta, June 28-29, 1911.
Louisiana State Medical Society.....	E. J. Graner, New Orleans.....	Joseph D. Martin, New Orleans.....	Baltimore, April 25-27, 1911.
Maine Medical Association.....	E. H. Bennett, Lubec.....	W. Bean Moulton, 622 Congress St., Portland	Boston, June 13-14, 1911.
Maryland, Medical and Chir. Faculty of..	Franklin B. Smith, Frederick.....	John Ruhrh, 1211 Cathedral St., Baltimore..	Detroit, Sept. 27-28, 1911.
Massachusetts Medical Society.....	Geo. B. Shattuck, Boston.....	Walter L. Burrage, 282 Newbury St., Boston.	St. Paul, Oct. 6-8, 1911.
Michigan State Medical Society.....	C. B. Burr, Flint.....	Wilfred Haughey, 15 E. Main St., Battle Ck.	Jackson, April 11, 1911.
Minnesota State Medical Association.....	J. W. Robertson, Litchfield..	Thos. McDavitt, 210 Lowry Arcade, St. Paul.	Jefferson City, May 16-18, '11.
Mississippi State Medical Association.....	J. W. Young, Grenada.....	E. F. Howard, 2134 So. Cherry St., Vicksburg	Butte, May 10-11, 1911.
Missouri State Medical Association.....	Herman E. Pearce, Kansas City.....	E. J. Goodwin, 3525 Pine St., St. Louis.....	Omaha, May 2, 1911.
Montana State Medical Association.....	Wm. F. Cogswell, Livingston.....	Herbert D. Kistler, Murray Hospital, Butte..	Oct. 10-12, 1911.
Nebraska State Medical Association.....	J. P. Lord, Omaha.....	A. D. Wilkinson, 513 Sec. Life Bldg., Lincoln	Concord, May 11-12, 1911.
Nevada State Medical Association.....	S. K. Morrison, Reno.....	Martin A. Robison, Reno.....	Spring Lake, June 13-15, 1911.
New Hampshire Medical Society.....	A. S. Wallace, Nashua.....	D. E. Sullivan, 7 No. State St., Concord....	Las Vegas, 1911.
New Jersey, Medical Society of.....	Thomas H. McKenzie, Trenton.....	W. J. Chandler, 65 S. Orange Av., So. Orange	Albany, April 18, 1911.
New Mexico Medical Society.....	Francis T. B. Fest, East Las Vegas..	R. E. McBride, Las Cruces.....	Charlotte, June 20, 1911.
New York, Med. Soc. of the State of....	Charles Stover, Amsterdam.....	Wisner R. Townsend, 17 West 43d St., N. Y.	Fargo, May 9-10, 1911.
North Carolina, Med. Soc. of the State of	C. M. Poole, Salisbury.....	David A. Stanton, High Point.....	Cleveland, May 9-11, 1911.
North Dakota State Medical Association..	Henry H. Healy, Grand Forks.....	H. J. Rowe, Casselton.....	Muskogee, May 9-11, 1911.
Ohio State Medical Association.....	Roland E. Skeel, Cleveland.....	J. H. J. Upham, 186 E. State St., Columbus.	Los Angeles, July, 1911.
Oklahoma State Medical Association.....	David A. Meyers, Lawton.....	Claude A. Thompson, Muskogee.....	Harrisburg, Sept. 25-28, 1911.
Oregon State Medical Association.....	F. W. Vandyke, Grant's Pass.....	Calvin S. White, Dekum Bldg., Portland....	Manila.
Pennsylvania, Med. Soc. of the State of.	John B. Donaldson, Cannonsburg...	Cyrus Lee Stevens, Athens.....	Providence, June 1, 1911.
Philippine Islands Medical Association...	B. U. Valdes, Manila.....	W. P. Chamberlain, Manila.....	Charleston, April 19-21, 1911.
Rhode Island Medical Society.....	Augustine A. Mann, Central Falls....	S. A. Welch, 253 Washington St., Providence	
South Carolina Medical Association.....	James H. McIntosh, Columbia.....	Edgar A. Hines, Seneca.....	
South Dakota State Medical Association..	H. M. Finnerud, Watertown.....	R. D. Alway, 212 Main St., Aberdeen.....	
Tennessee State Medical Association.....	John A. Witherspoon, Nashville.....	Geo. H. Price, 146 N. 8th Ave., Nashville...	
Texas, State Medical Association of.....	John T. Moore, Houston.....	Holman Taylor, Fort Worth.....	
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Washington State Medical Association...	Wilson Johnston, Spokane.....	C. H. Thomson, Seattle.....	
West Virginia State Medical Association.	Chas. A. Wingerter, Wheeling.....	A. P. Butt, Davis.....	
Wisconsin, State Medical Society of.....	Byron M. Caples, Waukesha.....	Charles S. Sheldon, 251 Langdon St., Madison	
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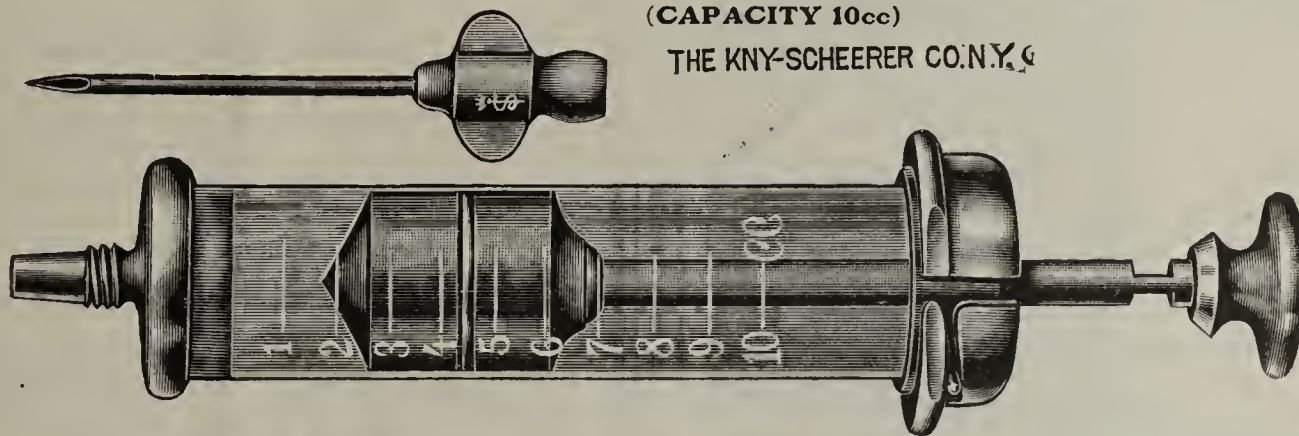
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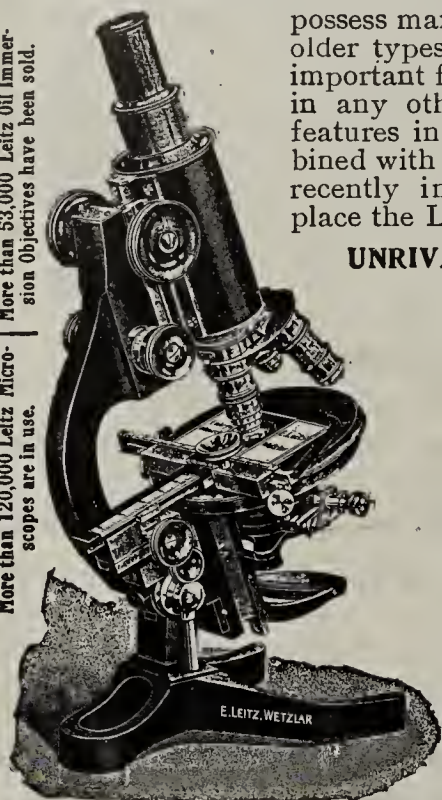
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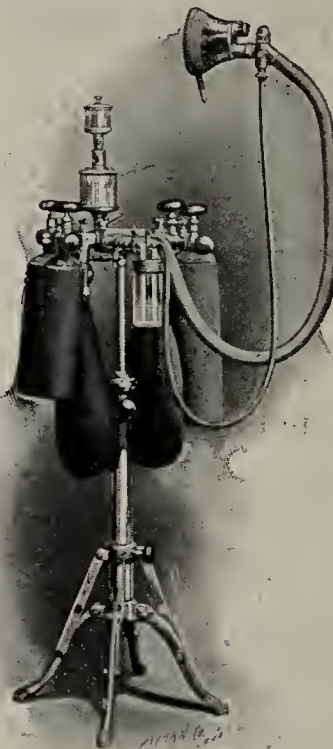
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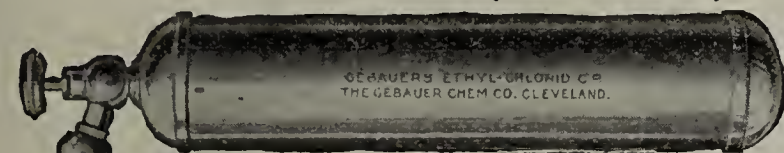
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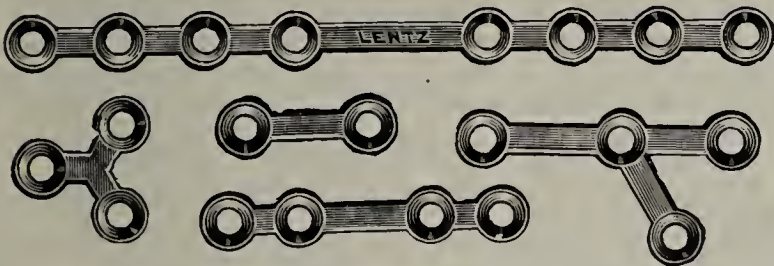
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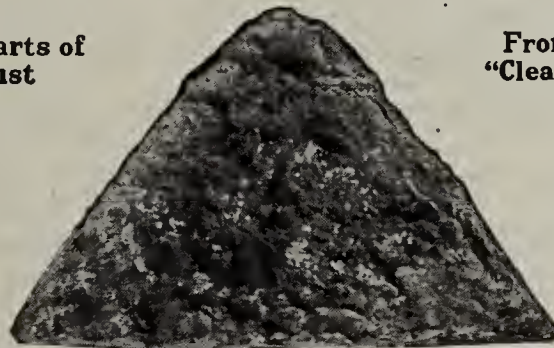
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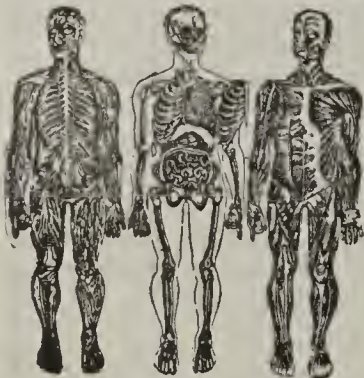
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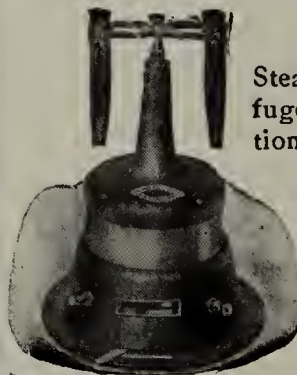
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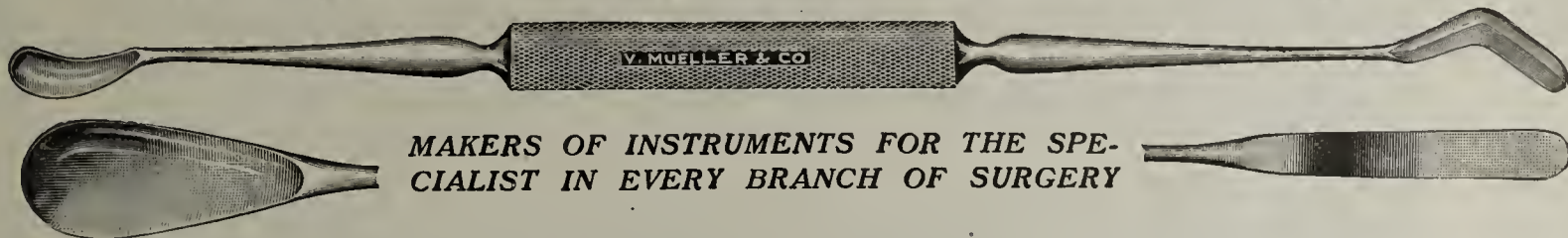
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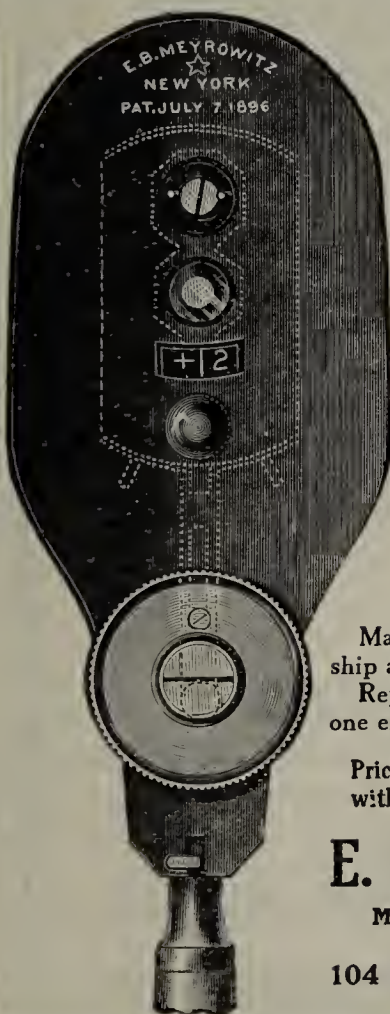
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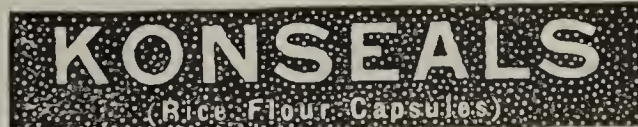
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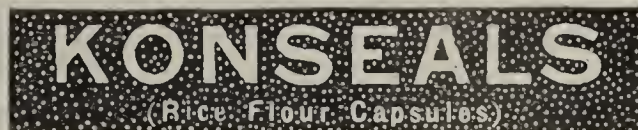
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the Physician has the greatest latitude in prescribing, as he knows (or should) that any compatible combination is possible, and where he does not care to employ "a ready to wear" method of practice, opportunity is given by this medium of capsulating, with no fear of nauseating the Patient, no matter how obnoxious the drug or how disagreeable the taste, absolute certainty of effect; for assimilation is assured, and any size dosage can be taken by even the most fastidious, much easier than the smallest pill or tablet. If as Prof. Remington maintains, a perfect form of capsulation should be *Soluble, Digestible, Palatable, Tasteless, easily swallowed, and elegant in appearance.*



will be approved and employed by every Physician who appreciates the *best*, as they meet every requirement, including that of pleasing the patient.

Samples, Reprints and Formulary showing range of use mailed on request to

J. M. GROSVENOR & CO.,
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**WHEN YOU VISIT LOS ANGELES, HAVE YOUR TICKET READ
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It's a
great
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and
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through



The
World's
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LAKES IN THE CLOUDS—(CANADIAN ROCKIES)

Only an incident on the CANADIAN PACIFIC.

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No Expensive Side Trips Necessary.

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The Glories of the
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LAGGAN (Lakes in the Clouds), EMERALD LAKE, FIELD,
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through the "Isles of the Blest"—the famous San Juan group of historic interest.

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Corkscrew—Bright Angel Trail

THE Corkscrew marks the last stage of the famous Bright Angel trail into the GRAND CANYON OF ARIZONA. This trail is over eight miles long and in that distance descends a perpendicular mile. While necessarily very steep it is so safeguarded as to eliminate danger.

The illustration shows about one-fifth of the inner or granite gorge down which a tortuous way has been found.

The American Medical Association Special will remain at the GRAND CANYON for twenty-eight hours. This will afford time for a drive along the rim, a visit to the several points of interest and a trip down the trail. This

last is the only way one may realize the immensity of the Canyon.

There are some hundreds of other things along the Santa Fe that will interest you, but we venture the guess that when you return you will say that this titanic gorge is the most wonderful and the most unforgettable experience in your delightful outing.

Requests for Pullman space on the American Medical Association Special are coming in rapidly. It is to your advantage to get yours in without delay. There still is choice space for early applicants. Write today to

G. T. GUNNIP, Gen'l Agt.,
105 Adams St., Chicago.

COLORADO

IS JUST THE PLACE TO SPEND YOUR SUMMER VACATION

Colorado air is the best tonic in the whole world.

For men who may need rest and change.

For tired women and for those who enjoy the bracing outdoor life.

And above all for children—Colorado is the ideal vacation place.

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offer a comfortable and quick way of getting there.

The Burlington Route's Special Train de Luxe to the great
A.M.A. Convention at Los Angeles in June

will run via cool Colorado and afford a daylight ride through the very Heart of the Rockies.



The Electric Lighted
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WHY NOT send in your name for a copy of the Burlington Route Colorado Handbook for 1911, when issued? It will tell all about Colorado—and Utah too; will be full of pictures and give all the details of every desirable hotel and boarding house, the name of the proprietor, the price for accommodations, all about the fishing, hunting, saddle horses, guides and everything you want to know—with the cost. It will also contain a map and full information about train service.

Sent free to any address on request—a postal will bring you a copy.

P. S. EUSTIS, Passenger Traffic Manager,
Chicago.

NATIONAL CONVENTION

American Medical Association

LOS ANGELES, CAL., JUNE 27-30, 1911

For the occasion mentioned above, the Chicago Medical Society has arranged for a special train to run through from Chicago to Los Angeles without change, via the

Chicago Union Pacific & North Western Line

AND

Salt Lake Route

Leaving Chicago via the Chicago & North Western Ry., 9:15 p.m., Thursday, June 22nd; arriving Los Angeles, 4:30 p.m., June 25th. Its equipment will be of the most modern character, including electric lighted Pullman drawing room sleeping cars, composite buffet and library-observation cars. All meals served in dining cars, à la carte.



For full Information, Reservations, etc.,
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General Agent, C. & N. W. Ry.
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The center of enter-
tainment in the city
that entertains.

EUROPEAN PLAN: FROM \$2.00 UP

Under the management of James Woods

A Special Train to Los Angeles

Special train will leave Chicago, Tuesday, June 20, stopping enroute at the GRAND CAN-
YON of ARIZONA.

Tickets will be good returning independently on regular trains by any authorized route or with our tours.

Special Tours, including all expenses, will leave Los Angeles July 1st, returning:

Route "B," via San Francisco, Salt Lake and Colorado.

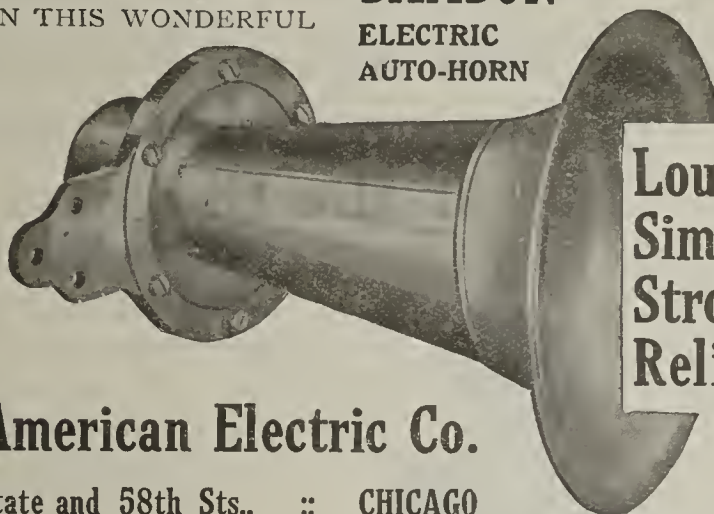
Route "C," via San Francisco, Portland, Seattle and scenic Canadian Pacific R.R.

Route "D," via San Francisco, Portland, Seattle, ALASKA and Can. Pacific R.R.

Send for program giving rates and full information
GATES TOURS, Toledo, Ohio

GET OUR
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"SAMSON"
ELECTRIC
AUTO-HORN



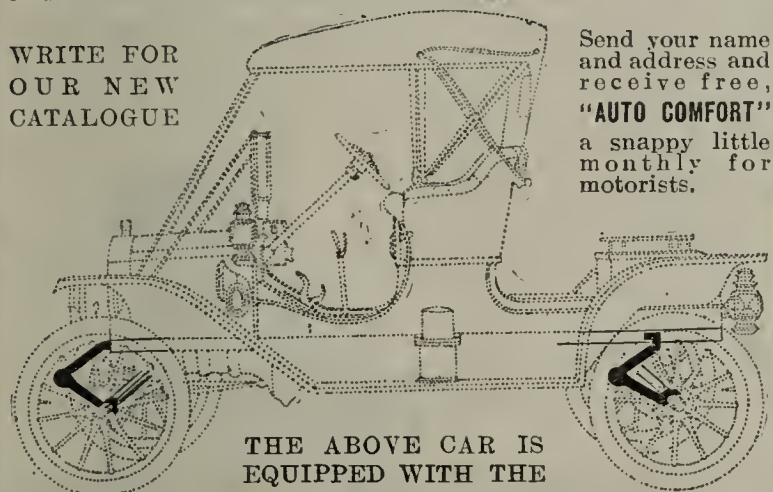
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receive free,
"AUTO COMFORT"
a snappy little
monthly for
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THE ABOVE CAR IS
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"MAKES ALL ROADS SMOOTH ROADS"

It's Ready! How About YOUR Car, Doctor?

You can drive it over the roughest road in your vicinity if you Truffault-Hartford-equip it. A small car like Ford Model T, Maxwell AA, Buick No. 10 or any car of similar size and weight can be equipped for \$15, the price of a set of the "Juniorette." Then you can count on *Solid Comfort and Lower Upkeep Cost.*

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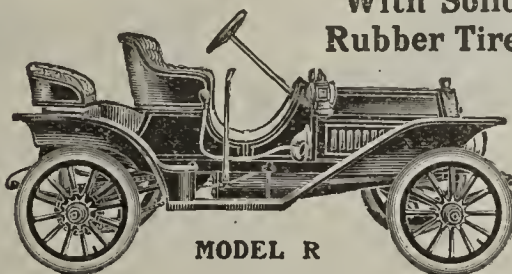
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Rumble Seat \$20.00 Extra

**DOCTOR—Here is the Car Built
to Meet Your Particular Need**

—Built to solve your transportation problem and meet your general requirements.

It is specially constructed to cover distances over any kind of roads. Its chief characteristic is its proved ability to give service under every condition, and in addition it is as speedy and classy as any doctor could ask.

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MODEL R—THE DOCTORS' SPECIAL

You don't want a boulevard car, doctor, for *your* work. You must have a machine that is sure over any roads, any time—one ready to start on the minute without tinkering and adjusting—one that can keep going and stand the grind, without constant attention. The Schacht is famous for its ability along these lines. Send for our catalog. Let us show you why the Schacht will give you more real service—at less cost than you can get any other way. Drop us a line today and let us tell you all about this special doctor's car and our special direct-to-doctors selling plan.

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Prompt Action,
Freely Soluble,
Adapted for Rectal Use

Affections of the Nervous and Muscular Systems of Women Are Frequently Due to the Use of the Old Style Sewing Machine



THIS IS
THE
RIGHT
WAY

When your women patients complain of lame back or nervous irritability ask them—*What Sewing Machine Do You Use?* It is becoming generally recognized among members of the medical profession that the old style sewing machine is frequently the basic cause of spinal pains, chronic lumbago and vague nervous manifestations, peculiar to women. It is also often an indirect cause of uterine prolapsus, general enteroptosis, etc.

The Reason For This Is Plain:

Look at the construction of the old style sewing machine—on account of the needle being $4\frac{1}{2}$ inches away from the center, the operator has to sit in a position with her body

twisted out of plumb to operate it. Think what this twisting of the spine and pelvic organs continuously means—to use the treadle with the feet requires, in every case, an unnatural twisting of the body, and every doctor is familiar with the results following such anomalous positions.

THIS IS THE
WAY THE
PATIENT SITS.
IT'S WRONG!



Suggest That Your Patient Use

THE STANDARD CENTRAL NEEDLE MACHINE. It is built to operate with the needle central—right in front of the operator and directly over the center of the treadle.

This construction enables the patient to assume a natural position when sewing—she can sit up straight without the least strain on the spinal column or abnormal pressure on any part of the pelvic genitalia.



and head. The patient can sit with trunk erect, breathe naturally and the erector spinæ muscles are maintained in their normal position.

We invite requests for our illustrated booklet "A Stitch in the Side," which explains fully the features of this unique invention. Sent postpaid to physicians or any of their patients whose addresses they send us.

Women, when using the **STANDARD CENTRAL NEEDLE MACHINE**, can operate it easily without straining spinal muscles and contortion of vertebræ; hence, the usual lame back and neurotic conditions are avoided. The natural position which is assumed when operating this machine makes sewing less laborious, and removes the ill effects so commonly arising from long continued malpositions of the trunk



"PRINCESS" Style Central
Needle Cabinet—Open

The Standard Sewing Machine Co.

6460 Cedar Avenue,

Cleveland, Ohio

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Advertisements under the following headings cost **\$1.50 for 50 words or less**, additional words 3c. each.

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LOCATION	SURGICAL INSTR.
LOCUM TENENS	FOR RENT
PARTNER	EXCHANGE
PARTNERSHIP	MISCELLANEOUS
SITUATION	

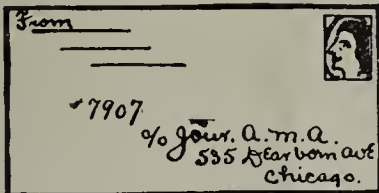
For the following classifications the rate is **\$1.50 for 30 words or less**—additional words 5c. each. No gratuitous insertions given under these headings.

ABSTRACTING AND TRANSLATING
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SALESMEN WANTED
SUBSCRIPTION BUREAUS
MISCELLANEOUS COMMERCIAL ADVTs.

RESULTS are better when an advertise-ment receives several consecutive insertions, and to those who remit \$6 (\$6.25 if answers are to be sent through this office) for four insertions of a 50-word advertisement we will give, *free, two more insertions* provided the first four do not consummate a deal. Notice for free insertions must be received within two weeks from date of last insertion.

SPECIAL NOTE—An extra fee of 25c. is charged those advertisers who have answers sent % A.M.A. Letters sent in our care are forwarded promptly.

Frequently, we receive requests to this effect: "Please send me the address and particulars regarding ads. No. —, No. —, and No. —." We are not permitted by advertisers who have their mail sent % A.M.A. to furnish inquirers information of any kind, hence when you wish to correspond with such an advertiser, address the envelope in this manner.



To avoid opening numerous small accounts we require that *Remittance must accompany order*. For current issue, ad. should reach us Monday.

Journal A.M.A., 535 Dearborn Ave., CHICAGO

N. B.—We exclude from our columns all known questionable ads. and appreciate notification from our readers relative to any misrepresentation.

ASSISTANTS WANTED

WANTED—JUNIOR ASSISTANT IN ST. Peter State Hospital; single; general hospital experience; excellent opportunity for training in general medicine and pathology; maximum salary, \$1,000 a year, with board, lodging and laundry; opportunity for promotion. Add. Dr. H. A. Tomlinson, Supt., St. Peter, Minn. B

EXAMINATIONS FOR APPOINTMENT OF eight Junior Members of the House Staff of Harper Hospital, Detroit, Mich., will be held April 6, 7 and 8, 1911, at the hospital. The service is for two years and is a rotating one, beginning July 1, covering Medicine, Surgery and Gynecology, including a service at the Childrens Free Hospital and the Municipal Hospital for Tuberculosis and other infectious diseases. Members of the House Staff serve one year as Juniors and one year as Seniors. The Junior Service includes Medicine and Laboratory, the Senior Service, Surgery and Gynecology. Graduates in Medicine or men to be graduated before July 1, 1911, will send application with letters of recommendation to Stewart Hamilton, M.D., Medical Director. J

TRAINING SCHOOLS FOR NURSES

WANTED—NURSES—SIX PROBATION nurses for our training school; two years' course; board, room and laundry supplied free. Rhodes Avenue Hospital, Rhodes Ave. and 32d St., Chicago, Ill. J

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Physicians prepared for the U. S. Army, Navy and Marine Hospital Services, and State Medical Examining Boards. Candidates instructed individually. For full particulars, address

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Serum Diagnosis Syphilis, Opsonic Index made. Bloods examined, Vaccines, Luetic Liver extract, Amboceptor and Specific Sera furnished.

Courses in Anatomy, Pathology and
Operative Surgery of the

Ear, Nose and Throat

*Classes limited. For dates and
information address*

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The Post-Graduate School of the Man- hattan Eye, Ear and Throat Hospital

This Hospital offers especial advantages, having 150 beds and six clinics daily, excepting Sundays and legal holidays. In these clinics last year were treated over 27,000 patients. In the Hospital over 9,000 operations on the eye, ear, nose and throat were performed. The instruction is exclusively clinical and personal. Students may matriculate at any time, and for any length of time. Special operative courses given. For further particulars address

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QUIZZING for this and other State Medical and Dental Examining Boards. Medical law recently changed. Write for new requirements. Oral quiz begins June 1st and December 1st of each year. Mail quiz may be taken at any time. Information given about all State Boards upon application. Address

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Army, Navy and State Medical Board Quiz

Physicians prepared for U. S. and other American Medical Examinations.

R. G. SCHROTH, M.D.

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Send Specimens for Diagnosis

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COLUMBUS MEDICAL LABORATORY

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DR. ADOLPH GEHRMANN, . . President

SCHOOL OF PATHOLOGY AND OPERATIVE SURGERY

Offers the most complete Operative Courses on the Cadaver to Post-Graduates only. The courses are most comprehensive, embracing every operation in General and Special Surgery. The courses continue throughout the entire year.

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STUTTERERS Summer Courses EUROPE

(Berlin, Zurich, High Alps)

By a Specialist (Physician)

Address, M.D., 87 Madison Avenue, New York City

WANTED—THE CHICAGO POLICLINIC

Training School offers young women who have had a high-school education, or its equivalent, private instruction in the Henrotin Memorial Hospital, with ward and clinical instruction in the Chicago Polyclinic Hospital. Physicians knowing young women desiring to take up nursing are requested to refer them to Mary C. Stewart, Supt., Henrotin Memorial Hospital, cor. Oak St. and La Salle Ave., Chicago, Ill. J

THE NORTH CHICAGO HOSPITAL HAS increased its capacity and desires to add to the size of its Training School for Nurses. Therefore we solicit applications through the courtesy of physicians knowing of young women who desire to take up this profession. Our capacity is 75 beds and affords our pupils a thorough training. Detailed information with application blank will be furnished upon communicating with Joseph C. Beck, M.D., 2551 N. Clark St., Chicago. KK

LOCATIONS WANTED

WANTED—LOCATION IN TOWN OF 2,000 to 4,000 in Iowa or Nebraska; I want to locate quick; I will buy out old-established physician; county seat town preferred. Add. 564 E, % AMA.

WANTED—UNOCCUPIED PRACTICE IN Wisconsin, Indiana, New York, Oklahoma or Michigan; give nationality, religion, population, distance to competition, equipment, price, all in first letter. Add. Dr. Heil, 5870 Garfield Ave., St. Louis, Mo. E

WANTED—PRACTICE—WILL BUY—Preferably on a partnership basis for a time and in Catholic community; state particulars regarding price, terms, number and age of physicians in locality, amount of practice, yearly collections, hospitals, etc. Add. Dr. B. R. M., Essex, Ontario, Canada. E

WANTED—BY AN EXPERIENCED PHYSICIAN now successfully established in Pennsylvania, to purchase a practice in Maryland, town, country or combined, within easy reach of either Baltimore or Washington; state price and give full details concerning fees, amount of work done, competition, etc. Add. 553 E, % AMA.

WANTED—LOCATION IN SOUTHWEST Missouri, Oklahoma or New Mexico; must bear close investigation; money from the start; good schools, roads, society and collections; for proper introduction will buy office fixtures and real estate, but will give no bonus for practice. Add. 361 E, % AMA.

WANTED—A \$3,000 TO \$5,000 PRIVATE or contract practice in West, by regular physician; graduate leading eastern school; nearly two years' hospital, one year private practice; can do major surgery; favorable to mining practice; best references; will consider partnership or assistantship; no real estate; complete information first letter. Add. 586 E, % AMA.

WANTED—LOCATION IN SOUTH OR southwest, with opportunity of assistantship to busy surgeon or practitioner; am graduate of Jefferson Medical, aged 27, married, temperate; three years' hospital experience; capable of doing surgery and routine laboratory work; wish to build up practice with permanent location. Add. 593 E, % AMA.

WANTED—INDIANA, KANSAS OR RECIPROCATING states preferred—Location or partnership, by regular physician; B.S. degree; 18 months' hospital, three years' successful private practice; best references; can do surgery; will pay cash for satisfactory proposition; must bear close investigation; prefer no real estate; please furnish complete information in first letter. Add. 392 E, % AMA.

WANTED—WILL PAY BONUS OF \$150 to anyone finding me a good location; must be permanent, in the extreme south, income not less than \$180, part salary or contract; have had 3 years' contract practice, 18 months' hospital; American and foreign diplomas; diseases of tropics, specialty; speak Spanish; a very good position, obtained through these columns, expired unexpectedly—place closed up; best of references if called for. Please add. Physician, Box 237, San Antonio, Texas. E

(Continued on next page)

LOCUM TENENS WANTED

WANTED—ILLINOIS — RELIABLE, UP-to-date sober physician to take busy practice through April and a part of May, with view to buying if satisfactory; this appears but once. Add. 609 F, % AMA.

WANTED—IMMEDIATELY — ETHICAL physician to take charge of \$3,000 to \$4,000 practice; town of 350; salary, \$50 per month, and in addition may keep all in excess of expenses, which are about \$125 per month, including salary; office equipped, but no instruments. Add. Box 526, Marshall, Minn. F

PARTNERS WANTED

WANTED—A PARTNER IN A PRACTICE established twelve years in a progressive Wyoming mining town; must be a capable surgeon and have \$11,000 cash to purchase half interest in a business property paying \$245 per month; a snap for some one; investigate. Add. 500 G, % AMA.

WANTED—IMMEDIATELY—PARTNER—Hospital of 25 beds; modern; well equipped; great surgical opportunity; hospital on good paying basis; located in central Indiana; no hospital opposition; good country and good people; the business is growing and I want help; one-half interest in hospital will cost \$1,500; if you mean business, come to see me; if you do so, you will stay. Add. 581 G, % AMA.

PARTNERSHIP WANTED

WANTED—PARTNERSHIP — YOUNGER physician, refined in character and appearance, well and thoroughly trained in hospital and dispensary service, experienced in laboratory and x-ray work, etc., desires affiliation with physician as partner or associate; I seek a wider field and opportunity of association with a man broadminded and progressive; speak German fluently; references. Add. 343 H, % AMA.

SITUATIONS WANTED

WANTED—PHYSICIAN, AGED 28, SINGLE, of good personality and habits, with eighteen months' general hospital experience, desires contract practice or position as assistant to physician and surgeon doing large practice; nothing to invest. Add. 346 I, % AMA.

HAVING JUST FINISHED SIX MONTHS' post-graduate work, would be glad to communicate with any good eye, ear, nose and throat specialist in Iowa desirous of an assistant or partner; twelve years in general practice; aged 36; married. Add. 622 I, % AMA.

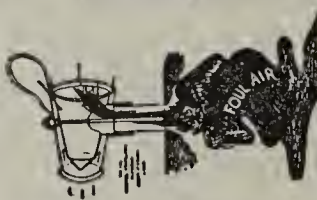
WANTED — POSITION AS SUPERINTENDENT of hospital or other institution by a woman physician, who is also a trained nurse and experienced in institutional management; highest credentials as to character and social position, as well as professional and executive ability. Add. 629 I, % AMA.

WANTED—SITUATION — AS ASSISTANT to general practitioner on either a straight salary, or percentage basis; have had two years' hospital experience; good laboratory training; licensed in Ohio; single; aged 30; not afraid of work; best of references furnished and expected. Add. 529 I, % AMA.

WANTED — ASSISTANTSHIP TO EYE, ear, nose and throat specialist, by physician with seven years general practice and considerable experience, including two special courses in this specialty; graduate of first-class school of medicine, also pharmacy, and married; good habits; aged 32; best references; would consider partnership later; licensed in Minnesota, North Dakota, Wisconsin and Illinois. Add. 637 I, % AMA.

WANTED — BY MARRIED PHYSICIAN, aged 28, graduate leading Philadelphia college, thoroughly experienced in hospital and laboratory work, skilled anesthetist, assistantship to busy physician or surgeon (physician preferred); go anywhere; willing to work hard; thoroughly ethical; best references; at present in private practice; leaving because of climate; need position with immediate remuneration. Add. 434 I, % AMA.

Pure Air Ventilation



ALL KINDS

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Descriptive
Circulars

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VENTILATING SYSTEM

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The Aldine Hotel

Chestnut St., above 19th

PHILADELPHIA, PA.

Is situated in the centre of the most select and exclusive residence section of the city, and is convenient by car line to the shopping district, the theatres and railway stations. Its accommodations, service and special conveniences are of the very best.

American and European plans

W. F. PERRY,

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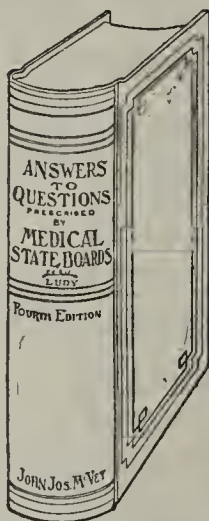


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German Electric Ear Telephone

Your deaf patients will appreciate your interest if you tell them about this instrument. It transmits sound waves direct to the labyrinthine structure. Very sensitive, scarcely noticeable. Price to physicians, \$8.50. Satisfaction guaranteed.

BETZ CO., Hammond, Ind.



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Medical State Boards

BY

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Only original state board book, not an imitator. Has real questions asked, with accurate answers by specialists.

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DO YOU WANT to dispose of your car? DO YOU WANT to buy a second-hand car? ONLY COSTS 5cts. a word (min'm 30 words) to advertise your wants in the columns of THE JOURNAL

WANTED—YOUNG MAN, AGED 30, MARRIED, no children, Protestant, ethical, of good moral habits, desires salaried position as assistant to physician or surgeon or in hospital; graduate of good school; registered in Massachusetts; have had hospital experience and in private practice at present time. Add. 532 I, % AMA.

WANTED—ILLINOIS OR IOWA—HAVING completed a postgraduate course, I desire to communicate with eye, ear, nose and throat specialist, with view to assistantship; best references given and required; fourteen years of practical experience; ready at once; aged 34; married. Add. 621 I, % AMA.

WANTED — LOCATION OR PARTNERSHIP in Colorado or New Mexico in town of 2,000 or more; will pay moderately for office equipment or will give \$25 bonus to party locating me; am Northwestern graduate with 8 years' practice; desire a progressive community and growing town. Add. 354 I, % AMA.

WANTED—ILLINOIS—PHYSICIAN WHO has had special work in hospital and minor surgery and over four years of general practice, desires salaried position in hospital, sanitarium or manufacturing city, or as an assistant to physician and surgeon in Illinois or reciprocating states; state salary; references given and wanted. Add. 455 I, % AMA.

WANTED—BY COUPLE—POSITION IN sanatorium in West; wife graduate masseuse and nurse of Stockholm, Sweden; husband graduate of Nauheim, Germany, and Bellevue Hospital, New York City; both experts in hydrotherapy, massage, gymnastics, electricity, etc; many years' experience in private and sanatorium work and mineral springs. Add. 604 I, % AMA.

WANTED—SALARIED POSITION WITH corporation, hospital, sanitarium, or as assistant to practitioner; experience, one year in state hospital for insane, ten months locum tenens, six months general hospital, six months in charge of summer hospital for babies, one year in large tuberculosis hospital; single; aged 29; references; state salary. Add. 443 I, % AMA.

WANTED — SALARIED ASSISTANTSHIP with busy surgeon; either private or contract work; B.S., M.D., from best Chicago schools; both hospital and private practice experience; single; aged 27; habits, health, appearance best; good worker; would like some laboratory work and live in hospital; Protestant. Add. Dr. C. G. T., Samaritan Hospital, Sioux City, Iowa. I

MISCELLANEOUS—WANTED

WANTED—TO PURCHASE FIVE OR TEN shares of stock in the F. S. Betz Co., Hammond, Ind.; quote price wanted. Add. 615 J, % AMA.

WANTED — WILL RECEIVE NERVOUS or mild mental invalid in my home in western Maine; patient will find desirable retreat and receive careful professional attention; delightful climate the year round, cheerful environment, commodious residence and other advantages. Add. 605 J, % AMA.

WANTED—A NORWEGIAN SUCCESSOR in lucrative practice in prosperous town of 1,200, central Iowa; good farming community; drugs, static and x-ray and other equipment of 4-room office; owner has accepted hospital position; liberal proposition for cash; fine thing for the right man. Add. 474 J, % AMA.

WANTED—TO LEASE—FOR PERIOD OF five years, two good positions in one of our most delightful dependencies; first, yielding about \$5,000 year, half salary; rental \$100 month in advance; second, about \$3,000 year, rental \$50 month, in advance; fine house; office fully furnished. Add. 628 J, % AMA.

WANTED — A COMPETENT PHYSICIAN and surgeon, at once, with \$2,500 cash, who will buy office and driving equipment, also real estate, of retiring physician and surgeon whose country practice in Cache County, Utah, averages \$5,000 per year; excellent American ranching and farming community; investigate this rare opportunity at once. Add. 428 J, % AMA.

(Continued on page 48)

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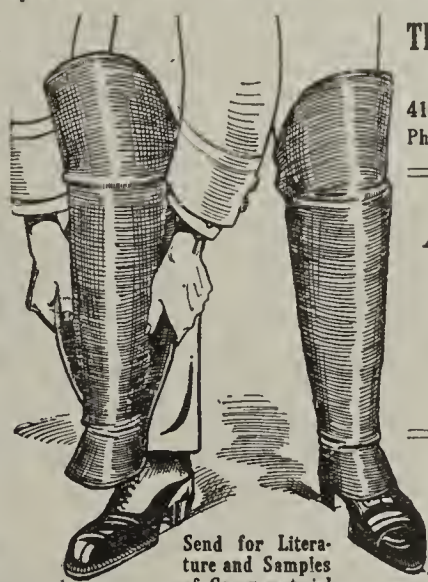
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FOR SALE—IOWA—OFFICE AND RESI-
dence building combined in small town; German community; this is a fine opportunity to make money from the start; \$1,500 cash required. Add. Box 93, Reinbeck, Iowa. L

FOR SALE—DRUG STORE, IN ST. LOUIS
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FOR SALE—PENNSYLVANIA—IN GROW-
ing town of 15,000; central part of state; a \$4,000 practice, established 13 years; an elegant brick house of 14 rooms, hot water; corner property, centrally located; am going abroad; an excellent opportunity for \$7,000 cash. Add. 491 L, % AMA.

FOR SALE—MICHIGAN—\$3,500 PRA-
ctice at price of house and office furniture; \$500 cash will handle this bargain; town of 1,000; thickly settled surrounding country, in center of Michigan fruit belt; good schools, churches, roads and people; can make money from start; one steam railroad; possession immediately; want to retire. Add. 427 N, % AMA.

FOR SALE—MISSOURI—\$2,500 PRA-
ctice in live Missouri town; population 3,000; rich farming country surrounding; will sell real estate if wanted; also equipment; will introduce buyer thoroughly if he has good references; reason for selling, going to larger place; further particulars on application; only those well qualified and meaning business need answer. Add 585 L, % AMA.

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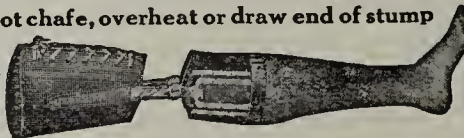
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ctice in the heart of the Yellowstone Valley; town of 1,600, up to date; county seat; two railroads; easy competition; going to specialize; price, with real estate, \$8,000, or practice alone, \$2,000; will stand close investigation; don't answer unless you have the money and mean business. Add. 544 L, % AMA.

FOR SALE—WESTERN OHIO — \$3,000
general practice; pikes, tobacco country, Miami Valley; competition right; modern home and office in village of 400; three churches, three elevators, music hall, high school; insurance appointments; price, \$4,500; \$3,000 cash, balance mortgage; have collected fortune; no triflers; reason, sickness. Add. 619 L, % AMA.

FOR SALE—KANSAS—MODERN OFFICE
equipment and residence; \$2,000 practice free; rich German-Catholic farming community; town of 2,500; collections good; no German-Catholic physician here; price, with residence, \$3,700; without, \$1,200; write for particulars and reasons for selling if you mean business; will introduce purchaser. Add. Dr. W. G. Iles, Seneca, Kan. L

FOR SALE—CENTRAL ILLINOIS—\$5,000
practice, \$4,500 property, large 8-room house large new barn, 2-room office, on paved street; town of 1,200; city gas, 2 railroads, fine schools and churches; large rich territory; price, \$4,500; \$2,500 cash, balance on mortgage; reasons, specializing; competition fair; collections 100 per cent.; act quick; will introduce. Add. 555 L, % AMA.

FOR SALE—ALABAMA — \$3,000 PRA-
ctice; good collections; manufacturing town; healthy location; schools, churches and lodges; fine for practice and drug business; mostly cash practice; instruments, etc., store, building, everything for sale; price, \$1,500; good terms if desired; this appears but once; enclose stamp for reply; quitting for other business. Add. 627 L, % AMA.

FOR SALE—MINNESOTA — \$4,500 GEN-
eral practice; established 20 years, given with real estate, including residence and office fixtures; price, \$6,000; live town of 1,500; good farming community; purchaser to be well introduced; fine opening for surgical work; collections over 90 per cent.; splendid chance for right party; Bohemian preferred; competition right. Add. 417 L, % AMA.

FOR SALE—INDIANA — \$5,000 TAKES
\$6,000 practice, 9-room house, 3-room modern office located in town of 1,000 on main line Monon R. R.; three churches, public and high school in town; rich farming country; nearest competition 5, 7 and 12 miles; fine roads, level black prairie; collections 98 per cent.; practice established 20 years; price, \$5,000; balance long time; reason for selling, going to stock farm; this practice has paid \$20,000 in past three years. Add. 583 L, % AMA.

FOR SALE—COLORADO — CONTRACT
practice paying \$150 a month; private practice paying \$100 a month; drug stock, strictly new, about \$700; new pressed-brick store building, 25x60, 11, \$2,500, including garage 15x25, with shed 7x9; cash required, \$700 for drugs, \$800 for building; balance on easy terms; new Buick automobile, \$1,250, optional; new town, on new railroad, in new irrigated district of 100,000 acres, just opened, in the famous San Luis Valley; have important business elsewhere. Add. giving references, Dr. H. O. Beeson, San Acacio, Colo. L

FOR SALE—NEBRASKA—REAL ESTATE
and practice in town of 2,000; best county in state; main line of C. B. & Q. R. R.; branch Great Northern and two other divisions; 30 miles from Omaha, 24 from Lincoln; all trains stop; modern 10-room house, 3-room office on residence lots; electric lights, water and sewer equipment; one gas engine, dynamo, x-ray, high tension coil, electrodes, vibrator, air tank and pump, all operated by motors; up-to-date office; ozone inhalator; good barn on lot; city water in house, lawn, etc.; practice established in 1882; business from \$5,000 to \$9,000 per year; good opening for two physicians; general practitioner, surgeon and gynecologist; 5 churches; all secret organizations; two physicians can make \$12,000 a year or more; everything for sale; terms and particulars on request. Add. 558 L, % AMA.

(Continued on next page)

FOR SALE—SOUTHERN MISSOURI—AN old and well-established country and town practice and drug store in connection; fine climate; good people; all whites; room for two doctors; wish to retire; a snap if taken soon; might consider an exchange for lands in southern Texas or New Mexico; this appears but once. Add. 608 L, % AMA.

FOR SALE—MISSOURI—A GOOD LARGE practice and drug store in the Ozark region; fine climate; good citizenship; no negroes; two doctors could do well with this proposition; practice established for many years; will retire; a great bargain if taken soon; this adv. appears but once. Add. 607 L, % AMA.

FOR SALE—EASTERN OREGON — \$3,000 practice in town of 800 free to purchaser of team, buggy, harness, property of five lots, eleven-room house, partly furnished, barn and wood-house; one block from Main St.; office in house; location best section wheat belt; 6,000 acres soon irrigated; population will double or triple; price, \$3,500. Add. 495 L, % AMA.

FOR SALE—KANSAS — EAST CENTRAL part—Residence property and office building; \$200 rentals; price, \$4,500; part time; accredited high school; live town; big territory; prosperous community; will give \$4,000 practice and introduce physician buying real estate; fine proposition for good man; best reasons for selling; get busy. Add. 557 L, % AMA.

FOR SALE—OHIO—IDEAL LOCATION for good physician; in inland village; modern 8-room house, 3 office rooms connected; furnace heat, hot and cold water, bath; electric lights in house and barn; corner lot on public square, designed by physician; good schools and churches; competition light; easy terms. Add. Box 65, Mt. Eaton, Ohio. L

FOR SALE—NORTHERN OKLAHOMA— \$4,500 general practice; also new modern elegantly furnished residence in a new oil and gas town of 10,000; competition right; reason for selling, going abroad; collections 95 per cent.; best equipped office in town; office, equipment and good will, \$800 cash; residence optional. Add. 610 L, % AMA.

FOR SALE—PENNSYLVANIA—A COUN- try practice in the Pennsylvania oil fields, averaging about \$4,000 yearly; will give practice free to purchaser of dwelling, real estate, driving outfit and office equipment; value, \$2,500; wish to locate in large city; purchaser can make money from the start; will transfer all appointments. Add. 503 L, % AMA.

FOR SALE—OHIO—\$700 BUYS RESI- dence and practice at Montville; been physician's lucrative office more than quarter of century; make living from start; fine, friendly people; eight miles to Chardon, county seat and railroad; stores, churches, schools, hotel, cheese factory, five miles to nearest doctor. Add. owner, C. A. Camp, Mentor, Ohio. L

FOR SALE—MICHIGAN—ESTABLISHED eye, ear, nose and throat practice; cash income about \$4,000; city of 35,000; best equipment, in modern building; will introduce; excellent opportunity; other business necessitates my selling; price, \$1,500 cash, and \$500 on terms to suit; wire or write. Add. H. D. Obert, 32 Union Bank, Jackson, Mich. L

FOR SALE—CENTRAL ILLINOIS — UN- opposed practice, residence and new office of two rooms on same lots; excellent school advantages; steam and electric railroads; a splendid location; money from the start; must leave for different climate; wife's health poor; write quick; I must sell at once; immediate possession; price, \$2,250. Add. 539 L, % AMA.

FOR SALE—OHIO—\$10,000 EYE, EAR, nose and throat practice; fine city; large territory; competition light; county thickly populated and wealthy; practice well established; fine, modern building in heart of city on corner lot; modern, well equipped sunny offices, first floor; modern, well arranged residence (flat) second floor; will sell for price of property and equipment; bad health reason for selling; half interest with partnership might be considered; only men with ability and money need apply. Add. 549 L, % AMA.

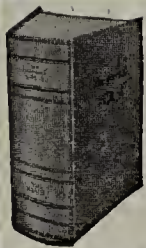
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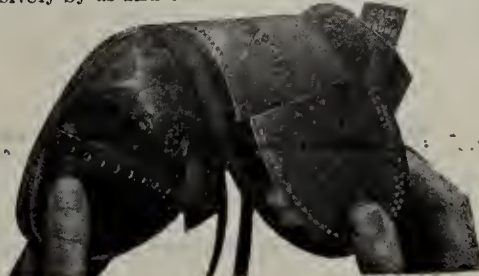
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FOR SALE—WISCONSIN—SMALL DRUG store and unopposed practice in town of 250 population, with a fine surrounding farming community; will sell cheap, and the best reasons for leaving; the nearest opposition is 8 miles. Add. Box 137, Clyman, Wis. L

FOR SALE—SOUTH DAKOTA—GENERAL practice averaging \$7,500 per year; can be increased one-third by surgeon; practice, residence, real estate and office fixtures, \$6,000 cash; will introduce; don't answer unless you are a first-class man and mean business. Add. 561 L, % AMA.

FOR SALE—OHIO—MY HOME ON ONE of the best corners in Dayton, the city of a thousand factories; house consists of six rooms, bath, furnace, slate roof, three office rooms, specially designed for a physician; everything in the best of condition; paved street. Add. 639 L, % AMA.

FOR SALE—MAINE—\$4,000 PRACTICE, modern 8-room residence, with large grounds, office furniture, fixtures and driving outfit in a manufacturing town of 2,000; near large city; no other physician within about 3 miles; purchaser must have \$7,000 to invest. Add. 423 L, % AMA.

FOR SALE—WESTERN PENNSYLVANIA—Village and country practice; collections 95 per cent.; elegant chance to go to work at once; drugs alone, with driving outfit, or with driving outfit and good home, to suit purchaser. Add. 624 L, % AMA.

FOR SALE—IN NEW YORK CITY—A general practice established twenty years, free to the purchaser of my property, consisting of a lot 75x140; modern house and barn situated on a prominent avenue; price, \$30,000; easy terms. Add. Dr. S. C. B., 2702 Marion Ave., New York City. L

FOR SALE—OHIO — 9-ROOM HOUSE, almost new, good cellar, well and cistern, plenty fruit on lot, barn and outbuildings and a \$3,000 cash practice for \$2,350; one-third cash and balance to suit purchaser; will thoroughly introduce; a bargain; reason for selling, going to specialize. Add. Box 17, Highland, Ohio. L

FOR SALE—CENTRAL SOUTHERN NE- braska—\$3,000 practice in town of 2,500, county seat; best farming community in state; \$3,500 buys residence, automobile and office furniture, or will sell automobile and office furniture separate; reasons, health; will introduce purchaser. Add. 633 L, % AMA.

FOR SALE—ILLINOIS—\$7,000 GENERAL medical and surgical practice in one of the best towns in the state, to purchaser of modern 8-room residence; value \$6,500; office fixtures and auto optional; this is the best proposition in Illinois to-day; good reasons; fullest investigation invited. Add. 570 L, % AMA.

FOR SALE OR TRADE—NEBRASKA— Drug store of about \$9,000; own one-third interest; large rich territory; town of 1,800; best location and best town in north-east Nebraska; will sell or trade locations; been practicing in place 8 years; good money-maker from start. Add. 480 L, % AMA.

FOR SALE — A THRIFTY UNOPPOSED Pennsylvania German country practice and property located 7 miles from Ailentown; Lehigh County village of 250; practice amounts to over \$4,000 yearly; good collections, good roads, building in good condition; good size lot; I want to retire. Add. 614 L, % AMA.

FOR SALE—IOWA—GOOD LOCATION IN town of about 200; rich community; going to move to the city; I offer my property, consisting of house, barn, office and part of drug stock, with a \$2,400 unopposed cash practice, at practically your own price; write for description and terms. Add. 365 L, % AMA.

FOR SALE — KANSAS — UNOPPOSED practice and drug store in new growing railroad town; biggest and richest territory for one doctor in state; Catholic preferred; you can make more here first year than many doctors are now making; easy terms; state who you are and what you want in writing. Add. 630 L, % AMA.

(Continued on next page)

FOR SALE — FLORIDA — BEAUTIFUL home on 30 acres of land, 10 acres of which are in bearing orange and grapefruit grove; also nice village practice paying \$150 cash per month; no opposition nearer than 4 miles; all for \$10,000 cash, or would take some city property in good college town as part pay; send photo of city property; nice residence and office in city preferred. Add. G. W. Dawson, Nocatee, Fla. L

FOR SALE—MICHIGAN — \$4,000 PRACTICE established 10 years in the heart of the great western Michigan fruit belt; town of 350, with 2 churches, Protestant and Catholic; good 10-grade school; macadam roads; no competition; will sell house of 9 rooms, furnace heat, and with private water system; two-room office connected with residence; office furniture and complete drug stock; barn on lot; new driving outfit, 2 horses and 2 new buggies bought last year; this bargain, if taken at once, will be sold at invoice price, practice included; reason for selling, am engaging in other business; this will appear but once. Add. 606 L, % AMA.

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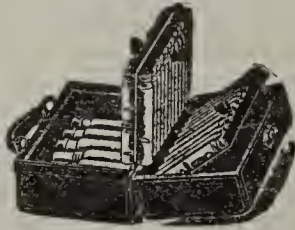
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(Continued on next page)

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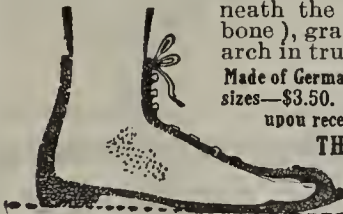
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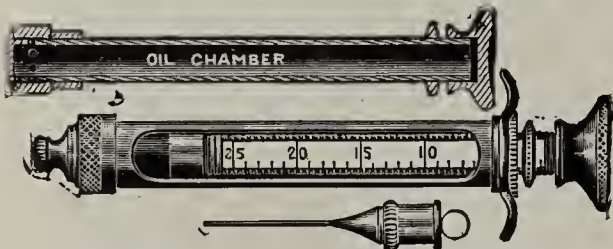
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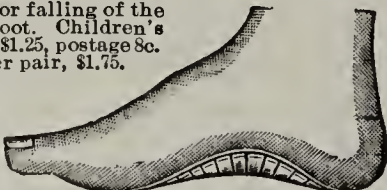
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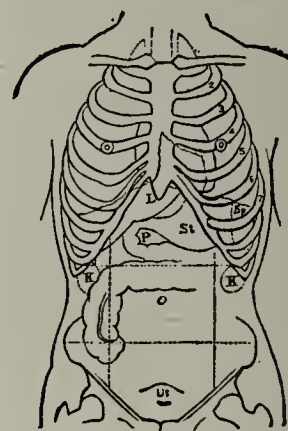
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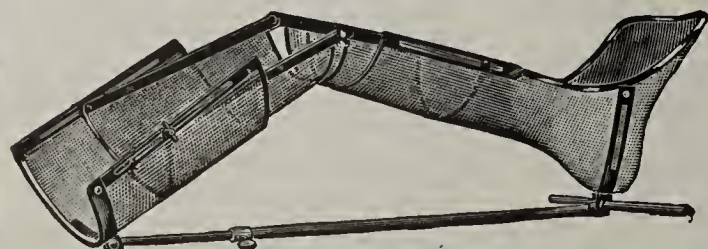
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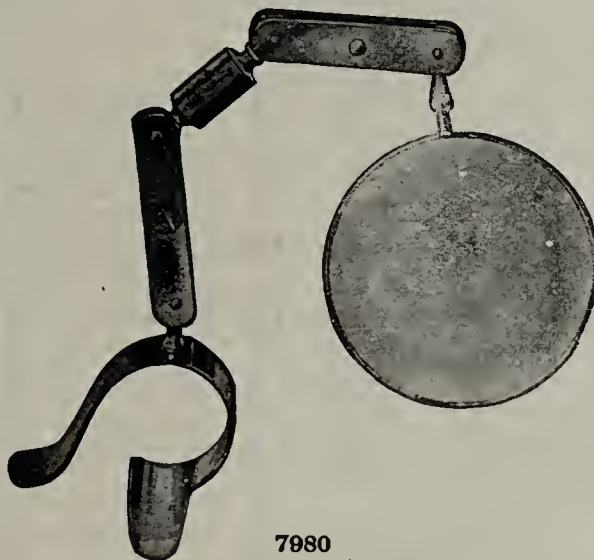
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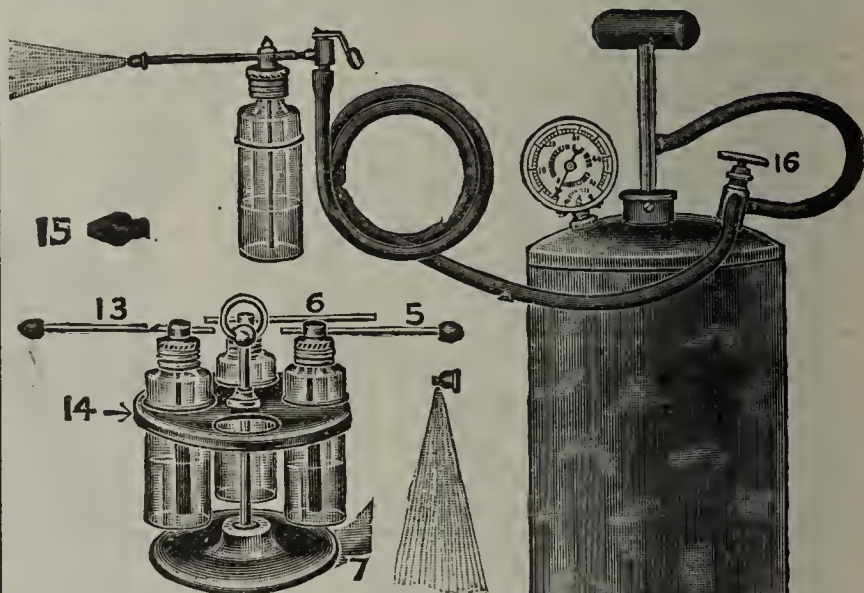
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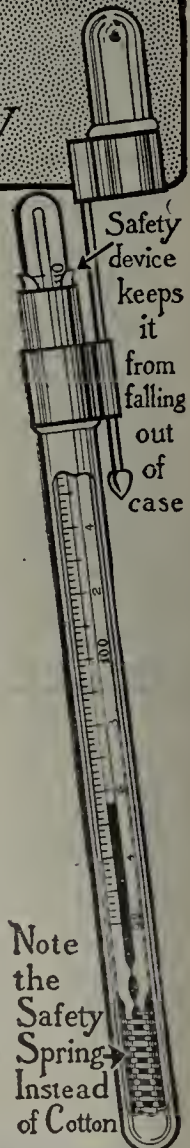
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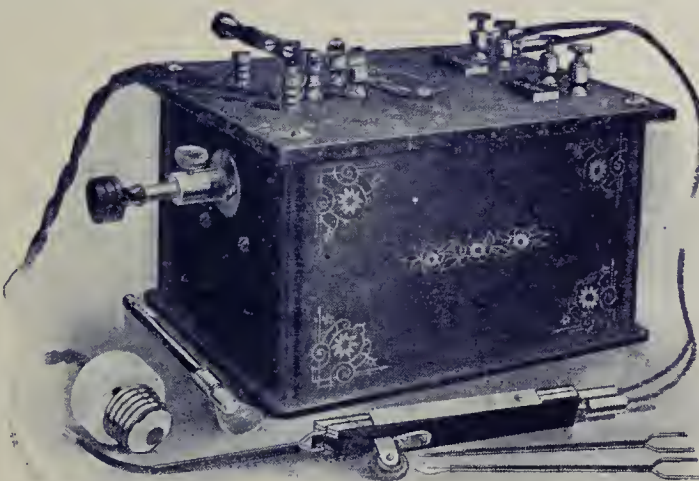


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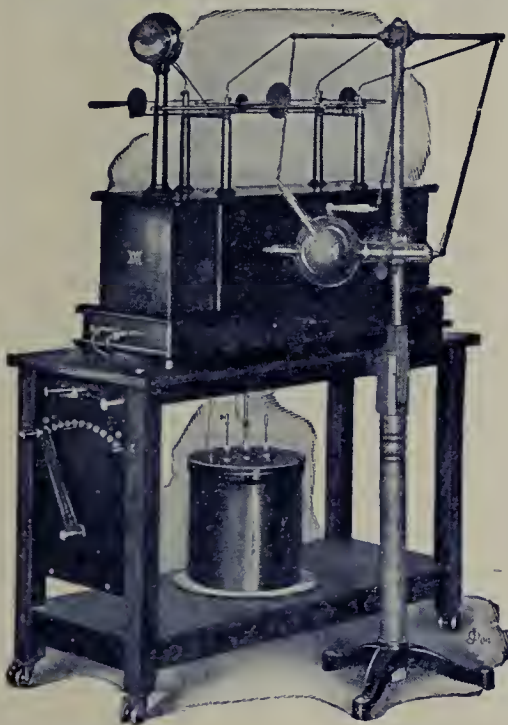
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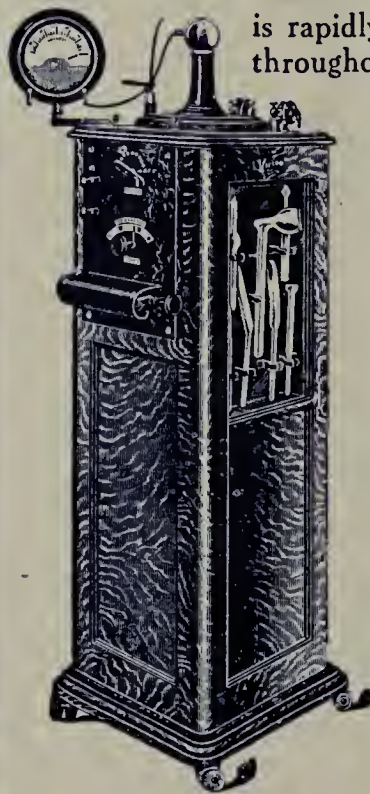
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